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Childhood Behavioural Disorders:

Partnerships between the Health and Education Sectors

Santuri Rungan

A thesis submitted in fulfilment of the requirements for the degree of

Doctor of Philosophy

Faculty of Medicine and Health, University of Sydney

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Ngaramadhi means deep listening and quiet, a still awareness from which flows an understanding of the beauty of nature. Ngaramadhi recognises the inner spirit that calls us to reflection and contemplation of the wonders of creation.

- Dharawal Community

Statement of Originality

Author

This is to certify that to the best of my knowledge, the content of this thesis is my own work. This thesis has not been submitted for any degree or other purposes.

I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

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Primary Supervisor

This is to certify that to the best of my knowledge, the content of this thesis is the work of Santuri Rungan. This thesis has not been submitted for any degree or other purposes.

I certify that the intellectual content of this thesis is the product of Santuri Rungan's work and that all the assistance received in preparing this thesis and sources have been acknowledged.

Signature

Name: John Eastwood

Acknowledgements

As one story ends may many more take flight. This journey started with an idea and a willingness by many to try, with the sole purpose of making a difference. It is with immeasurable gratitude that I reminisce about the first meeting held at Yudi Gunyi School and of the various people who were involved in turning a shared vision into a shared reality.

I am immensely grateful to my supervisory team for their guidance, advice and support. Professor John Eastwood, my primary supervisor, has been a visionary leader and champion of integrated care initiatives. My secondary supervisors, Dr HueiMing Liu, for her clarity of thought and systems approach to research in the community, and Professor Jennifer Smith-Merry, whose knowledge and insightfulness has been highly valued. I am appreciative of Professor Susan Woolfenden, who as the Director of Community Paediatrics has continued to support the growth of this model as well as provide wisdom and insights into its evaluation.

My appreciation to all those that have participated in this study is unswerving. Your time, passion and commitment, but mostly the generous retelling of your stories, have been inspirational. I am particularly indebted to Uncle Terry Denzil, Aunty Deborah Daley and Vanessa Edwige for being the driving force behind this project and their unwavering promise of doing what is best for the community.

Lastly, I acknowledge that I stand on the shoulders of giant and I am grateful for those that came before me, particularly my parents and grandparents, for paving the way for me to grow and achieve. I am ever thankful for my children, my husband and my siblings for being patient, enthusiastic and encouraging as I drifted in and out of ‘PhD mode’.

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Authorship Attribution Statement

This thesis is presented as a combination of written chapters and published papers. The Wouwanguul Kanja community reference group, which is led by the Aboriginal community, provided oversight of the research design and interpretation of results, and acted as participants during the qualitative research process. Professor John Eastwood, Professor Jennifer Smith-Merry, Dr Huei Ming Liu and I led the research design, theory development, triangulation of data and results, and review of chapters and papers.

Professor Smith-Merry's research team were involved in collecting data for Phase 2a of this research, and the lead researcher in this team was Ms Alison Drinkwater. Ms Drinkwater coordinated the design and collection of data for Phase 2a. Ms Alix Beckett was an Aboriginal researcher who assisted in the Phase 2a interviews. After data collection in Phase 2a, de-identified data were provided to me for analysis. In Phase 3, a public health registrar, Dr Amber Tickle, approached potential participants to mitigate any sense of coercion that may have occurred if I had approached participants. These contributions are detailed in Chapter 4. In this thesis, where I am named as the first author on papers, I was the major contributor to data collection, analysis and writing up. Of the other authors listed in papers, none were completing a higher degree in this subject matter.

This thesis contains published material as outlined below:

Chapter 5. Childhood Behavioural Disorders in the Context of Aboriginal Culture within Australia

Citations

Rungan, S., Denzil, T., Daley, D., Edwige, V., 2022. What does the term childhood behavioural disorders mean in the context of Aboriginal culture within Australia? Part 1:'Not just using the words'. Journal of Paediatrics and Child Health 58, 1942–1945. https://doi.org/10.1111/jpc.16232

Rungan, S., Liu, H.M., Edwige, V., Smith-Merry, J., Eastwood, J., 2022. What does the term childhood behavioural disorders mean in the context of Aboriginal culture within Australia? Part 2: Historical and social context. Journal of Paediatrics and Child Health 58, 1946–1951. https://doi.org/10.1111/jpc.16219

Author Contributions

For Part 1, I facilitated a 'yarn' or conversation with Aboriginal community leaders and then provided editing and structure to the published article. For Part 2, I researched and discussed the historical and social context of this yarn based on a literature review that I conducted. I was the main author for Part 2.

Chapter 6. Ngaramadhi Space: An Integrated, Multisector Model of Care for Students Experiencing Childhood Behavioural Disorders

Citation

Rungan, S., Gardner, S., Liu, H.M., Woolfenden, S., Smith-Merry, J., Eastwood, J., 2023. Ngaramadhi Space: An integrated, multisector model of care for students experiencing problematic externalising behaviour. International Journal of Integrated Care 23(4), 19. https://doi.org/10.5334/ijic.7612

Author Contributions

I described the model of care based on my clinical role in implementing the model. I was the main author for this paper.

Chapter 7. Quantitative Evaluation

Citation

Rungan, S., Montgomery, A., Smith-Merry, J., Liu, H.M., Eastwood, J., 2023. Retrospective audit of a school-based integrated health-care model in a specialised school for children with externalising behaviour. Journal of Paediatrics and Child Health 59, 1311–1318. https://doi.org/10.1111/jpc.16515

Author Contributions

I designed the study in collaboration with my supervisors and applied for ethics approval. I set up the data collection system, designed a REDCap database and analysed the data. I formulated the findings from the study and was the main author for this paper.

Chapter 8. Qualitative Evaluation

Citation

Rungan, S., Smith-Merry, J., Liu, H.M., Drinkwater, A., Eastwood, J., 2024. School-based integrated care within Sydney Local Health District: A qualitative study about partnerships between the education and health sectors. International Journal of Integrated Care 24(2), 13. https://doi.org/10.5334/ijic.7743

Author Contributions

I designed the study in collaboration with my supervisors and applied for ethics approval. I collected and analysed the data. I formulated the findings from the study with my supervisory team and was the main author for this paper.

Chapter 9. Kalgal Burnbona: A School-Based Integrated Care (SBIC) Model of Care

Citation

Rungan, S., Liu, H.M., Smith-Merry, J., Eastwood, J., 2024. Kalgal Burnbona: An integrated model of care between the health and education sector. International Journal of Integrated Care 24, 14. https://doi.org/10.5334/ijic.7745

Author Contributions

I developed and proposed an original framework called Kalgal Burnbona based on the findings of this research. I was the main author for this paper.

Author

Signature*

Name: Santuri Rungan

Primary Supervisor

Signature

Name: John Eastwood

CHILDHOOD BEHAVIOURAL DISORDERS: PARTNERSHIPS BETWEEN THE HEALTH AND EDUCATION SECTORS

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Australia is a hard place. It is a place still seeking peace with itself. The journey for justice is a road half travelled. ‘Sorry’ isn’t enough when the First People of this land die younger and suffer more than any other Australians. Reconciliation and recognition and Treaty are the business we have not finished. But, oh how my people sing. And how we play. We are the living story of this land and it is a story just waiting for you.

—Stan Grant
Television news and political journalist, television presenter,
filmmaker and bestselling author
November 2020
(Behrendt, 2021)

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Reflexivity Statement

Qualitative research and mixed-methods research are subjective in nature, making the researcher's experiences and positionality in relation to what is being studied important when assessing the quality of the research (Dodgson, 2019). As a clinician-researcher, I acknowledge that I hold prior knowledge and understandings of the group being studied while also being a member of that group. To understand who I am and how I have influenced this research, here are my reflections on my life story and what I bring to this research.

I am a dual-trained paediatrician specialising in the fields of general paediatrics and community child health. I am of Indian descent and am the third generation in my family to be born in South Africa. My great-great-grandparents migrated from India in the 1930s as indentured workers when India was under British rule. In 1948, apartheid was introduced in South Africa. This was a system of institutionalised racial separation and oppression, which my parents were born into. My parents believed in the value of education, and although both lived within socio-economic disadvantage, they succeeded at school and became teachers who guided and inspired generations of children.

In 1990, Nelson Mandela was released after spending 27 years in prison. This marked a period of great change and great unrest in South Africa. My parents made the decision to immigrate to New Zealand, where, after the usual ups and downs experienced by recently arrived immigrants, we settled in our adopted home. I wonder if any of this would have been possible if my parents did not have an education and a profession to lean on.

New Zealand is truly a beautiful country, where compassion, equity and social responsibility are valued. Over time, I completed my medical training and immigrated to Australia to complete a fellowship in community paediatrics with a focus on priority populations such as refugee and Aboriginal children. During this fellowship, my understanding about the wellbeing, history and culture of Australia grew. During that period, I completed a Master of Public Health and Tropical Medicine. This degree transformed my views on health and wellbeing. Prior to this, I would have characterised myself as being a hospital-biased doctor who saw health as primarily being about disease and cure. As I learned more about the principles of public health, my understanding about how socially determined factors influence health and wellbeing deepened.

In 2015, I was offered a position as a community paediatrician within Sydney Local Health District. I was asked by my director to work with Yudi Gunyi School to develop a multidisciplinary school-based clinic. This is where my learnings about partnerships between schools, the health sector and the community began. My training in medicine skews my perception towards a health focus. Although I work closely with the education and social care sector, I do reflect on and remind myself that the goals of education and social care differ from, and often supersede, those of the health sector.

Now I am a wife, a mother of two young girls and a paediatrician juggling to attain a work and life balance. I am fortunate. I am educated. I am healthy. I am resilient. I am financially secure. I was born into a safe and loving family. I am aware that this is not how every story of generational hardship goes. My history influences how I see the world. I believe in justice, a ‘fair go’, and that all children should be free and have a right to a good education, good health and good mental health. This is regardless of their social status, gender or race. This is my bias and I bring this to my research.

Reflecting on what I bring to this body of work, I am aware that my optimism can create discomfort. I have worked alongside children, families and communities that have faced adversity and psychological trauma. While in my field of work, we offer solutions, support and hope, there is also a high likelihood that the trajectories for the children we see will not change, despite our will. This is an uneasy feeling, yet we cannot and must not give up.

In conducting this research, I assumed that participants would at some level understand the link between education, health and wellbeing. In doing this, I was undoubtedly partial to a deficit way of thinking, of wanting ‘better’. I was also emotionally connected to this work. This may have affected how questions were asked or the line of enquiry, analysis and interpretation of results. With this in mind, the research was designed to minimise bias and is addressed in Section 4.1.8.2.

In summary, as a clinician-researcher, my history and experiences were both the inspiration and the bias in this body of research. While I endeavoured to be objective, I was also subjective. However, over the years, I believe that my medical and research training has helped develop my skills in reasoning and decision-making, which brings a degree of authenticity and credibility to this study.

Abstract

Background

Mental health and behavioural disorders affect 20% of children; yet only 30% access appropriate care. An integrated school-based health care (SBHC) model was co-designed at a specialised behavioural school to improve access and engagement with health services.

Aims and Methods

The purpose of this thesis was to describe the need for and the co-design, evaluation and potential for scale-up of an SBHC program called Ngaramadhi Space. Using mixed methods, the quantitative phase described the population. The qualitative phases explored the model's development and implementation facilitators and barriers.

Findings

Quantitative phase

- Multiple unmet needs
- Most students (76%) known to child protection services
- High attendance at school clinic (86%)
- Significant behavioural improvements (Strengths and Difficulty Questionnaire—teacher)

Qualitative themes

a) Integrated People-Centred Health Service framework

    Strategy 1: Engaging and empowering people and communities—community driven, improved access, positive outcomes, 'connection' and culturally safe

    Strategy 2: Strengthening governance and accountability—system integration and evidence base

    Strategy 3: Reorienting model of care—reduces inequity

    Strategy 4: Coordinating services—multidisciplinary and stable workforce

Strategy 5: Enabling environment—leadership, stakeholder commitment and adequate resourcing

b) Looman's implementation strategies

Applying collaborative governance

Distribution of leadership

Building positive team culture

Incremental growth models

Balancing flexible and formal structures

'Integrators'

Conclusion

Support for the SBHC model from community and stakeholders was significant. Using the insights gained from this thesis, a framework called Kalgal Burnbona has been proposed for SBHC implementation across Sydney Local Health District. Future research requires inclusion of education, social and implementation outcomes. Policy needs to reflect integrated care for children across sectors.

Abbreviations

ACCHS	Aboriginal Community Controlled Health Services
ACE	Adverse childhood experience
ADHD	Attention deficit and hyperactivity disorder
AIDS	Acquired immunodeficiency syndrome
ASPD	Antisocial personality disorder
ASQ	Ages and Stages Questionnaire
ASQ:SE	Ages and Stages Questionnaire: Social Emotional
AUD	Australian Dollar
CBCL	Child Behaviour Checklist
CBD	Childhood behavioural disorder
CD	Conduct disorder
CDRP	Centre for Disability Research and Policy
CHC	Chronic health condition
CHECK	Coordinated Healthcare for Complex Kids
CoP	Community of practice
CP	Coping power
CRS–R	Conners' Rating Scales–Revised
CSHP	Coordinated school health program
CU	Callous-unemotional
DSM-5	*Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition*
ERT	Emotional recognition therapy
EUR	Euro
FER	Facial emotional recognition
FFT	Functional Family Therapy
FTA	Failure to attend
HHAN	Healthy Homes and Neighbourhoods
HIV	Human immunodeficiency virus
ICD-10	*International Classification of Diseases, Tenth Revision*
IPCHS	Integrated People-Centred Health Service
KTA	Knowledge to Action
MOU	Memorandum of understanding

MST	Multisystemic therapy
NCHP	National Community Hubs Program
NS	Ngaramadhi Space
NSW	New South Wales
NZ	New Zealand
ODD	Oppositional defiant disorder
REDCap	Research Electronic Data Capture
SBHC	School-based health care
SBHS	School-based health services
SBIC	School-based integrated care
SCCS	Schools as Centres of Care and Support
SDQ	Strengths and Difficulties Questionnaire
SEWB	Socio-emotional wellbeing
SLHD	Sydney Local Health District
START	Systemic Therapy for At Risk Teens
UK	United Kingdom
UN	United Nations
US	United States
USD	United States Dollar

PART A: FOUNDATIONAL CONCEPTS

In Part A, the foundational concepts underpinning this thesis are presented. The part begins with an introduction (Chapter 1), followed by a literature review of conduct disorder as an example of childhood behavioural disorders (Chapter 2) and a literature review on partnerships between the education and health sectors (Chapter 3). Thereafter, the research methodology and methods are described (Chapter 4).

Chapter 1 Introduction

1.1 Background

Young people aged between 10 and 24 make up a quarter of the world's population (Das Gupta et al., 2014). They are adversely affected by mental health and behavioural disorders, which account for 45% of the burden of disease experienced by this group (Gore et al., 2011; Strong et al., 2021). Fifty per cent of these disorders first emerge before 15 years of age and 75% by 25 years of age (Kessler et al., 2005; Solmi et al., 2022). Through suicide, mental health disorders represent the second most common cause of death for young people (Centers for Disease Control and Prevention., 2022; McGorry et al., 2024). Within Australia, 10%–15% of children are affected by mental health problems (Lawrence et al., 2016; Sawyer et al., 2018), and Aboriginal children in Australia experience inequitable health, mental health and educational outcomes (Doyle and Hill, 2008; Edwige and Gray, 2021; Salmon et al., 2018; Shultz et al., 2018).

Globally, there has been limited progress in reducing the burden of disease attributed to mental health and behavioural disorders among children and youth (Strong et al., 2021). These disorders are associated with negative, long-term individual, social and economic outcomes, factors that have been compounded by the COVID-19 pandemic (Czeisler et al., 2020). Prior to the COVID-19 pandemic, mental health disorders, including depression, anxiety and suicidality, in young people had been increasing around the world (Mojtabai et al., 2016; Slee et al., 2021; Wiens et al., 2020). A systematic review comparing the mental health of children and young people before and during the pandemic reported longitudinal deterioration in mental health and increased depression, anxiety and psychological distress after the pandemic started (Kauhanen et al., 2023). Across Australia, 74% of those attending youth mental health centres described a worsening of their mental health during the pandemic (Headspace, 2020). Of affected individuals, only 30% are able to access mental health services (Bruns et al., 2016; Clark et al., 2017; Merikangas et al., 2011; National Mental Health Commission, 2021). Therefore, there is a growing need to develop novel solutions to these issues (Fairchild et al., 2019; Merikangas et al., 2011; National Mental Health Commission, 2021; Ran et al., 2016).

There is a strong association between health and education outcomes, which makes collaboration between these sectors an effective way of improving results in both areas (Allensworth and Kolbe, 1987; Arenson et al., 2019; Keeton et al., 2012; Larson et al., 2017;

World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021). In particular, health services can leverage the trust and convenience that schools afford to families when delivering health and mental health care (Arenson et al., 2019; Keeton et al., 2012). The international literature demonstrates the positive impact school-based health care (SBHC) can have on learning, physical health and mental health while reducing barriers to access (Allensworth and Kolbe, 1987; Keeton et al., 2012; World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021). Within Australia, SBHC is an emerging concept, and little is known about the outcomes of such models of care and how they can be implemented in different settings (Diaz et al., 2021).

This research was based at a school called Yudi Gunyi School (YGS), located in Sydney, Australia. YGS is a specialised secondary school for students experiencing childhood behavioural disorders (CBDs). The school and Aboriginal community had identified that students attending the school had complex support needs caused by social marginalisation and social issues. The school and community wanted to establish a holistic and integrated model in which professionals from the health, education and social care sectors worked collaboratively to meet the needs of these students (Gonski Institute for Education, 2020). In 2014, YGS partnered with the community paediatrics department at Sydney Local Health District (SLHD) to design and implement a multidisciplinary model of care for students attending the school. The model was called Ngaramadhi Space (NS), a name gifted to the initiative by the Indigenous community that means ‘deep listening’. NS refers to the multidisciplinary clinic as well as the rooms within the school where the clinics are held. The model of care represents an integrated approach between the health, education and social care sectors. The shared goal of the model was to address the physical health, mental health, educational and social needs of students and their families. The multidisciplinary team included a paediatrician, youth health nurse, social worker, school counsellor, speech therapist and occupational therapist. A partnership was formed with a child and adolescent psychiatrist, who provided consultative advice on students.

In this thesis, partnerships between the health and education sectors are explored as a mechanism for increasing access and engagement to physical health and mental health services for students attending YGS. This research has important implications for the health and education sectors through its exploration of how such partnerships could improve the outcomes for these children. Importantly, the Aboriginal community within Australia values collaboration across sectors to improve the socio-emotional wellbeing (SEWB) of Aboriginal children (Mental Health Commission of NSW, 2020).

1.2 Theoretical Principles

The principles that inform this body of work stem from global public health discourses. These include broader definitions that describe health as a ‘state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity’ (World Health Organization, 1948, p. 1). The special rights of children are additionally acknowledged in the United Nations (UN) Convention on the Rights of the Child where signatories declared their ensuing responsibility to ensure that every child has the right to the best health care possible and the right to an education (United Nations, 1989). The convention also emphasises the rights of Indigenous children to exercise their cultural rights and the importance of this for individual and community development, identity and resilience (United Nations, 1989).

Other public health principles that guide this research include a social determinants model of health whereby the social, political and community factors that affect health and wellbeing are considered (Bronfenbrenner., 1992).

1.3 Definition of Terms

The terms ‘child’ and ‘youth’ vary in their definitions. In general, the UN defines a child as a person up to 18 years of age (United Nations, 1989) while a youth is aged between 15 and 24 (UN General Assembly, 1981). For the purposes of this research, which focuses mainly on secondary school students, the terms child, young person or student refer to persons up to the age of 18 unless otherwise specified when citing the literature.

The term ‘Aboriginal and Torres Strait Islander people’ is used to describe the original inhabitants of Australia. The correct use of terminology when describing Aboriginal and Torres Strait Islander people, as well as other First Nations people, is essential because inappropriate use of language can be offensive and perpetuates a system of marginalisation and discrimination (Australian Indigenous HealthInfoNet, 2022). The term ‘Aboriginal’ does not usually include those people of Torres Strait Islander descent, and similarly, the term ‘Torres Strait Islander’ does not include Aboriginal people. Since Australia’s population comprises people from both Aboriginal and Torres Strait Islander descent, the use of ‘Aboriginal and Torres Strait Islander’ is preferred when referring collectively to Australia’s original inhabitants (Australian

Indigenous HealthInfoNet, 2022). This study was based in Sydney, where the majority of Aboriginal and Torres Strait Islander people identify as being Aboriginal (96.1%) compared with 91.4% across Australia (City of Sydney, 2021). For this reason, the term ‘Aboriginal’ is used as an adjective when describing or discussing Aboriginal people or communities involved in this research. The use of this terminology is not intended to diminish the important role and place of the Torres Strait Islander community within Australia, but reflects the context of this research, which was developed with the community through the Wouwanguul Kanja community reference group (Behrendt, 2021; UNSW, 2023).

The concept of community of practice (CoP) is relevant to this research and is applicable when considering the implementation of the model of care to other settings. The term CoP refers to shared knowledge that is acquired within a group to reduce variations and inconsistences in research methodology, particularly when using mixed methods (Lave and Wenger, 1991). The process of learning or acquiring knowledge in this setting is done through participation within the group and through the adoption of shared practices (Denscombe, 2008). Forming a CoP is thus a way of creating consistency in mixed-methods research.

1.4 Goal and Objectives

Goal: The overall goal of this thesis was to describe the need for and the co-design, evaluation and potential for scale-up of a school-based healthcare program (NS) developed with the Aboriginal community to provide holistic care for students attending a specialist behavioural secondary school in Sydney. The project had five main objectives relating to this overarching goal:

Objective 1. To explore the cultural, social and historical factors associated with CBDs within Australia.

Objective 2. To describe how the NS model of care was co-designed with the health sector, schools and the Aboriginal community.

Objective 3. To evaluate the characteristics and needs of students attending NS between 2016 and 2019 to inform ongoing implementation efforts and scaling up of the model of care.

Objective 4: To understand the facilitators and challenges of developing and operating a multidisciplinary school-based model of care for CBDs.

Objective 5: To understand how the NS model could be implemented in other educational settings, as well as the related challenges and facilitating factors.

1.5 Research Methods

To conduct this evaluation, a critical realist–informed, sequential three-phase mixed-methods approach was designed. In Phase 1, quantitative research was used to describe the population assessed at NS in terms of demographics, attendance at the clinic, health and wellbeing screening, recommendations made, and changes in behaviour. In Phase 2, qualitative semi-structured interviews were used to understand the factors related to the model of care, including the facilitators and barriers to forming partnerships between the health and education sectors. In Phase 3, qualitative semi-structured interviews with a CoP were used to understand the factors related to implementing the model of care at other sites, including the facilitators and barriers associated with this process. Qualitative themes were mapped to the Integrated People-Centred Health Service (IPCHS) framework (World Health Organization, 2016) and Looman et al.'s (2021) implementation strategies for integrated care.

The ontological and epistemological views underlying the mixed methodology were positioned in the middle, in recognition of the importance of both objective and subjective information. Furthermore, the methodology was based on critical realism in that the model had emerged as a potential solution for inequitable health, education and social outcomes observed within local communities. This study has attempted to understand the underlying nature or mechanisms of SBHC models, particularly the elements relating to partnerships between the health and education sectors, to identify the facilitating factors and barriers to this process.

1.6 Thesis Outline

This thesis is presented in three sections, which can be visualised in Figure 1.1.

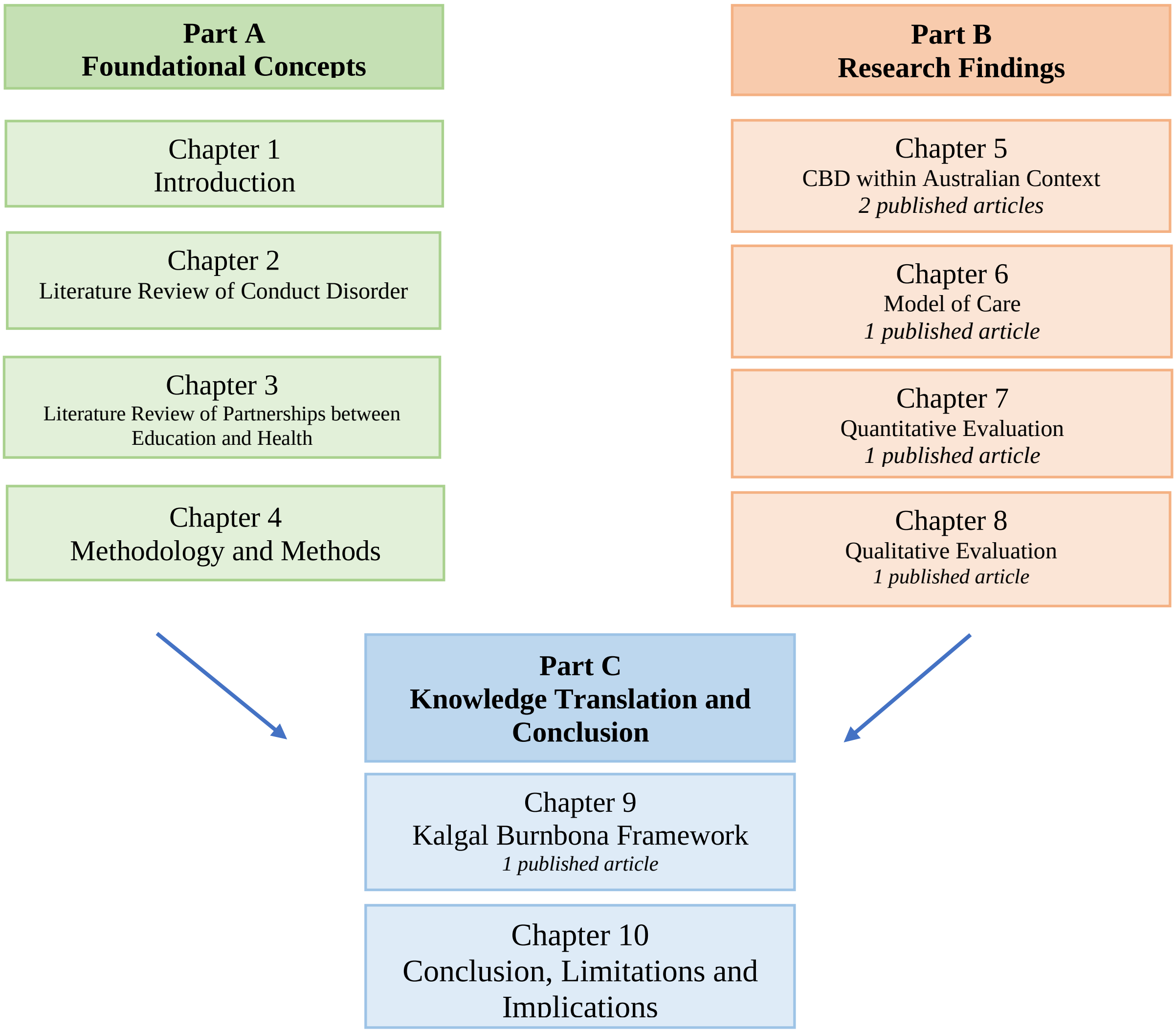


Figure 1.1: Thesis Outline

Part A describes the foundational concepts underpinning this research and is composed of four chapters. Part A includes this introductory chapter (Chapter 1), which describes the burden of disease and future risks associated with mental health and behavioural disorders, and the inequitable effect this has on Aboriginal children in Australia (Doyle and Hill, 2008; Edwige and Gray, 2021; Patton et al., 2016; Salmon et al., 2018; Shultz et al., 2018; Strong et al., 2021). This is followed, in Chapter 2, by a literature review of conduct disorder (CD), which is an example of a CBD, because of its association with an array of negative outcomes for individuals and society as a whole (Fairchild et al., 2019). The review includes the definition, epidemiology, associated costs, clinical features, aetiology, pathophysiology, diagnosis and management of CD. In Chapter 3, a literature review on partnerships between the education and health sectors is discussed to understand how collaborative partnerships between these sectors can be successful in improving physical health, mental health, education and social outcomes for children. Examples are drawn on from global models and frameworks to implement SBHC. This is followed by an outline of the research methodology and methods (Chapter 4).

These foundational chapters then lead into Part B, where the research findings are elaborated on. In line with a critical realist approach, the importance of CBDs within the unique cultural, social and historical identity of Australia is explored through two published articles (Chapter 5). They include a 'yarn' or conversation with Aboriginal elders and a commentary article based on a review of the literature. Thereafter, the NS model of care and how it was developed in partnership with the health sector, education sector and community is described through a published article (Chapter 6). This is followed by the results of the NS mixed-methods evaluation through two published articles. The first article describes the quantitative evaluation (Chapter 7) and shows that the model improved access to care for students with unmet physical health, mental health and social needs. The quantitative study also demonstrated improved teacher-reported behavioural scores after students received the multidisciplinary model of care. The second article (Chapter 8) discusses the qualitative evaluation in the context of the IPCHS framework and Looman's strategies for implementing integrated care. This article provides an understanding of the facilitators and challenges of developing and operating the model and potential strategies for implementing SBHC models across New South Wales (NSW).

The knowledge gained from Part A and Part B is then synthesised in Part C, to propose how the NS model could be scaled up within SLHD. This is done through a published article in which a school-based integrated care (SBIC) framework called Kalgal Burnbona is described (Chapter 9). In Chapter 10, the research findings are summarised alongside discussion of implications for clinical practice, research and policy, followed by a concluding statement.

Chapter 2 A Literature Review of Conduct Disorder

2.1 Introduction

CBD is a broad term encompassing problematic behaviour emerging in childhood (Bardone et al., 1998; Fairchild et al., 2019; Foster et al., 2005). Patterns of externalising behaviour are formally defined as attention deficit and hyperactivity disorder (ADHD) and CD (Fairchild et al., 2019; Pilling et al., 2013). These terms are in themselves confronting, representing a Western medical and psychological system that is at odds with Aboriginal belief systems. In this chapter, CD is critically reviewed as an example of a CBD since this is often an underlying reason for students to be referred to YGS. Aboriginal knowledge systems and the implications of these for diagnoses such as CD are discussed, and these concepts are further explored in two published papers presented in Chapter 5.

In addition, and to provide a comprehensive review of the literature, the Western perspective on CD is outlined. This includes definitions, epidemiology, associated costs, aetiology, pathophysiology, clinical features, diagnosis and management of CD. While CD is not exhaustive of all diagnoses falling within CBDs, it does illustrate the range of negative individual, social and economic outcomes associated with the diagnosis (Fairchild et al., 2019). Furthermore, CD is a complex diagnosis that involves a confluence of socially determined factors, such as education attainment, psychological trauma and low socio-economic status (Sanders, 2000), thereby illustrating the need for integrated, multisector approaches to address CBDs (Asarnow et al., 2015; Campo et al., 2018; Diaz et al., 2021; Hemphill, 1996).

2.2 Cultural Considerations

Aboriginal concepts of health and wellbeing differ markedly from those of Western cultures. Western ideologies have remained the dominant discourse on psychological conditions with the power to discriminate between what are deemed to be ‘abnormal’ and ‘normal’ behaviours. Through colonisation, cultural belief systems have been systematically subjugated and replaced with the pathologisation of behaviour that does not meet Western norms, and the knowledge systems of White, middle-class, able-bodied, neurotypical, heterosexual men have been positioned as superior to all others (Dudgeon and Bray, 2024).

In recent times, the impact of colonisation has increasingly been recognised as a mechanism of inequitable health outcomes among Indigenous communities across the world. For Aboriginal communities, historical and intergenerational trauma plays a significant role in observed inequities (Gone, 2021). Such trauma has been caused by land appropriation, dispossession and systematic oppression. In particular, the forced separation of Aboriginal children from their families, communities and culture to assimilate them into Western culture marked a significant violation of human rights that shattered communities across generations (Wilkie, 1997). Furthermore, Western psychiatric practices have been considered harmful to Aboriginal people through their labelling of behaviours as abnormal without taking into account the negative impact of colonisation or different cultural norms (Dudgeon and Bray, 2024).

The Australian Psychological Society has challenged how services are delivered to Aboriginal communities, stating that cultural solutions, reclamation of knowledge systems, strengths-based approaches and self-determination are necessary (Sanson et al., 1997). A concept central to the knowledge systems of Aboriginal communities is that of socio-emotional wellbeing (SEWB), which is illustrated in Figure 2.1. SEWB describes the intricate connection between wellbeing and cultural practices, spiritual beliefs and connection to the land and sea (Dudgeon and Bray, 2024). The first modern definition of SEWB was ‘the social, emotional and cultural well-being of the whole Community in which each individual is able to achieve their full potential as a human being, thereby bringing about the total well-being of their Community. It is a whole-of-life view and includes the cyclical concept of life-death-life’ (National Aboriginal Health Strategy Working Party, 1989). SEWB represents a holistic and community-led strategy for building self-determination and healing from the ongoing impacts of colonisation (Dudgeon and Bray, 2024). These considerations are important when applying diagnoses such as CD to Aboriginal communities, as is discussed throughout this chapter.

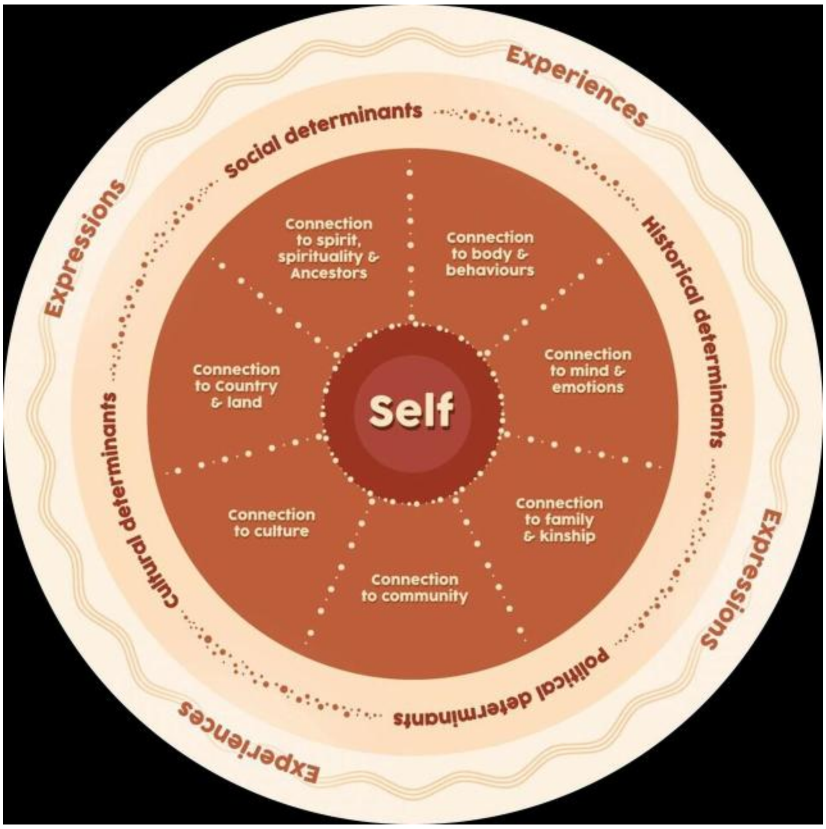
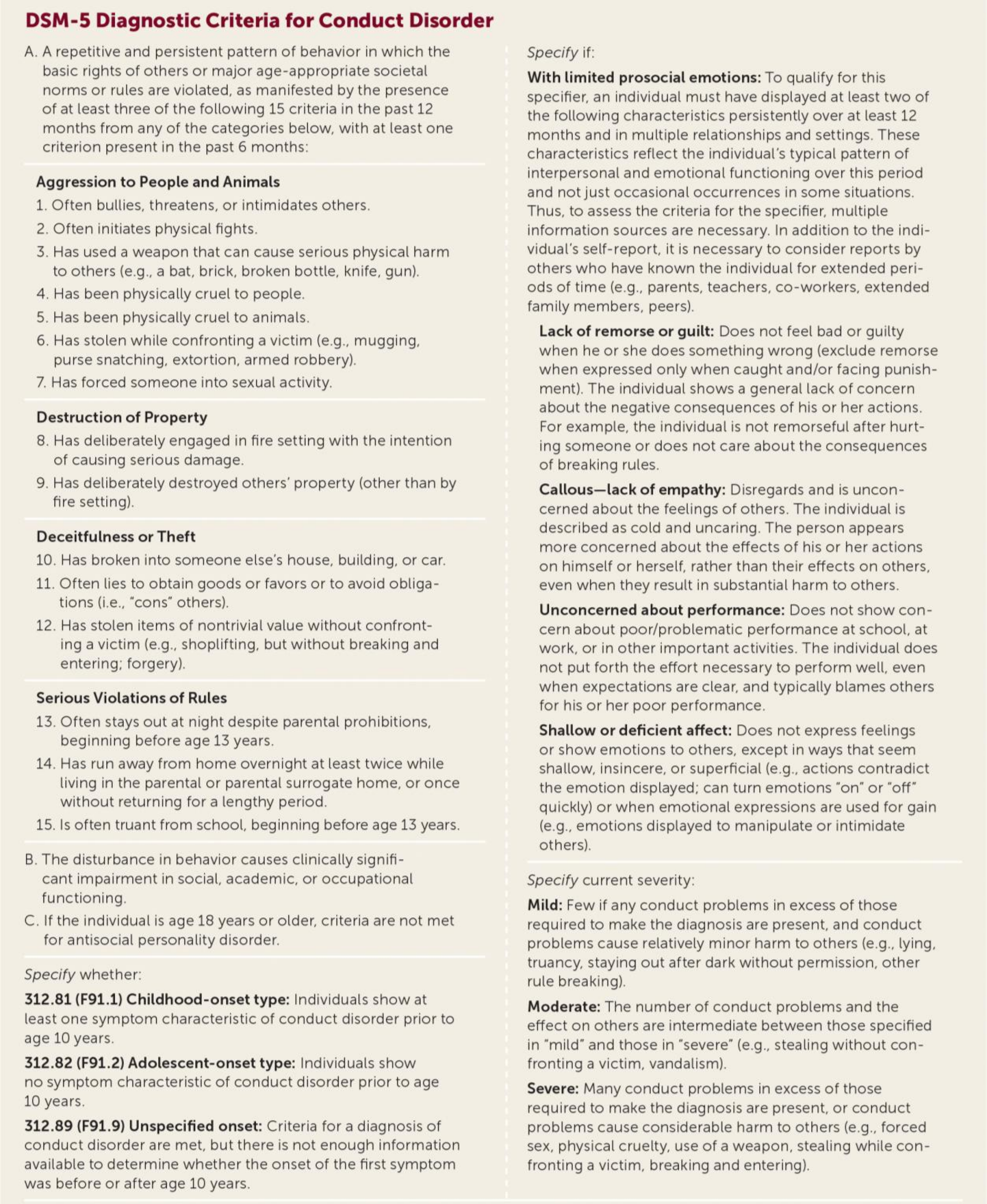


Figure 2.1: A Diagram Illustrating the Concept of SEWB (Dudgeon and Bray, 2024)

2.3 Definition of Conduct Disorder

CD is a term defined by Western psychiatric paradigms and is not a recognisable term within Aboriginal knowledge systems (Dudgeon and Bray, 2024). The most widely used definitions for CD are based on the descriptions set out in the *Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition* (DSM-5) and *International Classification of Diseases, Tenth Revision* (ICD-10). Although these manuals have undergone various revisions over time, as discussed in Section 5.3, they remain closely aligned (American Psychiatric Association, 2013; World Health Organization, 1992).

From a Western perspective, the term CD generally encompasses oppositional defiant disorder (ODD) and CD. ODD and CD are considered part of the same spectrum of disruptive behaviour, but only a small proportion of children with ODD go on to develop CD (Fairchild et al., 2019; Winther et al., 2014). ODD is a term used to describe younger children who exhibit persistently defiant behaviour, particularly to authority figures (Freitag et al., 2018a). CD describes older children who display persistent antisocial behaviours, such as aggression towards people or animals, destruction of property, deceitfulness or theft (Fairchild et al., 2019; Pilling et al., 2013; Winther et al., 2014). A major differentiating feature between CD and ODD is that CD often involves an infringement on the rights of other people (Winther et al., 2014). The DSM-5 criteria for CD includes having at least three out of 15 symptoms over a 12-month period, with at least one symptom present within the last six months (see Figure 2.2). The symptoms must cause clinically significant impairment in social, academic or occupational functioning (American Psychiatric Association, 2013; World Health Organization, 1992). In ICD-10, CD is presented as six subcategories (see Table 2.1) (World Health Organization, 1992).



DSM-5 Diagnostic Criteria for Conduct Disorder

A. A repetitive and persistent pattern of behavior in which the basic rights of others or major age-appropriate societal norms or rules are violated, as manifested by the presence of at least three of the following 15 criteria in the past 12 months from any of the categories below, with at least one criterion present in the past 6 months:

Aggression to People and Animals

1. Often bullies, threatens, or intimidates others.
2. Often initiates physical fights.
3. Has used a weapon that can cause serious physical harm to others (e.g., a bat, brick, broken bottle, knife, gun).
4. Has been physically cruel to people.
5. Has been physically cruel to animals.
6. Has stolen while confronting a victim (e.g., mugging, purse snatching, extortion, armed robbery).
7. Has forced someone into sexual activity.

Destruction of Property

8. Has deliberately engaged in fire setting with the intention of causing serious damage.
9. Has deliberately destroyed others' property (other than by fire setting).

Deceitfulness or Theft

10. Has broken into someone else's house, building, or car.
11. Often lies to obtain goods or favors or to avoid obligations (i.e., "cons" others).
12. Has stolen items of nontrivial value without confronting a victim (e.g., shoplifting, but without breaking and entering; forgery).

Serious Violations of Rules

13. Often stays out at night despite parental prohibitions, beginning before age 13 years.
14. Has run away from home overnight at least twice while living in the parental or parental surrogate home, or once without returning for a lengthy period.
15. Is often truant from school, beginning before age 13 years.

B. The disturbance in behavior causes clinically significant impairment in social, academic, or occupational functioning.

C. If the individual is age 18 years or older, criteria are not met for antisocial personality disorder.

Specify whether:

312.81 (F91.1) Childhood-onset type: Individuals show at least one symptom characteristic of conduct disorder prior to age 10 years.

312.82 (F91.2) Adolescent-onset type: Individuals show no symptom characteristic of conduct disorder prior to age 10 years.

312.89 (F91.9) Unspecified onset: Criteria for a diagnosis of conduct disorder are met, but there is not enough information available to determine whether the onset of the first symptom was before or after age 10 years.

Specify if:

With limited prosocial emotions: To qualify for this specifier, an individual must have displayed at least two of the following characteristics persistently over at least 12 months and in multiple relationships and settings. These characteristics reflect the individual's typical pattern of interpersonal and emotional functioning over this period and not just occasional occurrences in some situations. Thus, to assess the criteria for the specifier, multiple information sources are necessary. In addition to the individual's self-report, it is necessary to consider reports by others who have known the individual for extended periods of time (e.g., parents, teachers, co-workers, extended family members, peers).

Lack of remorse or guilt: Does not feel bad or guilty when he or she does something wrong (exclude remorse when expressed only when caught and/or facing punishment). The individual shows a general lack of concern about the negative consequences of his or her actions. For example, the individual is not remorseful after hurting someone or does not care about the consequences of breaking rules.

Callous—lack of empathy: Disregards and is unconcerned about the feelings of others. The individual is described as cold and uncaring. The person appears more concerned about the effects of his or her actions on himself or herself, rather than their effects on others, even when they result in substantial harm to others.

Unconcerned about performance: Does not show concern about poor/problematic performance at school, at work, or in other important activities. The individual does not put forth the effort necessary to perform well, even when expectations are clear, and typically blames others for his or her poor performance.

Shallow or deficient affect: Does not express feelings or show emotions to others, except in ways that seem shallow, insincere, or superficial (e.g., actions contradict the emotion displayed; can turn emotions "on" or "off" quickly) or when emotional expressions are used for gain (e.g., emotions displayed to manipulate or intimidate others).

Specify current severity:

Mild: Few if any conduct problems in excess of those required to make the diagnosis are present, and conduct problems cause relatively minor harm to others (e.g., lying, truancy, staying out after dark without permission, other rule breaking).

Moderate: The number of conduct problems and the effect on others are intermediate between those specified in "mild" and those in "severe" (e.g., stealing without confronting a victim, vandalism).

Severe: Many conduct problems in excess of those required to make the diagnosis are present, or conduct problems cause considerable harm to others (e.g., forced sex, physical cruelty, use of a weapon, stealing while confronting a victim, breaking and entering).

Figure 2.2: DSM-5 Criteria for Conduct Disorder (American Psychiatric Association, 2013)

Table 2.1: Subcategories of Conduct Disorder in ICD-10 (World Health Organization, 1992)

ICD-10 Code	Description
F91.0	Conduct disorder confined to the family context
F91.1	Unsocialized conduct disorder
F91.2	Socialized conduct disorder
F91.3	Oppositional defiant disorder
F91.8	Other conduct disorders
F91.9	Conduct disorder, unspecified

CD can be categorised into two main groups. The first group is ‘childhood-onset’, in which symptoms begin in childhood and can be childhood limited or life-course persistent. The second group is ‘adolescent-onset’, in which symptoms appear in adolescence and tend to be adolescence limited (Fairchild et al., 2019; Sanders, 2000). In the childhood-onset subtype, at least one criterion is present before the age of 10, whereas in the adolescence-onset subtype, there is an absence of any criteria prior to the age of 10 (American Psychiatric Association, 2013). The onset of symptoms affects the prevalence rates, natural history, risk factors and outcomes of the condition (Fairchild et al., 2019; Sanders, 2000).

The severity of CD can be classified as mild, moderate or severe depending on the number of symptoms present and the level of aggression displayed (Freitag et al., 2018a). CD can be further subtyped by the presence or absence of callous-unemotional (CU) traits (Fairchild et al., 2019). If left unmanaged, CD can present a developmental pathway to an antisocial personality disorder in adulthood (ASPD) (Fairchild et al., 2019).

2.4 Epidemiology

Estimating the global prevalence of CD can be challenging because of the limited data available, particularly for children and young people and people from low- to middle-income countries (Caldwell et al., 2021; Erskine et al., 2017). This has resulted in uncertainty when estimating the burden of disease in people under 25 years old (Erskine et al., 2017), which in turn reduces the visibility of mental health disorders in this group (Erskine et al., 2017; Fairchild et al., 2019). Nonetheless, the Global Burden of Disease Study 2010 estimated that the prevalence of CD in males was 3.6% and 1.5% in females (Erskine et al., 2017). There is some evidence of worldwide increases in the rates of CD in urban areas and in males (Fairchild et al., 2019; Pilling et al., 2013).

In Australia, the prevalence of CD is approximately 2%–3% with a decline from 2.7% in 1998 to 2.1% in 2013–2014 (Sawyer et al., 2018). There has been a persisting pattern in which the prevalence of CD is higher among children living in single-parent and low-income households (Sawyer et al., 2018). Among Aboriginal children, the data for prevalence rates of CD are limited and further confounded by the legitimacy of using Western paradigms to diagnose behaviours as mental health conditions in Indigenous communities (Kilian et al., 2019). Furthermore, many studies in this cohort are based on incarcerated adults and thus inadequately represent the Aboriginal community (Azzopardi et al., 2013; Black et al., 2015; Kilian et al., 2019). Additionally, Aboriginal children are underrepresented in most national datasets (Azzopardi et al., 2013), making it difficult to draw conclusions about the prevalence of mental health challenges and patterns of service use among Aboriginal young people (Lawrence et al., 2016). However, in the Western Australian Aboriginal Child Health Survey, which focused on children in a community-based setting, 31.4% of Aboriginal young people were at high risk of clinically significant CD compared with 13.1% of children who were not Aboriginal (Blair et al., 2005).

In Europe, CD is estimated to occur in 1%–3% of girls and 2%–5% of boys (Bartels et al., 2018). In a US national survey of children aged 3–17, 7.4% had CD (Ghandour et al., 2019), and earlier studies were suggestive of a prevalence between 5.9% and 9.5% (Moore et al., 2017). In US samples, there is a variation in the prevalence of life-course-persistent CD (1.9% in males and 0.5% in females) and adolescence-limited CD (5.1% in males and 4.6% in females) (Moore et al., 2017). In children diagnosed with CD, an estimated 25% of girls and 40% of boys will later meet the criteria for ASPD (Black et al., 2015).

Comorbidity is common with CD. Comorbid conditions include ADHD, depression and anxiety disorders (Erskine et al., 2017; Patel et al., 2007). A New Zealand (NZ) study showed that boys with CD were three times more likely to have an anxiety disorder and major depressive disorder, eight times more likely to be homeless, three times more likely to be dependent on alcohol and 25 times more likely to have attempted suicide by age 32 than boys without CD (Patel et al., 2007).

CD is often associated with mental illness, substance abuse, legal problems, criminality, unwanted teenage pregnancy, academic issues, leaving school without qualifications and occupational difficulties (Frick, 2006, 2012; Fairchild et al., 2019). A systematic review of 47 studies from 19 countries comprising 28,033 male and 4,754 female adolescents showed that 61.7% of male adolescents in custody had a diagnosis of CD compared with 59.0% of female adolescents (Beaudry et al., 2021). Locally, studies from Tasmania and Sydney showed that 91%–98% of those in in youth detention centres presented with CD (Bickel and Campbell, 2002; Dixon et al., 2004).

2.5 Costs Associated with Conduct Disorder

CD accounts for about 1% of all years lived with disability, which surpasses that of autism spectrum disorder and ADHD (Fairchild et al., 2019). The costs related to CD are far-reaching, spanning across the health sector to the wider society, and include the impact of criminality. This makes estimations of the true cost of the issue challenging (Bonin et al., 2011; Gilmore, L., 1999; Knapp and Wong, 2020, Beecham, 2014), particularly because there are few economic studies about child and adolescent psychiatric disorders compared with studies of adult disorders (Beecham, 2014; Knapp and Wong, 2020).

In the Dunedin Multidisciplinary Health and Development Study, it was shown that although children with life-course-persistent CD made up only 9% of the population studied, they accounted for 53.3% of all convictions, 15.7% of emergency department visits, 20.5% of prescription fills, 13.1% of injury claims and 24.7% of welfare benefit months. Fifty per cent of those with life-course-persistent CD accrued high service use across the domains of criminal justice, health and social welfare services, as compared with 11.3% of those without CD (OR = 7.27, 95% CI = 4.42–12.0). The authors concluded that a diagnosis of CD in childhood points to high future costs across multiple sectors (Rivenbark et al., 2018).

Estimates of the cost of services incurred by people with CD vary markedly, making comparisons and assessments of cost-effectiveness difficult. The National Institute for Health and Clinical Excellence guidelines suggest a total annual cost of between GBP6,000 (2002–2003 prices) and USD180,000 (2008 prices). The majority of these costs, between 19% and 64% of the total costs, have been attributed to the use of criminal justice services (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013). Difficulties associated with such calculations include uncertainties in quantifying intangible costs such as fear, pain, psychological trauma and grief suffered by victims of crime, and other indirect costs such as loss of productivity (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013). It has been estimated that about 20%–25% of people visiting mental health services do so as a result of being victims of crime, with an annual cost of between USD5.8 and USD6.8 billion (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013).

In the United States (US), one study estimated the cost to society of a high-risk adolescent because of criminal offending to be between USD1.7 million and USD2.3 million (Cohen, 1998), while another US study found that for children born into poverty, failing to provide early childhood care and education for two or more years incurs costs of approximately USD100,000 per child (Barnett, 1995). In the US, Foster et al. (2005) showed that the cost of CD on mental health, general health, education and juvenile justice systems exceeded USD70,000 over a seven-year period, while the costs of mental, emotional and behaviour problems in children were estimated to cost USD247 billion per annum (National Research Council et al., 2009).

In the United Kingdom (UK), costs to public services for children with CD were GBP70,000, compared with GBP7,000 for children without CD (Scott et al., 2001). Another UK-based study showed that the total support costs for children with CD were between GBP49 and GBP19,940 per annum with a mean of GBP5,960 (2002–2003 prices). Almost 80% of this cost was due to loss of productivity (Romeo et al., 2006). Clark et al. (2005) showed that children with more severe CD tended to live in specialist facilities for a period, which incurred a higher cost of around GBP52,000 per year (2000–2001 prices). About half this cost was accrued to social care services, a third to education and 5% each to the health and justice system (Clark et al., 2005). Costs were significantly higher for younger children, those living away from home, those demonstrating inappropriate sexual behaviour and those from a White ethnic background (Clark et al., 2005).

A pan-European study estimated the total costs associated with 5,932,112 children with ADHD, CD or autism spectrum disorder to be EUR21.3 billion per year (Gustavsson et al., 2011). Direct healthcare costs accounted for 12% of the total and direct non-medical costs accounted for 88% of the cost (Gustavsson et al., 2011).

CD can produce extensive costs across the health and non-health sectors. The associated high personal and societal costs make a strong case for increased investment in early intervention and treatment (Beecham, 2014; Gilmore, L., 1999; Knapp and Wong, 2020). A review of interventions for youth offenders was shown to generate savings of between USD1,900 and USD31,200 per adolescent, and the most effective interventions were early childhood home visiting programs for at risk mothers, early childhood education for low-income families and some youth development programs (Aos et al., 2004). Evidence-based parenting programs such as Incredible Years may save GBP16,450 per family over 25 years (Foster et al., 2007). School-based social and emotional learning programs to prevent CD demonstrate cost savings of GBP150,000 for severe problems and GBP75,000 for mild problems for each case prevented (Knapp et al., 2011).

In Australia, the need for prevention and early intervention for mental health issues has been raised. One report found that late intervention for children experiencing mental health concerns, when acute or statutory action is required, costs the government AUD15.2 billion each year (Teager et al., 2019). Many more good quality economic studies, including cost-effectiveness analyses, are required to allow informed decision-making about resource allocation for CD (Beecham, 2014; Knapp and Wong, 2020).

2.6 Clinical Features

The clinical features of mental health diagnoses such as CD are complex and evolve over time (Caspi et al., 2020). Using Western frames of knowledge, the clinical features of ODD or CD can be understood from a life-course perspective, which views behavioural changes as they follow a pathway synchronous with developmental stages. Typically, young children aged 3–7 with ODD or CD will present with symptoms that include general defiance or disobedience of adults' instructions, anger outbursts, temper tantrums, physical aggression to others, destruction of property, arguing, blaming others, and a tendency to annoy and provoke others (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013). In middle childhood (8–11 years), similar features preside, but additionally, as the child grows older and stronger, and spends more time outside the home, other behaviours are seen. These include swearing, lying, stealing, persistent breaking of rules, physical fights, bullying, cruelty to animals and setting fires (Fairchild et al., 2019; National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013; Sanders, 2000). In adolescence (12–17 years), more antisocial behaviours are observed. These include being cruel to others, hurting others, assault, robbery, vandalism, breaking and entering houses, stealing, absconding, truanting from school, and misusing alcohol and drugs (Fairchild et al., 2019; National

Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013; Sanders, 2000).

Most individuals with childhood-onset CD will not progress to the more severe forms of CD. The natural course of CD is to peak in middle adolescence and gradually desist. About half of those with childhood-onset CD continue to experience problematic behaviours in middle childhood. In those with middle childhood symptoms, about half display problematic behaviour in adolescence (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013). Childhood-limited CD is characterised by very severe symptoms during childhood that subside prior to adulthood. Symptoms are often then replaced by anxiety and/or depression (Sanders, 2000). Most children with CD will have an adolescence-onset form. This form tends to be less severe and often arises in the context of peer group pressure. These children have little or no history of earlier antisocial behaviour and generally follow a more positive trajectory (Fairchild et al., 2019). For those in the life-course-persistent group, there is an earlier onset of problematic behaviour that develops into more severe behavioural problems (Black et al., 2015; Junewicz and Billick, 2020; Sanders, 2000).

Risk factors for CD include male gender, low socio-economic status, recipient of harsh discipline, lack of maternal closeness, family instability, lower cognitive ability, impulsivity, low school achievement, antisocial peers who abuse substances, truancy and criminal activity (Boden et al., 2010; Murray and Farrington, 2010). Other risk factors include maternal smoking during pregnancy, exposure to physical or sexual abuse, domestic violence and parental substance abuse or criminal behaviour (Boden et al., 2010; Lillig, 2018; Murray and Farrington, 2010; Sanders, 2000).

Most studies about CD focus on male subjects, and there is some evidence of gender differences in the expression of CD (Lillig, 2018). Females with CD may be at a higher risk for internalising symptoms and post-traumatic stress disorder (Freitag et al., 2018b). Teenage pregnancies are more common in females with CD, as is an increased risk of their offspring developing CD (Pedersen and Mastekaasa, 2011). Other issues unique to females include increased difficulties integrating into working life, teenage prostitution, chronic mental and physical health problems, substance abuse and delinquency (Bardone et al., 1998).

Another important feature of CD is the presence of CU traits. CU traits are considered a precursor to psychopathy or an ASPD. CU traits include lack of empathy and/or a sense of guilt, shallow emotion, proactive aggression, and an insensitivity to punishment and emotionally distressing stimuli (Junewicz and Billick, 2020; Pisano et al., 2017). Those children with CD but without CU traits tend to exhibit aggression that is reactive in nature and tend to be hypersensitive to punishment and distressing stimuli. The presence of CU traits is predictive of worse outcomes in terms of antisocial behaviours, delinquency and recidivism. Early identification of CU traits presents an opportunity for early intervention and prevention (Junewicz and Billick, 2020).

Comorbidity with CD is common. Coexisting conditions may include language impairments, learning difficulties, ADHD, mood disorders, anxiety disorders and/or substance abuse problems (Winther et al., 2014). Those with CD often experience difficulties with interpersonal relationships and higher levels of peer rejection (Kazdin and De Los Reyes, 2007).

2.7 Aetiology

2.7.1 The Developmental Perspective

The aetiology of CD is multifactorial and stems from a complex interplay of inherited factors and the environment, and the developmental trajectory of childhood-onset and adolescent-onset subtypes differ (Pardini and Frick, 2013). The risk of developing CD is also closely linked to cognitive skills, social skills, parent characteristics and parenting techniques (Sanders, 2000).

In the childhood-onset form of CD, infants may be described as having ‘a difficult temperament’, which can progress to obstinance, temper tantrums and defiance in the toddler years. These behaviours often consolidate in the early school years with noncompliance at home, which then becomes generalised to other settings (Sanders, 2000).

The adolescent-onset subtype is more common in females and typically presents with less aggressive behaviours. The behavioural issues may be associated with familial stressors, such as divorce and unemployment; such disruption allows the young person an opportunity to associate with more deviant peer groups. This group tend to have a better prognosis because they have better social skills and interpersonal relationships (Eme, 2020; Sanders, 2000).

2.7.2 The Role of Cognition, Personality and Social Skills

Cognitive testing involves the use of standardised tools to measure various aspects of cognitive skills, such as memory, literacy, numeracy and problem-solving. Tools designed for these purposes are based on Western concepts of cognition, and very few culturally validated tools have been developed or adapted for these purposes (Dingwall et al., 2010). While it is important to recognise the limitations of cognitive assessments, there is evidence of a relationship between lower cognition and an increased risk of CD (Caspi et al., 2020), and low cognitive abilities are more predictive of developing life-course-persistent CD (Eme, 2020). Children with CD often display deficits in verbal skills as well as impairments in facial emotion recognition (FER) and empathy (Freitag et al., 2018b). Furthermore, there is evidence that cognitive function in these individuals continues to decline later into childhood and middle adulthood (Caspi et al., 2020).

Boys with CD tend to have problem-solving deficits and are more likely to respond to challenges in an aggressive manner. They often have distorted cognitions about interpersonal interactions and low self-esteem, and are more likely to see the outcomes of aggressive behaviour in a positive light. They are also less likely to perceive their behaviour as aggressive or angry in nature (Sanders, 2000).

Social maturity plays a role in CD. Children with CD often lack the skills necessary for effective integration with a non-deviant peer group. This makes them more likely to respond in an aggressive manner, which leads to rejection by peers. Those who are more socially competent may have their problematic behaviour viewed as amusing, which leads to peer acceptance. Peer rejection is predictive of ongoing social difficulties (Sanders, 2000).

CU traits are negatively associated with verbal intelligence, creativity, practicality and analytic thinking. Those with CU traits show abnormalities in the processing of punishment cues and in empathic responses (Pisano et al., 2017).

Individual protective factors for children include an easy temperament, sociability, average intelligence, school competency and high self-esteem. External supports such as peers, friends and adults are also protective (Sanders, 2000).

2.7.3 Adverse Childhood Experiences

The term adverse childhood experiences (ACEs) is used to describe various negative episodes that a child or young person is exposed to. Such experiences can include abuse and/or neglect as well as parental psychopathology, separation or incarceration (DeLisi et al., 2019). Long-term exposure to ACEs is linked to various behavioural and mental health disorders (Connolly and Kavish, 2019; Lackova Rebicova et al., 2019; Park et al., 2014).

Parental psychopathology is a known risk factor for CD. Fathers experiencing an ASPD, substance abuse issues or depression present a high risk to children. Mothers with an ASPD or depression are a risk factor for developing CD. The risk related to parental psychopathology is likely to be multifactorial and represent an interplay of genetics, modelling and more coercive parenting techniques (Ivanova, 2019).

Family characteristics such as household conflict, single-parent families or changes in marital status are risk factors for emerging CD. Changes in marital status can cause a 3–7 times increase in CD. Interparental conflict, and in particular, domestic violence, is a significant predictor of CD, with a higher risk in males than females (Eme, 2020).

Children experiencing abuse are more likely to display CD. In an NZ study, child sexual abuse predicted CD after controlling for other childhood adversities (Fergusson, D.M., McLeod, G.F. and Horwood, L.J., 2013). Repeated physical abuse is also associated with CD (Eme, 2020; Fergusson et al., 2013).

CU traits are influenced by parenting characteristics (Pisano et al., 2017). Mothers with antisocial traits are predictive of toddlers demonstrating CU behaviours (Hyde et al., 2016). It may be that children with CU traits produce a negative response from parents whereby parents then demonstrate less warmth towards the child (Muñoz et al., 2011). Mothers who exhibit more positively reinforcing behaviours can buffer the inherited risk for early CU behaviours (Pisano et al., 2017).

2.7.4 Neighbourhood Effects

CD and other externalising behaviours have been linked to neighbourhood characteristics. This is most likely related to increased concentrations of poverty and its association with transiency, crime and general neighbourhood disorder. Children growing up in such neighbourhoods often experience developmental challenges, form fewer community connections and have lower social capital (Jennings et al., 2018). Adverse neighbourhood characteristics may predict cognitive deficits and low school achievement, which may lead to problematic behaviour (Ainsworth, 2002). Protective factors include family cohesion and connection with the community (Caughy et al., 2008; Plybon and Kliewer, 2001; Riina et al., 2013).

Within Aboriginal communities, access to health and disability services is limited by geography, and those residing in regional, rural or remote areas of Australia are particularly affected (D’Aprano et al., 2024). Contributing factors include cultural concepts of disability that may lead to stigmatisation and a reluctance to seek such services, while systemic racism has led to mistrust in mainstream services (Gilroy et al., 2017). These factors have an impact on the quality, cultural responsiveness and timeliness of support for communities (D’Aprano et al., 2024).

2.8 Pathophysiology

2.8.1 Genetics

Although there is considerable variation in the heritability estimates of CD, most studies have found CD to be moderately heritable (Freitag et al., 2018b). One twin study found that maltreatment was associated with a 24% increase in the probability of CD among children with a high genetic risk, compared with a 2% increase among children at low genetic risk (Jaffee et al., 2003). Candidate genes include those of the dopaminergic and serotonergic system (Freitag et al., 2018b), including the monoamine oxidase-A gene, which is thought to interact with early life adversity or maltreatment (Byrd and Manuck, 2014). The heritability of CU traits is significant, ranging from 42% to 68%, and is thought to contribute to the stability of these traits over time (Frick et al., 2014).

2.8.2 Central and Peripheral Nervous Systems

The central and peripheral nervous systems mediate responses to stress. This includes the hypothalamic-pituitary-adrenal axis and sympathetic nervous system. Fear and threat activate the release of cortisol and norepinephrine and induce the ‘fight or flight’ response, leading to changes in heart rate, skin conductance and startle response (Junewicz and Billick, 2020).

The two main theories relating to the impaired stress response of children and adults with CD is that of ‘overarousal’ and ‘underarousal’ (van Goozen and Fairchild, 2008). Physiological overarousal or a more active fight or flight system has been associated with externalising and internalising problems that can lead to CD (Fanti, 2018). Physiological underarousal suggests that those with CD lack the appropriate arousal and emotional response to situations, including negative consequences (van Goozen and Fairchild, 2008), such that affected individuals seek stimulation to raise their arousal to optimal levels (Fanti, 2018).

2.8.3 Biomarkers

Many biomarkers have been associated with CD. These include decreased basal cortisol levels, increased testosterone levels, increased testosterone to cortisol reactivity ratio, reduced serotonin levels, reduced oxytocin levels, low resting heart rate and reduced skin conductance. Table 2.2 provides a summary of these biomarkers and their role in behaviour. In children, the clinical utility of such markers is ambiguous. This is mainly because research in children is less rigorous and more open to heterogeneity (Junewicz and Billick, 2020). Furthermore, environmental factors such as stress and diurnal rhythms interact with physiological markers, making clinical norms difficult to establish (Junewicz and Billick, 2020).

Table 2.2: Summary of Biomarkers and Role in Behaviour

Biomarker	Role of Biomarker	Reference
Low basal cortisol	Impaired fear reactivity in children and increased sensation-seeking in adults.	Glenn and Raine, 2014
	Influenced by many factors, e.g. hormones, age, environment.	Alink et al., 2008 Işık et al., 2018
Increased testosterone	Psychopathic traits, e.g. impulsivity, sensation-seeking and seeking dominance over others.	Glenn and Raine, 2014
Increased testosterone to cortisol reactivity ratio	Reduced amygdala response to fear and threat.	Glenn and Raine, 2014
Reduced serotonin and oxytocin levels	Associated with antisocial behaviour in adults, evidence less clear for young people.	Junewicz and Billick, 2020
	Lower serotonin metabolite (5-HIAA) levels associated with aggression.	Van Goozen et al., 1998
Low resting heart rate and reduced skin conductance	Associated with low levels of fear.	Fanti, 2018 Loeber et al., 2000

2.8.4 Neural Structure

There are similarities between the neural structure of young people with CD and adults with ASPD, providing evidence for a developmental pathway linking these groups. Both groups exhibit decreased size and functioning of the amygdala and prefrontal cortex and reduced connectivity of the default mode network (Junewicz and Billick, 2020). These findings are summarised in Table 2.3.

Studying neural structure and functioning in children is complex. Heterogeneous findings can be due to normal neurodevelopmental changes, which involve both increases and decreases in size and functioning depending on the developmental stage and maturational processes of the brain (Junewicz and Billick, 2020). This complexity makes the clinical utility of neural structural changes difficult to ascertain.

Table 2.3: Summary of Neural Structure and Role in Behaviour

Neural Structure	Role of Neural Structure	Reference
Amygdala	Smaller size and dysfunction associated with conduct disorder (CD).	McDonough-Caplan and Beauchaine, 2018 Junewicz and Billick, 2020 Noordermeer et al., 2016
Striatum	Lower dopamine activation in striatum associated with irritability and negative affective states. Leads to seeking of external rewards and thereby impulsive or disruptive behaviour.	McDonough-Caplan and Beauchaine, 2018 Junewicz and Billick, 2020
Prefrontal cortex	Smaller in CD and associated with dysregulated emotional responses and impulsive behaviour.	McDonough-Caplan and Beauchaine, 2018 Junewicz and Billick, 2020
Default mode network (coordinated activity between various cerebral areas)	Associated with moral judgement, theory of mind, emotion regulation, self-reflection and self-referential thinking. Impaired functioning in CD.	Glenn et al., 2013. Raine et al., 2003.

2.8.5 Facial Emotional Recognition

FER is associated with emotional processing and allows the detection of distinct facial muscle activity during exposure to different emotional stimuli (Fanti, 2018). Difficulties in FER are associated with a range of mental health and antisocial presentations in adolescents and adults.

A systematic review of children aged 12 and under suggested FER problems are present in ADHD, CD and CU presentations. FER deficits could be a relevant target of intervention for externalising behaviours (Cooper et al., 2020).

2.9 Screening and Surveillance

2.9.1 Screening

From a population perspective, there are many screening or surveillance tools in use to identify potential CD in children (Cooper et al., 2020; Pilling et al., 2013). The goal of screening is to improve the rate of early identification of behavioural difficulties so that specialist services and early intervention can be facilitated (Sim et al., 2019). Currently, there is limited evidence to suggest the optimal timing for monitoring or screening for behavioural issues (Cooper et al., 2020; Pilling et al., 2013).

Screening and diagnostic tools for CD are discussed in the following sections. However, in most circumstances these tools have been designed and validated within Western systems of knowledge under the assumption that everyone, including those from different cultural backgrounds, will be able to participate in these assessments equally. Therefore, the tools mentioned below need to be considered with care when extrapolating them to Aboriginal communities (Pattel, 2007).

2.9.2 Screening Tools

The most commonly used tools to screen for externalising behaviour are the Strengths and Difficulties Questionnaire (SDQ), Survey of Wellbeing of Young Children, and Ages and Stages Questionnaire: Social Emotional (ASQ:SE) (Maldonado et al., 2019).

2.9.2.1 Strengths and Difficulties Questionnaire

A review of preschool screening tools for language and behavioural difficulties in a community setting reported that the SDQ administered at age 4 achieved the best predictive validity compared with other behaviour screening tools (sensitivity 31%, specificity 93%, negative predictive value 84% and positive predictive value 52%) (Sim et al., 2019).

The SDQ is a short screening instrument (25 questions) for those aged between 3 and 17. It screens for emotional, behavioural and social functioning, and can be used serially. The instrument allows for a multi-informant assessment and can be completed by parents, teachers and children aged 11 to 17. A computerised algorithm predicts the risk of a disorder in the following five subscales: conduct problems, emotional problems, hyperactivity/inattention problems, peer relationships, and kind and helpful behaviour (Goodman, 1997). A further five questions assess the impact of the behaviour on the domains of home, life, friendship, classroom learning and leisure activities. An overall score and risk prediction is made for total difficulties and the impact of the behaviours (Goodman, 1997, 2001; Goodman et al., 1998, 2003).

The psychometric properties of the SDQ have been examined in various studies. Factor analysis shows that the five subscales correspond with the hypothesised domains of psychopathology and personal strengths (Goodman, 2001; Muris et al., 2003). The internal consistency and test-retest stability of the SDQ is satisfactory (Goodman, 2001). Correlations among parent, teacher and self-report SDQ scores are moderate and comparable with other psychopathology measures (Goodman, 1997, 2001; Goodman et al., 1998; Muris et al., 2003).

In terms of validity, SDQ scores correlate well with other indexes of psychopathology, such as the Rutter and Achenbach questionnaires (Goodman, 1997), and discriminate well between children with and without psychopathological symptoms in a community setting (Goodman, 1997, 2001; Goodman et al., 1998; Muris et al., 2003).

Among Aboriginal Australians, the SDQ, with modifications in the wording and the response scale, has high reliability and consistency (Dingwall and Cairney, 2010). The peer problems scale is the least reliable (0.60) (Blair et al., 2005; Dingwall and Cairney, 2010), mainly because this subscale does not appear to fit well with cultural concepts of the relative importance of different interpersonal relationships (Williamson et al., 2010). The SDQ has been used in multiple other settings where Aboriginal children and adolescents were represented in the samples and is generally considered to be an acceptable tool (Dray et al., 2016; Pilling et al., 2013; Priest et al., 2012; Williamson et al., 2010).

2.9.2.2 Survey of Wellbeing of Young Children

The Survey of Wellbeing of Young Children is a brief instrument used to screen for development, behaviour and family circumstances for children between 2 and 60 months of age (Sheldrick and Perrin, 2013; Whitesell et al., 2015). In validation studies, it compares favourably with the Ages and Stages Questionnaire (ASQ), the ASQ:SE, the Child Behaviour Checklist (CBCL) and the Modified Checklist for Autism in Toddlers (Whitesell et al., 2015).

2.9.2.3 Ages and Stages Questionnaire: Social Emotional

The ASQ:SE is a brief parent-report questionnaire designed to identify young children and infants (1–72 months) at risk of social and emotional problems. The ASQ:SE has been validated in clinical and non-clinical populations (Squires et al., 2002).

One important issue to consider when using the ASQ:SE, and possibly the other tools mentioned here, is that measures are based on parent reporting rather than objective data (Salomonsson and Sleed, 2010). Therefore, parental stress, particularly depression, can be associated with negative ratings of the child's behaviour (Salomonsson and Sleed, 2010).

2.10 Diagnosis

2.10.1 Multidisciplinary Diagnostic Assessment

CD is a complex mental health issue (Hawes et al., 2009; Mason, 2020) requiring a multidisciplinary approach to make a diagnosis and to identify comorbid disorders (Barry et al., 2013). The assessment generally consists of gathering information from a parent or carer while also allowing for a young person to be seen on their own.

The assessment for CD involves checking for core symptoms as described in DSM-5 or ICD-10, severity of symptoms, CU traits, comorbidities and potential causal factors (Mason, 2020). An understanding of the social context of a child's life, including parenting practices, is required. A family history of mental health, substance misuse and criminal behaviour is important to elucidate, and where appropriate, screening for domestic violence is conducted (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013). Further information regarding a child's behaviour and social circumstances is often gained through discussions with teachers or childcare educators (Sanders, 2000).

Approaches to the multidisciplinary assessment are varied. The interviews may follow a structured or non-structured format. A structured interview is based on eliciting specific diagnostic criteria. Non-structured interviews allow greater flexibility and can incorporate formats such as a HEEADSSS assessment (Smith and McGuinness, 2017) or a mental state examination. The assessment process can involve a single appointment or multiple appointments and requires a period of observation, particularly of the parent and child interacting (Fairchild et al., 2019).

After a thorough assessment has been completed, the presenting issues in the context of the child's developmental pathway are formulated (Mason, 2020; National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013; Pilling et al., 2013; Sanders, 2000). This then forms the basis of an individualised care plan that can be developed in partnership with the child and their parents (Fairchild et al., 2019).

In addition, when considering a diagnosis of CD in Aboriginal children and young people, it is necessary to reflect on power differentials and the cultural context. For instance, clinicians are in a dominant position in relation to the patient. Clinicians often use Western models for assessments, such as structuring their enquiry to determine whether the DSM-5 criteria are met. This means that how a clinician appropriates behaviour has significant power over whether or not a diagnosis is made. From a different perspective, the behaviour of the Aboriginal person may be seen as a demonstration of self-respect and resistance to colonisation. It is thus important for clinicians to reflect upon their own worldview as part of any diagnostic process (Vance et al., 2022).

2.10.2 Diagnostic Tools

2.10.2.1 Strengths and Difficulties Questionnaire

See Section 2.9.2.1.

2.10.2.2 Child Behaviour Checklist

The CBCL is a tool for children aged 4–16. The first part asks about the child's social, activity and school competencies, and the second part comprises a list of 100–118 specific behaviour problems, which covers a broad range of behaviours. In preschool children, the CBCL is completed by parents, whereas for school-aged children a parent and teacher version are available. Scores are then generated to indicate whether a child falls into the clinical range for the following categories: aggressive behaviour, anxious/depressed, attention problems, rule-breaking behaviour, somatic complaints, social problems, thought problems and withdrawn/depressed (Achenbach and Ruffle, 2000; Nolan et al., 1996). The CBCL has been validated and is applicable to an Australian setting; however, it may overestimate the prevalence of psychiatric disorders (Achenbach and Ruffle, 2000; Nolan et al., 1996).

2.10.2.3 Conners' Rating Scales–Revised

The Conners' Rating Scales–Revised (CRS–R) are often used to assess for ADHD, which can coexist with CD. Parent and teacher versions are available (Conners et al., 1998, Helton et al., 2006). A systematic review of the CRS–R showed that it had moderate sensitivity and specificity in diagnosing ADHD (Chang et al., 2016). The CRS–R has undergone revisions, and *Conners 4th Edition* was recently launched. Yet most of the published literature refers to *Conners 3rd Edition*, which is a validated tool for diagnosing ADHD and ODD or CD (Gallant, 2007; Gomez et al., 2021). The psychometric properties of *Conners 3rd Edition* indicate a reliable and replicable factor structure, strong construct correlations between the scales and sensitivity to diagnostic group differences (Gallant, 2007). The Conners 4 Parent, Teacher, and Self-Report scale is reported to have excellent reliability and validity measures as well (Conners, 2024).

2.10.2.4 Assessment of Callous-unemotional Traits

The presence of CU traits is important to identify because of its association with more severe symptoms and psychopathy (Fairchild et al., 2019; Freitag et al., 2018b). The Psychopathy Checklist Youth Version or the Youth Psychopathic Traits Inventory can be used to assess for a grandiose and manipulative interpersonal style, a callous and unemotional affective style, and impulsive and irresponsible behaviour (Junewicz and Billick, 2020).

2.10.2.5 Culturally Validated Tools

A small number of culturally appropriate, evidenced-based assessment tools are available for use among Aboriginal children with CD (Dingwall and Cairney, 2010; Edwige and Gray, 2021). One example is the Westerman Aboriginal Symptom Checklist Youth, which identifies youth at risk of depression, suicidal behaviours, drug and alcohol misuse, impulsivity and anxiety, and considers cultural resilience a moderator of risk (Little, Jonathon, 2007; Westerman, 2003).

2.10.3 Differential Diagnosis

The differential diagnosis of CD includes ADHD, manic-depressive disorder, adjustment disorder or organic disease, such as seizures (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013; Sanders, 2000).

2.10.4 Diagnostic Criteria

Diagnosing mental health disorders is a complex process requiring a holistic understanding of an individual over their lifetime. Diagnostic manuals are useful but also have limitations, including cross-cultural applicability, as discussed in Section 5.3 (Clark et al., 2017). However, the ICD-10 and DSM-5 set out criteria that are often used for diagnosing CD (see Figure 2.2; American Psychiatric Association, 2013). A diagnosis of CD is based on an enduring pattern of problematic behaviour, such as excessive fighting or bullying, cruelty to animals or other people, and destruction of property (American Psychiatric Association, 2013; World Health Organization, 1992).

Drawing the line between ODD and CD can be somewhat arbitrary and requires taking into account the child’s developmental age (Clark et al., 2017; Moffitt et al., 2008). For all children, the expression of any particular behaviour varies with age. For example, hitting behaviours peak at around 2 years of age and then decline in subsequent years (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013). Distinguishing between ODD and CD is generally based on meeting specific criteria at a point in time. For example, a child reacting to a negative experience may meet the diagnostic criteria for CD, but over time, the child may no longer meet these criteria (Clark et al., 2017). It is thus important to review the diagnosis periodically and to assess a child’s behaviour in the context of their life experiences (Edwige and Gray, 2021; Moffitt et al., 2008).

2.11 Management

The management of CD can involve a tiered approach. From a population perspective, preventive strategies have been described in the literature. For those with a diagnosis of CD, management consists predominantly of psychological-based therapies, including individual therapy and/or family therapy. Multimodal forms of therapy, in which a suite of interventions are available and tailored to individuals, have also been used (Norberg, 2010). These approaches are discussed in this section.

Within Australia, there are no specific guidelines for the treatment of CD; nor are there guidelines for the management of CD in Aboriginal children. For Aboriginal children with CD, modified cognitive-behavioural therapy has been validated (Bennett and Babbage, 2014; Bennett-Levy et al., 2014), but the direct acceptability or impact of child-focused interventions in this group has not been evaluated (Kilian et al., 2019). Further progress is required to understand how CD can be managed in a culturally safe way.

2.11.1 Prevention

Universal strategies for prevention are aimed at the general population, in which the overall population risk is low, for example, using the ASQ:SE at scheduled child developmental checks. There is substantial overlap between selective and indicated prevention. Selective prevention is aimed at individuals who are at high risk of developing a behavioural disorder or are showing early signs or symptoms. Indicated prevention is aimed at specific groups for whom early symptoms, but not the full disorder, have been identified. The interventions for both these groups tend to focus on reducing risk and strengthening resilience. The associated risk is often multifactorial and related to ACEs, including poverty, unemployment, substandard housing, parental mental health problems and marital conflict (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013).

The effectiveness of various preventive programs has been extensively reviewed. Most of these programs tend to produce small to moderate short-term (1 to 3 years) effects on reducing antisocial behaviour, but 20%–30% of children do not show any symptomatic improvement (Brennan and Shaw, 2015; Kazdin, 2018). In many cases, programs are not adequately resourced to evaluate long-term effectiveness (Eme, 2020) and are too heterogeneous for comparisons to be made (Brennan and Shaw, 2015; Durlak, 2009; Fergusson et al., 2005).

An example of a selective prevention program is the FAST Track Program, which was based in the US (Conduct Problems Prevention Research Group, 1992). This was a randomised controlled study of 979 children at high risk for CD. The intervention included psychosocial support and skill training for parents and children, intensive reading tuition in first grade, behavioural management consultation with teachers, and the provision of homework support as needed. Overall, the intervention reduced externalising, internalising or substance use disorder in the intervention group by 10% (small effect size $d = 0.15$). There was a more notable reduction of 31% in the severity-weighted violent crime conviction index in two of the three cohorts studied (Dodge et al., 2015; Zych and Farrington, 2018).

2.11.2 Early Intervention

Early intervention for children with CD offers an opportunity to positively change the trajectory of affected individuals. The complex nature of behavioural issues often means that such interventions may need to be repeated at various times during a life course (Gilmore, 1999).

2.11.2.1 Individual Interventions

Individual therapy aims to improve a child's emotional regulation, social skills and problem-solving skills (Gorman et al., 2015; Lillig, 2018; Sanders, 2000). Problem-solving skills training is an example of this treatment modality, and many other cognitive-behavioural models are also in use (Kazdin, 2018).

2.11.2.2 Classroom-based Interventions

Classroom-based interventions are usually delivered at schools considered to have risk factors for the development of CD, for example, low socio-economic status, low school achievement and parental mental health or drug problems (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013). These programs are often developed for children aged between 3 and 7, and aim to increase a child's emotional awareness and self-regulation as well as promote a positive self-concept, good peer relations and problem-solving skills (National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013).

Classroom-based interventions often involve strategies that teachers can use to prevent or manage problematic behaviour, such as effective monitoring, management of transitions, reinforcing positive behaviours, ignoring minor misbehaviour and fair consequences for serious misbehaviour (Sanders, 2000).

A systematic review and network meta-analysis investigating whether school-based interventions were effective in preventing anxiety, depression and CD in children and young people showed that most school-based interventions using components of psychoeducation or cognitive-behavioural therapy may be effective in preventing symptoms in these groups. The studies were heterogeneous and the cost-effectiveness of such programs was not evaluated (Caldwell et al., 2021).

2.11.2.3 Parent-focused Interventions

Most parent-focused programs focus on parenting techniques (Winther et al., 2014). Others involve a more systematic approach and can include individual and/or family therapy (Conduct Problems Prevention Research Group, 1992; Webster-Stratton et al., 2008). Parent-focused interventions based on cognitive and behavioural principles, for example, the Triple P (Positive Parenting Program) or Incredible Years programs, have been shown to reduce antisocial behaviour in younger children (Sanders, 2000). The strongest evidence for Triple P is for those in the early adolescent period who are displaying oppositional behaviour. Large and sustained effect sizes are seen in this group, particularly in reducing prenatal depression and stress, decreasing marital conflict, and increasing parenting efficacy and sense of capacity (Sanders et al., 2000). The cost-effectiveness of Triple P versus no intervention has been evaluated. When delivered in a group setting, the incremental cost-effectiveness ratio was $1,013 per disability-adjusted life year averted, and in an individual format the ratio was $20,498 per disability-adjusted life year averted (Sampaio et al., 2018). In 2022, a suite of online Triple P programs became available across Australia after a competitive government grant was won (Triple P Positive Parenting Program, 2024).

2.11.2.4 Multimodal Therapy

Multimodal therapy involves the use of various forms of therapy that are individualised for a child and their family (Norberg, 2010). An example of multimodal therapy is Functional Family Therapy (FFT). FFT involves improving relationships within the family unit by establishing clear communication between family members, helping to solve interpersonal problems, and identifying behavioural goals (Kazdin, 2001). FFT has been shown to improve communication and relationships within the family, and result in less contact between young people and police (Kazdin, 2001).

Multisystemic therapy (MST) is another example of multimodal therapy. MST involves a thorough assessment of the young person in the context of their family and social circumstances and then individualising interventions based on the needs of the child and their family. MST will often address issues pertinent to the wellbeing of the parents and improving the relationships within the family. This may include issues related to drug or alcohol abuse, mental health concerns, domestic violence and issues with accessing welfare benefits or adequate housing (National Collaborating Centre for Mental Health [UK], Social Care Institute for

Excellence [UK], 2013). The intervention period is around 3–5 months, during which the MST team have almost daily contact with the family (Frick, 1998). The effectiveness of MST was evaluated in the START (Systemic Therapy for At Risk Teens) study. This was a large UK-based multicentre, randomised controlled trial assessing the effectiveness and economic benefits of MST versus the usual management of adolescent antisocial behaviour. At 18 months, there was a reduction in overall offending but otherwise no difference in outcomes. At 48 months, no significant differences were found in self-reported outcomes, such as behavioural adjustment, psychosocial or family functioning, and quality of life. The five-year follow-up showed no significant difference in out-of-home placements. The authors commented on the intuitive value of MST and the difficulties encountered when obtaining follow-up data in the cohort (Conroy et al., 2023; Fonagy et al., 2013, 2018).

Within NSW, MST was implemented as part of a whole-of-government reform called Their Futures Matter. The aim of this policy was to improve outcomes for vulnerable children, young people and their families. MST for Child Abuse and Neglect and FFT–Child Welfare were implemented as part of this policy as a mechanism for improving family preservation and restoration outcomes (Economidis, 2023). A broader evaluation of these programs showed that while they may reduce rates of child abuse and neglect, the methodological limitations of published studies caused their effectiveness to be unclear (Economidis, 2023). An NSW review found that uptake of the programs was low: 20% of families withdrew prior to completion of the program. Some of the key enablers to implementing the programs were their therapeutic and strengths-based approaches. Key barriers included issues related to the referral and adaptation process, staff recruitment and retainment, and data collection. The authors recommended including cultural factors when implementing the programs as well as ongoing monitoring of the outcomes and costs (Economidis, 2023; Audit Office of New South Wales, 2020).

2.11.2.5 Community Interventions

The characteristics of a community can play a role in a child developing CD. There is a strong association between the social determinants of community disadvantage such as poverty, social exclusion and racism, and youth violence (Warner et al., 2010). This association may be partly due to a child being exposed to violence (De Coster et al., 2006), a paucity of positive relationships among residents and an acceptance of violence as being unavoidable (David-Ferdon and Hammond, 2008).

Community interventions are generally implemented by building partnerships and establishing trust. Some examples include training residents on how to intervene when they observe inappropriate behaviour, fostering the development of social capital (Warner et al., 2010), parent-focused interventions, nurse-led home visiting programs and self-regulation programs (Piquero et al., 2009, 2016). A systematic review of community coalitions, meaning connections across health and social care sectors, showed beneficial effects particularly for racial minority groups. However, information about the specific characteristics of such interventions was limited, making generalisation challenging (Anderson et al., 2015).

2.11.2.6 Psychopharmacology

Psychopharmacology plays a role in the more severe forms of CD and is used alongside the other therapy modalities described above (Lillig, 2018; National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013; Sanders, 2000). When medication is used, the aim is to target specific symptoms such as hyperactivity, impulsivity and aggression. For example, risperidone is licensed for the short-term symptomatic treatment (up to 6 weeks) of persistent aggression in CD in children from the age of 5 years (Lillig, 2018). When there is coexisting ADHD, stimulant therapy, such as methylphenidate or amphetamines, is often used. Alternatives include atomoxetine, guanfacine and clonidine (Gorman et al., 2015). For those with coexisting depression and/or anxiety, selective serotonin reuptake inhibitor or other similar medications may be used (Gorman et al., 2015; Sanders, 2000).

2.11.2.7 Treatment of Callous-unemotional Traits

No definitive psychological or pharmacological treatment is available for children with elevated CU traits (Wilkinson et al., 2016). However, some promising treatment modalities are available. These are summarised in Table 2.4. For those with CU traits, methylphenidate and risperidone have the largest effects on aggression (Balia et al., 2018). There is some low-quality evidence to support a small effect of mood stabilisers and other agents, but use of these needs to be weighed against the adverse effects associated with these medications.

Table 2.4: Summary of Treatments for Children with Conduct Disorder and High Callous and Unemotional Traits

Name	Age Range (Years)	Treatment Target	Treatment Description	Length of Treatment	Directed towards	Main References	Evidence
Emotional Recognition Therapy (ERT)	6–16	Improve emotion recognition and interpretation. Improve empathic abilities.	Mind Reading program to interpret emotions.	4 sessions (90 min each)	Children	Dadds et al., 2012	RCT with *N* = 195 6 months after treatment: ERT produced significant improvements in affective empathy and CD.
Mental Models	Adolescents	Increase positive emotion and reduce negative affect. Improvement of decision-making skills.	Combination of motivational techniques, cognitive behaviour training, and instruction on positive emotion, 12 didactic sessions. Education on brain development.	12 weekly sessions	Children	Salekin et al., 2012	24 youths in secure residential facility. Short-term results show increased positive emotion, reduction in CU traits, improved amenability to treatment.

Name	Age Range (Years)	Treatment Target	Treatment Description	Length of Treatment	Directed towards	Main References	Evidence
Coping Power (CP) Program	7–14	Improvement of emotion recognition. Increase child’s ability to cope with anger. Enhancement of perspective taking ability and problem-solving skills. Improvement of parenting skills.	Contextual social–cognitive model.	12 months 36 group sessions 16 parent sessions Small group parenting sessions	Children and parents	Muratori et al., 2017	*N* = 110 Randomised to 3 treatment groups for 12 months. CP program more effective in reducing aggressive behaviours. Decrease CU traits and lower rate of referrals to mental health at 1-year follow-up.

Abbreviations: CARES = coaching and rewarding emotional skills, CP = coping power, ERT = emotion recognition training, RCT = randomised control trial

2.12 Summary

CD is an example of a significant behavioural problem emerging in childhood. Globally, CD is one of the leading causes of disability in young people (Fairchild et al., 2019). Children with CD experience a broad range of negative outcomes that continue into adulthood. These outcomes range from lower educational attainment and poorer health outcomes to criminal behaviour and suicidality (Frick, 1998; Gorman et al., 2015). Therefore, the individual and societal costs of CD are chronic, high and widespread, involving multiple sectors, including the health, education, social welfare and criminal justice sectors (Fairchild et al., 2019). Australian Aboriginal communities are disproportionately affected by such diagnoses, which are deeply rooted in the historical and generational trauma caused by colonisation (Edwige and Gray, 2021; Kilian et al., 2019). These concepts are further explored in Chapter 5.

For multiple reasons, CD is described as a complex mental health disorder. It is a heterogeneous and multifactor disorder with many known and unknown risk factors. Comorbidity is common and gender differences in clinical manifestations also exist. This makes comparative studies regarding effective treatment modalities difficult to analyse. While there is evidence for preventive models and early childhood interventions, much less is known about effective treatment in adolescence (Freitag et al., 2018a). In addition, diagnostic assessments and treatment modalities are based on Western discourses, which are inappropriate for use among Aboriginal children and young people. Furthermore, those children at highest risk of CD or with the most severe symptoms are often the hardest group to engage with for intervention and research (Freitag et al., 2018a).

The substantial future costs associated with CD manifest a sense of urgency for novel approaches to its prevention and management (Czeisler et al., 2020; Daniel, 2020; Fairchild et al., 2019). In recent times, there has been growing recognition of the knowledge systems of Indigenous people as crucial in managing health and wellbeing. The complexity of CD necessitates a thorough multidisciplinary management approach through which a holistic and culturally appropriate understanding of the child and family is respectfully sought. This requires a systematic approach across sectors, including the health, education and social sectors, as well as cooperation by the family and co-design with the Aboriginal community (Norberg, 2010). This type of holistic approach requires redirecting resources through integrated partnerships and endorsement through policy—concepts that are explored further in the following chapters.

Chapter 3 Literature Review of Partnerships between Health and Education

3.1 Introduction

Effective collaboration between the health and education sectors are an integral means for ensuring equitable health, education and social outcomes (World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021). Globally, the physical and mental health of children and young people are a priority, and novel and innovative ways to deliver health initiatives are needed (Strong et al., 2021). Schools play an important role in such innovation by reorientating how health services are delivered.

Schools represent a place of safety and convenience for families. Almost all children attend primary school and have continuous enrolment into secondary school thereafter (World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021). Therefore, most children spend a substantial amount of time at school (Ali et al., 2019; Larson et al., 2017; Lemkin et al., 2019). Additionally, schools are permanent physical institutions with a structure that enables new programs to be sustained. Schools have access to human resources who can provide care and support activities while holding an understanding and a relationship with local communities (Argall and Allemano, 2012). Furthermore, among the Aboriginal community of Australia as well as other First Nations communities, co-location and cooperation across sectors to understand the 'whole-of-child' are valued (Brendtro et al., 2014; Mental Health Commission of NSW, 2020; Shultz et al., 2018; Tagalik, 2010).

The previous chapter of this thesis discussed CD as an example of a CBD. In this chapter, the importance of partnerships between the health and education sector is reviewed from a social determinants perspective. Thereafter, the role of integrating care across these sectors is examined alongside the evidence for such programs (Beem et al., 2019; Centers for Disease Control and Prevention, 2014; Diaz et al., 2021). In particular, models from southern Africa and the US are described to show how SBHC models have been implemented in different settings (Argall and Allemano, 2012; Centers for Disease Control and Prevention, 2014). This knowledge leads into a discussion about how cultural concepts important to the Aboriginal community were used to inform the co-design of the NS model.

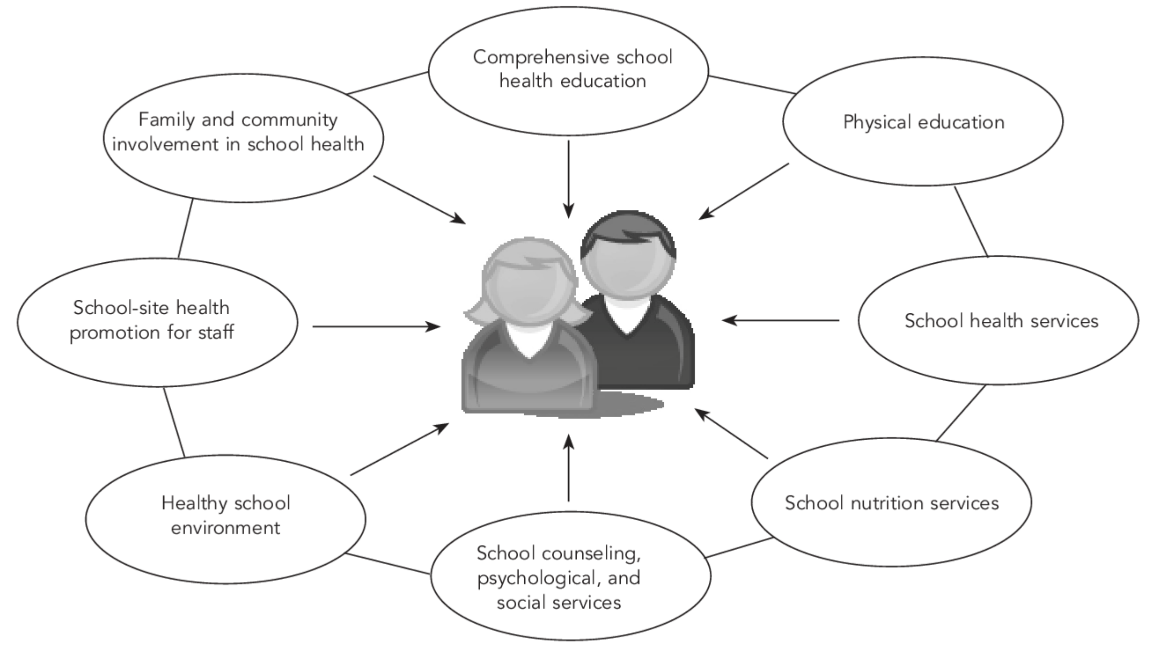
3.2 The Social Determinants Perspective

The WHO defines health as a ‘state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity’ (World Health Organization, 1948, p. 1). This definition acknowledges the importance of the holistic needs of individuals to their overall sense of health and wellbeing. In addition, children are recognised as having special rights as stated in the UN Convention on the Rights of the Child (1959), where it is declared that every child has the right to the best health care possible and the right to an education (United Nations, 1989). The rights of Indigenous children to exercise their cultural beliefs and the importance of this for individual and community development, identity and resilience are further highlighted in the convention (United Nations, 1989).

3.2.1 Social Determinants Frameworks

Health and education outcomes are closely related. Frameworks that describe the social determinants of wellbeing provide insights into why this is the case. Social determinants models describe how multiple social factors influence health and wellbeing (Dunfee, 2020; Larson et al., 2017; Lewallen et al., 2015; Marmot et al., 2008). Some of the major determinants of health are education, health care, employment opportunities, living conditions and food accessibility (Eastwood and Miller, 2021; Lewallen et al., 2015; Marmot et al., 2008). These factors are shaped by government policies and economic forces, effects that can influence health across generations (Marmot et al., 2008; World Health Organization, 2011). In addition, for children, social factors such as family, school and cultural values influence health and wellbeing (Bronfenbrenner, 1992).

An example of a social determinants model is the coordinated school health program (CSHP). This provided the foundations for SBHC programs in the US (Allensworth and Kolbe, 1987). The CSHP evolved from earlier models in which a ‘three-legged stool’ consisting of health education, health services and a healthy school environment was described (Allensworth and Kolbe, 1987). In the CSHP model, additional components, such as food and nutrition services, health promotion for staff, physical education, counselling, psychological and social services, family and community involvement, were included (Allensworth and Kolbe, 1987; Lohrmann, 2008). Figure 3.1 depicts this framework (Lohrmann, 2008).



[a]Adapted from Centers for Disease Control and Prevention (US). Healthy youth! Coordinated school health program [cited 2007 Jul 30]. Available from: URL: http://www.cdc.gov/HealthyYouth/CSHP

Figure 3.1: Coordinated School Health Program (Lohrmann, 2008)

The CSHP model was adopted and recommended by the Centers for Disease Control and Prevention in the US (Division of Adolescent and School Health., 1992; National Association of State Boards of Education, 1992). The WHO adopted a version of this model in the 1990s as part of its health promoting schools initiative (World Health Organization, 1997). Lohrmann later adapted the CSHP model to incorporate public health and child development theories and called it an ecological model of the coordinated school health program. This model is represented by an inner circle of six program and service components surrounded by four rings (see Figure 3.2). The four rings represent the healthy school environment, essential structures of CSHP, local school governance, and family and community involvement (Lohrmann, 2008). The model provides a conceptual approach to school and health partnerships along with a framework for evaluation (Lohrmann, 2008).

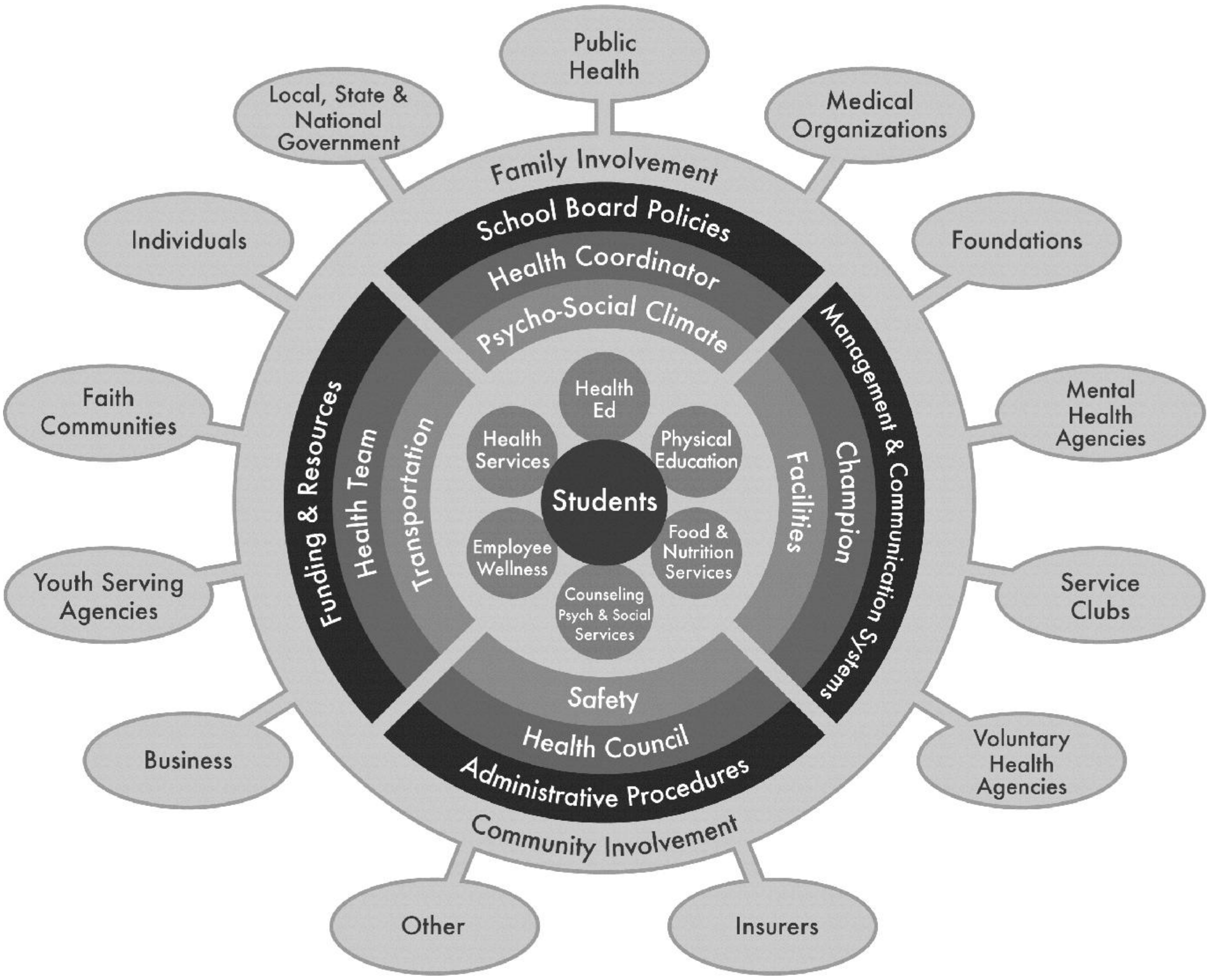


Figure 3.2: Coordinated School Health Program Ecological Model (Lohrmann, 2008)

3.3 The Relationship between Health and Education Outcomes

A social determinants approach articulates the interplay between health and education outcomes (Blank, 2015; Lewallen et al., 2015; Minier et al., 2018; Patton et al., 2016). More specific examples are drawn upon in this section.

Educational attainment has an impact on health-related behaviours across the life course. Globally, those who are more educated live longer and with better health (Lewallen et al., 2015; Patton et al., 2016). In low- and middle-income countries, higher education levels are associated with reduced teenage births as well as older age at marriage (Gakidou et al., 2010). Education also has an intergenerational effect: improved education for women accounts for significant improvements in child mortality (Gakidou et al., 2010).

Higher education levels are associated with lower rates of risky behaviours and higher rates of healthy behaviours in adulthood (Champaloux and Young, 2015; Minier et al., 2018).

Graduating from high school is associated with lower rates of health problems, reduced risk for incarceration and increased financial stability (Freudenberg and Ruglis, 2007; Sum et al., 2009). A safe and healthy school environment is associated with positive student engagement as well as protection against risky behaviours and being an early school leaver (Aveyard et al., 2004; Bradley and Greene, 2013).

Educational attainment is a predictor of employment, and a bidirectional relationship exists between employment and mental health (Baggio et al., 2015; Modini et al., 2016). Young people with mental health problems are more vulnerable to unemployment, and unemployment is a risk factor for mental health concerns (Baggio et al., 2015). Within Australia, about one-third of young people accessing youth mental health services report non-participation in the workforce (Hilferty et al., 2015). The consequences of non-participation include ongoing marginalisation through economic and social exclusion (Holloway et al., 2018).

Poor health is associated with an increased risk of educational inequity (Lemkin et al., 2019; Minier et al., 2018). For example, chronic health issues can lead to frequent absences from school and reduced levels of academic, physical and social functioning (Allensworth and Kolbe, 1987; Blank, 2015; Centers for Disease Control and Prevention, 2014; Lewallen et al., 2015). Children who are chronically absent are more likely to leave school without obtaining secondary school qualifications (Champaloux and Young, 2015). In addition, children that are frequently absent in the first years of schooling are less likely to read at the same level as their peers and are at increased risk of leaving school without any qualifications (Stempel et al., 2017).

Furthermore, children and adolescents living in low socio-economic households or belonging to minority racial groups, are at the most risk of experiencing socially determined inequities (Larson et al., 2017; Turner et al., 2010). These children often experience chronic psychological trauma, such as abuse, neglect and family violence, which places them at increased risk of developing behavioural or mental health disorders that can lead to poor school attendance and low academic achievement (Larson et al., 2017; Turner et al., 2010).

Within Australia, Aboriginal children experience inequitable health and educational outcomes (Doyle and Hill, 2008; Edwige and Gray, 2021; Salmon et al., 2018; Shultz et al., 2018). Aboriginal students demonstrate lower preschool and school attendance, retention and achievement than non-Aboriginal students across all age groups (Australian Institute of Health and Welfare, 2023a). Post-school qualifications, labour force participation and employment rates are lower in Aboriginal students, and these factors are associated with ongoing disparities in socio-economic, health and wellbeing status (Australian Institute of Health and Welfare, 2023b; Doyle and Hill, 2008; Mellor and Corrigan, 2004; Ministerial Council for Education, Employment, Training and Youth Affairs, 2009).

3.4 Integrating Care across Sectors

Integrated care can be defined as ‘health services that are managed and delivered so that people receive a continuum of health promotion, disease prevention, diagnosis, treatment, disease-management, rehabilitation and palliative care services, coordinated across the different levels and sites of care within and beyond the health sector, and according to their needs throughout the life course’ (World Health Organization, 2016, p. 2). More simply, integrated care can be seen as the bringing together of the fragmented parts of a health system to optimise care across the life span (Goodwin, 2016; Heath et al., 2013; Waddington and Egger, 2008). Given the strong association between health and education outcomes, an integrated approach across these sectors is considered a mechanism for improving outcomes for young people while providing greater job satisfaction for employees and resulting in more efficient use of existing resources (Ali et al., 2019; Chiang et al., 2015; Cleveland et al., 2020; Diaz et al., 2021; Eastwood and Miller, 2021; Newman et al., 2022). Use of the NS model of care, through cross-sector collaboration and multidisciplinary assessment, means that students do not have to repeat their stories to multiple professionals, which is a mechanism of trauma-informed care. It also supports students and families in navigating complex systems, thereby improving access to care.

The principles of integrated health care were first described in the Alma Ata Declaration on Primary Health Care in 1978, which called for local integration of services, and stronger community and interagency engagement (World Health Organization, 1986). In 2016 the framework for IPCHS was produced (see Figure 3.3) (World Health Organization, 2016). This framework emphasised a people-centred approach through which the perspectives of individuals, families and communities are listened to and acted upon (World Health Organization, 2016). The overarching goal of this approach was to provide ‘universal, equitable, people-centred and integrated health services’ by addressing five interdependent strategies (see Table 3.1) (World Health Organization, 2016).

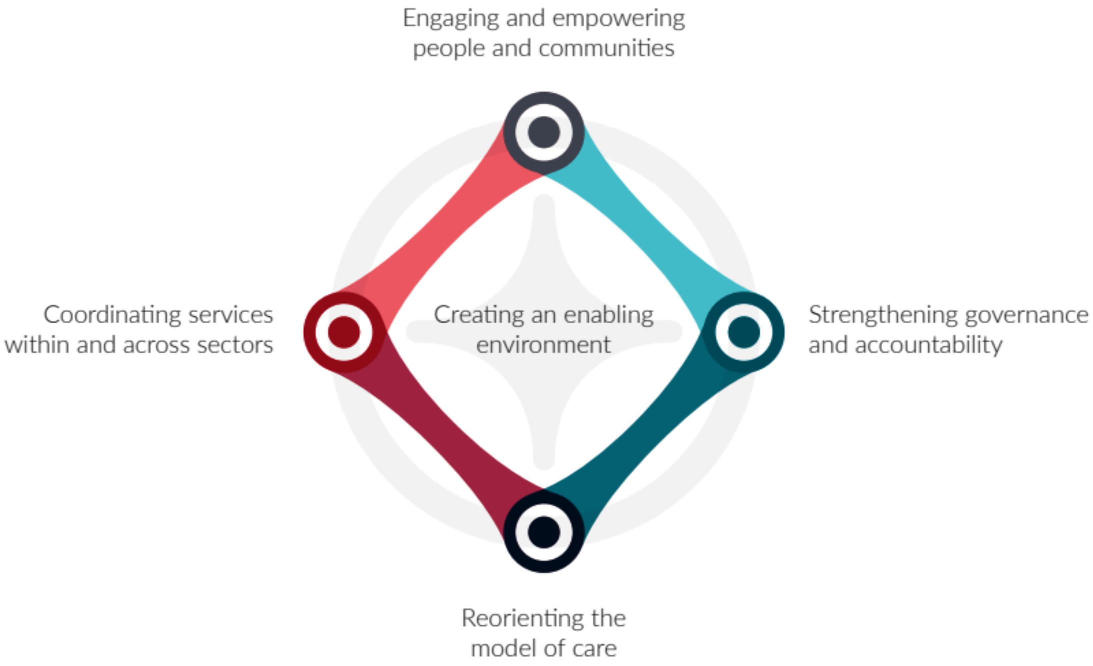


Figure 3.3: The Five Interdependent Strategies of the WHO Framework on Integrated People-centred Health Services (World Health Organization, 2016)

Table 3.1: The Five Strategies of the Framework for People-Centred and Integrated Health (World Health Organization, 2016)

Strategy	Description
1	Empowering and engaging people and communities
2	Strengthening governance and accountability
3	Reorienting the model of care
4	Coordinating services within and across sectors
5	Creating an enabling environment

Integrating care can be challenging, but it has been shown to have a positive impact not only for marginalised children and families but for the whole of society (Eastwood and Miller, 2021, p. 87). ‘Top-down’ and ‘bottom-up’ approaches have been described in the literature. A top-down structural approach is where government sectors and policymakers align and guide implementation (Eastwood and Miller, 2021). A bottom-up approach is locally driven and places the needs of individuals and their families at the centre of how services are delivered (Eastwood and Miller, 2021). An example of a bottom-up approach is the Healthy Homes and Neighbourhoods (HHAN) integrated care initiative in Sydney, Australia (Eastwood et al., 2019). This was a locally designed 'whole of system' approach to child, youth and family health and wellbeing. The design elements of HHAN are described in Table 3.2 (Eastwood et al., 2019). NS was developed as part of the HHAN initiative and was more specifically aligned to Component 1, through interagency collaboration; Component 6, by being a place-based initiative; and Component 7, where system change to reorientate health service delivery is described (Eastwood et al., 2019). Other examples of bottom-up approaches from Australia include Our Mia Mia and Our Place. Our Mia Mia is a hub located at Nowra East Public School, where various agencies, such as social support services, legal services and health services, are co-located and work in a holistic and collaborative model (Diaz et al., 2021). Our Place is a school-based hub in Victoria that provides holistic and evidence-based care to support the education, health and development of children and families living in disadvantaged communities (Cleveland et al., 2020). An evaluation of the pilot site for the initiative, Doveton Early Learning Centre, showed a trend towards higher academic achievement from school entry to Year 3 (McMahon, 2017; Newman et al., 2022).

Table 3.2: Design Components of the Healthy Homes and Neighbourhoods Initiative (Eastwood et al., 2019)

Components of Healthy Homes and Neighbourhoods	
Component 1	Shared identification and intake
Component 2	Care coordination
Component 3	Evidence-informed interventions
Component 4	General practice engagement and support
Component 5	Family health improvement
Component 6	Placed-based neighbourhood initiatives
Component 7	Interagency system change and collaborative planning
Component 8	Monitoring of individual and family outcomes
Component 9	Evaluation

3.5 Frameworks for School-based Health Care

SBHC programs have been adopted by many countries across the world to improve the health and education outcomes of children through a more integrated approach (World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021). In this section, these frameworks are broadly explored with a more detailed focus on two models, one based in southern Africa called Schools as Centres of Care and Support (SCCS) and the SBHC model established in the US. The section highlights how such models are implemented in different settings.

The health promoting schools guidelines introduced by the WHO describe the positive impact embedding health in the education system can have on health, education and social outcomes (World Health Organization, 2021). The WHO have developed eight global standards and an implementation guide for the initiative, stating that this could improve the health and wellbeing of 1.9 billion school-aged children, adolescents and staff worldwide, thereby potentially tripling the dividend for students across their life span and for the generations to follow (World Health Organization, 2021; World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021). Examples of SBHC programs from around the world are described in Table 3.3.

Table 3.3: Examples of School-based Health Care (SBHC) Models

Country	Name of SBHC Program	Description of SBHC Program
Indonesia	Usaha Kesehatan Sekolah/Madrasah	• Mandatory and government led. • Promotes health and wellbeing. • 10-component program including mental health screening, immunisations, teacher training, embedding health education within education curriculum. • Limited evaluation measures (Putri et al., 2023).
Tunisia	School Health Program	• Government led. • Doctor/nurse team works with schools to develop and implement school policies that align with the program. • One study showed that knowledge and behaviours regarding tobacco use, physical activity and a healthy diet improved after accessing the program (Harrabi et al., 2010).
Brazil	Health in School Program	• Government led. • Promotes the health and wellbeing of students, e.g. healthy eating, physical activity, and disease and infection prevention. • Emphasis on staff education and community partnerships to ensure access to healthcare services (Cenedesi et al., 2024).
Europe	School Health Services	• Physical health screening and health promotion. • Model requires redesign to include psychosocial wellbeing and holistic care (Michaud et al., 2021).
India	Integrated Child Development Scheme and other programs	• Government led. • Health promotion. • Parent and community engagement. • Mental health services (Jain et al., 2019; Pathania and Devgan, 2022).
New Zealand	School-based health services (SBHS)	• Model of care ranges from referrals made by school to drop-in clinics.

Country	Name of SBHC Program	Description of SBHC Program
		• Government funded for low socio-economic communities. • School-funded or partnering with local health services in other communities (Denny et al., 2019). • Comprehensive SBHS associated with lower student-reported depressive symptoms, emotional and behavioural difficulties and suicidality (Denny et al., 2018).

3.5.1 Southern African Model—Schools as Centres of Care and Support Program

In southern Africa, a school-based model of care called SCCS has been developed through multisector partnerships in rural and impoverished communities to improve access to health and social services. This program was developed in response to high rates of HIV (human immunodeficiency virus) and AIDS (acquired immunodeficiency syndrome) within the community and has now been implemented in about 1,000 rural schools within southern Africa (Argall and Allemano, 2012). One of the successful implementation strategies for the program was the identification of central schools that other schools in the region clustered around. At each central site, a multidisciplinary school support team was established to lead program implementation and to promote sharing of resources. Another mechanism for successful implementation was the recognition of new roles, particularly that of a learner support educator and a counsellor, who were trained to provide psychosocial support to students (Argall and Allemano, 2012; Looman et al., 2021).

A powerful enabler of the model was its endorsement at a macro and meso system level. At the macro level, the KwaZulu-Natal Department of Education helped address barriers regarding acceptance of the program by promoting it as a vehicle to address the health and learning needs of the most vulnerable students. Thereafter, various structures were implemented at a meso level to facilitate and support the program, including coordinated costing and financing of the program. This led to a favourable and harmonious policy environment that allowed legislative and policy frameworks to drive the normative integration of the program (Argall and Allemano, 2012; Valentijn et al., 2013).

Collaborative partnerships with government departments, local non-governmental organisations and communities were key to the success of the program, as was an understanding of the community. Furthermore, staff contracted to the program were able to learn new skills, which often led to new employment opportunities and thus growth of the community as a whole (Argall and Allemano, 2012). Table 3.4 summarises the implementation mechanisms utilised by SCCS (Argall and Allemano, 2012). Some of the challenges faced by the program were limited access to more intensive psychological support when needed, establishing cross-sector partnerships, monitoring progress, being perceived as 'adding' to workloads and transport to some regions. Overall, the program was associated with multiple benefits, including better access to health care and social care, community connectiveness, reducing stigmas associated with HIV/AIDS, promoting acquisition of life skills, positive peer relationships, improved school attendance and achievement, and strengthened cross-sector relationships (Argall and Allemano, 2012).

Table 3.4: Mechanisms Utilised by the Schools as Centres of Care and Support Program (Argall and Allemano, 2012)

Mechanisms Utilised by the Schools as Centres of Care and Support Program
1. Establishing and/or strengthening school and community structures
2. Developing the capacity of school and community structures, e.g. upskilling staff
3. Strengthening school and community leadership through shared leadership
4. Fostering an interdependent relationship between schools and community
5. Building partnerships—schools, communities, government departments, donors, non-governmental organisations and businesses
6. Identifying 'champions' for all levels of the program
7. Engaging community members to ensure acceptance of the program
8. Extensive psychosocial support programs within schools, including life and employment skills
9. Supporting and empowering parents through ongoing home visits and attendance at school and community meetings

3.5.2 United States Model for School-based Health Care

In the US, SBHC programs are well established with over 2,300 programs across the country (Arenson et al., 2019). SBHC programs play an important role in providing services to underserved populations of children and young people (Beem et al., 2019). They provide family-centred care and are often successful in establishing trusting and respectful relationships (Beem et al., 2019). The programs vary but, in general, comprise on-site health care delivered by a multidisciplinary team (Keeton et al., 2012). Most will provide medical assessments, immunisations, vision screenings, chronic disease management, behavioural health services, oral health, nutritional counselling, sexual health and reproductive counselling, and anticipatory guidance (Love et al., 2019). Common characteristics of SBHC are summarised in Table 3.5.

Table 3.5: Common Characteristics of the School-based Health Care (SBHC) Model (Keeton et al., 2012)

Common characteristics of SBHC
Located in schools or on school grounds
Becoming integrated within the school culture
Providing a comprehensive range of services that meet the specific physical and behavioural health needs of the young people in the community
Multidisciplinary team of providers to care for the students, e.g. nurses, social workers, physicians and counsellors
Providing clinical services through a qualified health provider, e.g. hospital, health department or medical practice
Requiring parents to sign written consents for their children
Advisory board consisting of community representatives, parents, youth and family organisations, to provide planning and oversight

SBHC programs within the US have evolved over time, and more recently, alignment has been sought through the Whole School, Whole Child, Whole Community (WSCC) framework. The WSCC framework was jointly developed by the Association of Supervision and Curriculum Development and the Centers for Disease Control and Prevention in 2014 (Centers for Disease Control and Prevention, 2014). The framework was developed from earlier models, including the CSHP (see Figure 3.1) and the whole child approach (Allensworth and Kolbe, 1987; Association for Supervision and Curriculum Development, 2007).

The WSCC framework builds on integrated care approaches to child health and wellbeing through the development of partnerships across the education and health sectors. The framework focuses on the whole school and how services and supports from the whole community are needed to serve the needs of the whole child (Lewallen et al., 2015). There are 10 main components to the framework, which is represented in Figure 3.4, and each component is interdependent on the others (Centers for Disease Control and Prevention, 2014; Lewallen et al., 2015). The overarching concepts of the framework are improved alignment and coordination of policy, process and practice (Chiang et al., 2015; Hunt et al., 2015; Lewallen et al., 2015). The model was designed so that specific interventions and resources could be tailored to the unique needs of each community (Chiang et al., 2015; Lewallen et al., 2015; Pittman et al., 2020). A Healthy Schools Toolkit (Purnell et al., 2020) and a 10-step process (see Table 3.6) were developed to assist with implementation of the framework. The scientific evidence for SBHC and the WSCC framework is summarised in Section 0.

Figure 3.4: The Whole School, Whole Community, Whole Child Framework (Centers for Disease Control and Prevention, 2014)

Table 3.6: Processes to Implement the Whole School, Whole Community, Whole Child Framework

Component	Description
Steering Group	Representatives from each sector and community to oversee initiative. Members have a strong interest in improving health and education outcomes. Can be a new committee or an existing one. Develop terms of reference.
Needs Assessment	To identify specific needs of community. Use existing datasets if available.
Shared Goals	Agreed goals and outcomes. Openly discuss competing interests.
Specific Outcomes	Select specific and measurable outcomes.
Identify Interventions	Review of evidence for interventions/programs to target goals. Review of existing policies, processes and practices that can affect goals.
Roles and Responsibilities	Determine how interventions/programs will be coordinated and implemented. Identify problems and solutions.
Community involvement	Expand committee's membership to include other community members or organisations to further the achievement of goals.
Action Plan	To implement the interventions/programs identified and measure outcomes.
Evaluation	Evaluate outcomes.
Monitor	Monitor action plan. Troubleshoot. Modify action plan as needed.

The WSCC framework emphasises the importance of a child's psychosocial and physical environment for their wellbeing as well as the need for strong collaboration between community agencies and sectors (Hunt et al., 2015; Lewallen et al., 2015). An example for the WSCC framework is the Coordinated Healthcare for Complex Kids (CHECK) program developed in Chicago (Minier et al., 2018). CHECK was designed to provide comprehensive healthcare delivery for children with chronic conditions. Community health workers engaged with families and worked across sectors to understand and address the various issues families were facing (Glassgow et al., 2017). The CHECK team identified key actions necessary for effective implementation of the program (see Table 3.7). These included a shared understanding about how learning and health were interrelated as well as agreement on goals and measurable outcomes (Centers for Disease Control and Prevention, 2014; Purnell et al., 2020). To achieve these outcomes, the partners worked towards forming meaningful collaborations, sharing data, establishing evaluation processes, and implementing policies and systems to improve efficiency (Minier et al., 2018).

Table 3.7: Key Actions for Effective Partnerships from the Coordinated Healthcare for Complex Kids (CHECK) Team (Minier et al., 2018)

Key Actions
Choose partners carefully.
Listen intently.
Advocate for institutional leadership to allow for collaboration and long-term resourcing.
Identify a common vision and values between educational and health partners.
Invest in the vision using a variety of resources.
Break down hierarchies and knowledge silos.
Pursue data-sharing agreements around specific and significant shared problems.

3.6 Childhood Behavioural Disorders: Evidence Review for Integrated Care Models

The scientific evidence for integrated care models to manage CBDs was examined as part of this thesis. A literature review of Embase, Google Scholar, Web of Science and MEDLINE was conducted. The search terms, with some combinations and variations, included oppositional defiant disorder, conduct disorder, childhood behavioural disorders, youth health, school-based health/care, integrated care, implementation, scoping reviews and systematic reviews. The evidence from systematic and scoping reviews of integrated models for CBD is summarised in Table 3.8 and is described in more detail below.

3.6.1 Integrated Models of Care for Childhood Behavioural Disorders and Youth Health Care

Integrated models between primary care providers and mental health professionals for the management of CBDs were reviewed by Platt et al. (2018). The authors identified 34 studies that reported on implementation outcomes using the Proctor et al. (2009, 2011) criteria of acceptability, adoption, appropriateness, feasibility, fidelity, implementation cost, penetration and sustainability. Facilitating factors for implementation were interprofessional communication and collaboration, clear protocols and co-employment of integrated care providers by specialty clinics. Challenges that were identified included differences in services based on demographic factors and funding. The authors concluded that the available research did not clearly identify implementation strategies and that further research was required (Platt et al., 2018).

Using a similar methodology, another scoping review examined the implementation of off-site integrated care between primary care providers and mental health professionals for CBDs (Spencer et al., 2019). Off-site integrated care models offer opportunities in settings where co-location of services is not feasible and include telephone or video conferencing. Overall, off-site models were found to be acceptable when there was strong interdisciplinary communication, timeliness of availability, reliability of services, additional support beyond the consultation and standardised care algorithms (Spencer et al., 2019). Adoption and penetration were facilitated by enhanced program visibility, particularly when there were on-site champions. Lack of funding and inadequate reimbursement limited the sustainability of all the models (Spencer et al., 2019).

In another recent review, the outcomes of mixed-methods studies for US school-based care coordination programs were reviewed (Francis et al., 2021). Care coordination referred to an organised and holistic approach to addressing the needs of families by connecting them to resources in the community. Included in this definition were the medical, social, developmental, behavioural, educational and financial needs of the family. The authors identified 11 papers out of 260 as being relevant. These studies showed that various health and learning issues were addressed and that over half of the care coordination programs were nurse led. Positive outcomes described by parents and students were convenience, trust and improved parent–teacher engagement. There was also improved asthma knowledge and management, immunisation rates, follow-up care for vision and hearing, mental health and school attendance. The authors concluded that although the literature was lacking in conclusive evidence, the trend towards potential health and learning benefits of care coordination meant that reliable funding for such programs and the evaluation process through strengthening of policy was needed (Francis et al., 2021).

Hetrick et al (2017) reviewed the available literature for integrated youth health care. The authors concluded that the best available data indicated that ‘one-stop shops’ for youth mental health provided increased access to care and indicators were suggestive of symptomatic and functional recovery as well as high consumer satisfaction (Hetrick et al., 2017). A systematic meta-analysis of randomised clinical trials to understand whether integrated models of care were better than standard primary care models for the management of CBDs showed a significant advantage for integrated care interventions on behavioural health outcomes (d = 0.32; 95% CI, 0.21–0.44; $p < .001$) (Asarnow et al., 2015). The authors showed a probability of 66% that a randomly selected youth would have a better outcome after receiving integrated medical-behavioural treatment than a randomly selected youth after receiving usual care (Asarnow et al., 2015).

A scoping review on community-based, integrated youth health hubs to identify the principles and characteristics necessary for implementing such models identified rapid access to care and early intervention, youth and family engagement, youth-friendly settings and services, evidence-informed approaches, partnerships and collaboration as being key features (Settipani et al., 2019). The authors found that very few studies included an evaluation arm, and there was a paucity of long-term follow-up data, generally because of inadequate resourcing. Generally, most studies reported positive outcomes, particularly improvements in psychological distress and psychosocial functioning. Most studies, however, did not provide sufficient information regarding replication, nor an evaluation of feasibility or implementation (Settipani et al., 2019).

3.6.2 School-based Health Programs in the United States

Several systematic reviews have examined the role of SBHC in the US. A systematic review between January 1990 and March 2014 examined the effectiveness of delivery of mental health services in SBHC settings. This review showed that SBHC provided access and eliminated barriers to mental health services. Furthermore, those students who displayed high-risk behaviours were more likely to have sought services at the SBHC centre. The authors noted that there was a lack of high-quality research in this area (Bains and Diallo, 2016).

In terms of chronic health conditions, a systematic review of literature published from 2000 to 2015 for conditions such as asthma, food allergies, diabetes, seizure disorders and poor oral health showed that having direct access to school nursing and other health services led to improved health and academic outcomes (Leroy et al., 2017). Mason-Jones et al. (2012) showed that although there was limited high-quality research to evaluate the effect of SBHC on adolescent sexual, reproductive and mental health, there was evidence that it was not only acceptable to young people, but popular among this age group. The authors found that SBHC provided important mental and reproductive health services for young people while being cost-effective because of reduced health disparities and emergency department presentations (Mason-Jones et al., 2012).

In the US, the role of SBHC in advancing health equity by providing health care to children from low-income and racial or ethnic minority populations was reviewed (Knopf et al., 2016). Forty-six studies conducted up to July 2014 were included. SBHC was associated with improved educational outcomes, such as in grade point average, grade promotion, suspension and non-completion rates, as well as health-related outcomes, for example, vaccination, asthma morbidity, emergency department use, hospital admissions, contraceptive use, prenatal care, illegal substance use and alcohol consumption. The availability of more services and more hours of operation was associated with greater reductions in emergency department overuse. Therefore, the reviewers concluded that SBHC in the US could be effective in advancing health equity by improving educational and health-related outcomes in disadvantaged students (Community Preventive Services Task Force, 2016).

A further review from the US provided an economic evaluation of SBHC. The initial costs associated with setting up an SBHC centre ranged from USD41,450 to USD378,704 with ongoing annual costs between USD16,322 and USD659,684 (Ran et al., 2016). The cost range was explained by variations in the services offered by SBHC centres. From a societal perspective, the total annual benefit per SBHC centre ranged from USD15,028 to USD912,878 with reductions in health service use and hospitalisation costs. Results from seven estimates in two cost–benefit studies showed that societal benefit per SBHC centre exceeded intervention costs, with the benefit–cost ratio ranging from 1.38:1 to 3.05:1. The authors concluded that the economic benefit of SBHC exceeded the operating cost (Ran et al., 2016).

3.6.3 Whole School, Whole Child, Whole Community Framework

The WSCC framework (see Figure 3.4) was intended to create alignment and assist with evaluation of SBHC programs across the US, but its use in this aspect has been limited. A review by Willgerodt et al. (2021) showed that there were eight published research studies specific to the WSCC framework. Of these, most studies described the value of the WSCC framework in implementing various interventions rather than its effectiveness. For example, in Mississippi, the challenges associated with establishing national recommendations for in-school physical activity were explored. The researchers discussed how the WSCC framework was useful in overcoming identified barriers to implementation, such as engaging students, families and the community (Gamble et al., 2017).

In another study investigating the predictive value of specific risk factors for bullying, the authors discussed implementation of programs and policies consistent with the WSCC model to help improve the school environment and proactively reduce bullying behaviour (Brewer et al., 2018). Another article discussed how the WSCC framework provided a useful approach for food education by encompassing nutritional status, culture, community, environment and society. In this study, researchers developed unifying standards for food education based on these principles but did not report on an evaluation process (Sutter et al., 2019).

Three studies specifically studied the 10 domains of the WSCC framework (Willgerodt et al., 2021). In a study by Vamos et al. (2020), the health education component of the WSCC framework was explored using a mixed-methods approach and it was concluded that ongoing training in health education for teachers was required. Another study specifically examined how local wellness policies in Los Angeles aligned with the principles of WSCC. It was found that while legislative mandates were better aligned with WSCC domains than non-legislated documents, there were opportunities to strengthen the alignment of wellness policies with WSCC (DeFosset et al., 2020). A more comprehensive study by Lee et al. (2019) examined practices that supported school health for each component of the WSCC model in US schools. It was found that around 27% of schools had a school health council that addressed any specific WSCC component, and that over 50% had a coordinator for most components. The use of practices that supported school health varied widely (Lee et al., 2019).

While there is a large body of evidence showing the link between the components of the WSCC model to health and education, the WSCC model as a whole and its cumulative impact using a thorough and comprehensive evaluation model have not been established (Michael et al., 2015; Rasberry et al., 2015). The limited empirical data on WSCC creates difficulty when drawing conclusions about the utility and effectiveness of the framework in relation to health, education and community outcomes (Willgerodt et al., 2021).

3.6.4 Other Reviews

A comprehensive systematic review of the effectiveness of school health services worldwide showed that there was evidence for interventions that addressed autism, depression, anxiety, obesity, dental caries, visual acuity, asthma and sleep. The authors did not find any systematic reviews that evaluated the effectiveness of school health services that addressed multiple health areas (Levinson et al., 2019).

In NZ, school-based health services (SBHS) have varying clinical and funding models (see Table 3.6) (Denny et al., 2018). An observational study of SBHS using data from 8,500 high school students from 91 high schools showed that selection bias was an issue because students who used the SBHS were more likely to have physical health and/or mental health concerns (Denny et al., 2019). However, in this cohort, more comprehensive SBHS were associated with lower levels of student-reported depressive symptoms ($p = 0.002$), emotional and behavioural difficulties ($p = 0.004$) and suicidality ($p = 0.008$) (Denny et al., 2018). The authors suggested that cluster-randomised studies were required to better understand the effectiveness of SBHS (Denny et al., 2019).

Locally, a rapid review to inform SBHC development in Victoria showed that while there was limited conclusive evidence on the effectiveness of global school health intervention programs, there was evidence to suggest that SBHC promoted healthy eating, physical activity and mental health improvements in adolescents while being acceptable, accessible and affordable (Sanci et al., 2015). A recent report on the impact of the National Community Hubs Program through partnerships with schools in Australia showed a social return on investment of 3.5 with an estimated social benefit of approximately AUD65.7 million. Children experienced improvements in educational outcomes, valued at AUD7.3 million, while schools saved approximately AUD754,000 because of a reduction in the school supports required by students (Deloitte, 2024).

3.6.5 Summary of Evidence

Overall, the evidence for integrated youth health models and SBHC models shows that they are acceptable to students, parents and stakeholders and that the main limiting factor is resourcing and sustainability (Mason-Jones et al., 2012; Settipani et al., 2019; Spencer et al., 2019). There is evidence that SBHC models lead to improved physical health, mental health and education outcomes for children (Asarnow et al., 2015; Bains and Diallo, 2016; Francis et al., 2021; Leroy et al., 2017; Levinson et al., 2019; MacArthur et al., 2018; Mason-Jones et al., 2012; Settipani et al., 2019). SBHC has been shown to advance social equity (Knopf et al., 2016) and be economically beneficial (Deloitte, 2024; Ran et al., 2016). However, there are gaps in the literature with regard to evaluation frameworks and implementation guidelines, both globally and within Australia.

Table 3.8: Summary of the Evidence for Integrated Care and School-based Health Care for Children and Young People

Topic	Article Title	Authors	Aims	Methods	Outcomes	Conclusions
Integrated behavioural health care for children and adolescents	Integrated Medical-Behavioral Care Compared with Usual Primary Care for Child and Adolescent Behavioral Health: A Meta-analysis	Asarnow et al., 2015	Integrated models versus primary care models for management of behavioural health problems for children and adolescents.	Systematic meta-analysis of randomised clinical trials between 1 January 1960 and 31 December 2014. 31 studies included.	Significant advantage for integrated care interventions vs usual care ($d = 0.32$; 95% CI, 0.21–0.44; $p < .001$).	Integrated medical-behavioural primary care is beneficial for improving youth behavioural health outcomes of children and adolescents.
Integrated youth health care	Integrated (One-Stop Shop) Youth Health Care: Best Available Evidence and Future Directions	Hetrick et al., 2017	To describe existing integrated youth services and evaluation outcomes.	Systematic review until 20 February 2017. 49 documents included.	'One-stop shops' provided increased access to care, suggestion of symptomatic and functional recovery and high consumer satisfaction. Limited definitions and descriptions of models.	Integrated youth health care models of care are multilayered, respond to diverse needs and improve access. No single 'best practice' model has been described.
Integrated youth health care	Key Attributes of Integrated Community-Based Youth Service Hubs	Settipani et al., 2019	To identify the key principles and characteristics of integrated	Scoping review between 2001 and 2019.	Several models identified, mainly high-income countries.	Internationally, integrated youth service hubs share common key principles and provide

Topic	Article Title	Authors	Aims	Methods	Outcomes	Conclusions
	for Mental Health: A Scoping Review		community-based youth health services to contribute to implementing and replicating such models.	110 documents included.	Common principles included rapid access to care and early intervention, youth and family engagement, youth-friendly settings and services, evidence-informed approaches and collaborative partnerships. Outcomes and information for replication was limited.	comprehensive services to youth with mental health difficulties. Need for consistent evaluation processes.
Co-location of primary care providers and mental health professionals	What's Known about Implementing Co-located Paediatric Integrated Care: A Scoping Review	Platt et al., 2018	To understand how co-located mental health interventions targeting children and adolescents have been implemented and sustained.	Systematic review until May 2018. 34 studies included.	Facilitating factors: interprofessional communication and collaboration, clear protocols for intervention delivery and co-employment of integrated care providers. Challenges: inadequate funding, which affected sustainability.	The available research did not clearly identify implementation strategies and further research was required.

Topic	Article Title	Authors	Aims	Methods	Outcomes	Conclusions
Implementation of off-site integrated care for children	Implementation of Off-site Integrated Care for Children: A Scoping Review	Spencer et al., 2019	Review the existing literature on implementing off-site paediatric integrated care.	Systematic review until June 2018. 39 papers included.	Off-site models were acceptable to providers. Facilitating factors: strong interdisciplinary communication, timely availability and reliability of services, additional support, standardised care algorithms, enhanced program visibility, certain populations (e.g. school-age, less complex ADHD). Challenges: inadequate funding, which affected sustainability.	Off-site interventions are feasible and acceptable. They require adequate planning, administrative support and interprofessional communication.
School-based health care (SBHC)—care coordination programs	A Mixed-Methods Systematic Review Identifying, Describing and Examining the Effects of	Francis et al., 2021	To describe and examine the effect of US SBHC care coordination programs on all	Systematic review between 2012 and 2020. 11 studies included.	Various health and learning issues addressed. > 50% programs were nurse led. Parents and students described	There is a need to expand school-based care coordination programs in the US and conduct robust evaluations to assess effectiveness.

Topic	Article Title	Authors	Aims	Methods	Outcomes	Conclusions
	School-Based Care Coordination Programs in the US on All Reported Outcomes		the outcomes reported.		care coordination as convenient, trusting, improved parent–teacher engagement, enhanced health knowledge and school attendance. Challenges: staff shortages, unmet family needs, privacy laws and lack of resources.	
SBHC—mental health services	Mental health Services in School-Based Health Centers: Systematic Review	Bains and Diallo, 2016	To review evidence on the effectiveness of delivery of mental health services in SBHCs.	Systematic review between January 1990 and March 2014. 23 studies included.	Mental health comprised up to 30% of total visits to SBHCs. Students with high-risk behaviours, complex mental health difficulties, sleep difficulties or uninsured were more likely to access SBHCs.	SBHCs provide improved access to mental health services for children and adolescents.
SBHC and chronic health conditions	The Role of School Health Services in Addressing the Needs of	Leroy et al., 2017	To assess the role of school health services in addressing CHCs among	Systematic review between 2000 and 2015.	Improved clinical symptoms, medication adherence and	Most studies were on asthma, which limits generalisability. Some evidence for improved health outcomes and reduced absenteeism.

Topic	Article Title	Authors	Aims	Methods	Outcomes	Conclusions
	Students with Chronic Health Conditions (CHCs): A Systematic Review		students in Grades K–12.	39 studies included (38 on asthma).	healthcare utilisation. Decreased absenteeism.	Further research required.
SBHC and adolescent health	A Systematic Review of the Role of School-Based Health Care in Adolescent Sexual, Reproductive, and Mental Health	Mason-Jones et al., 2012	To review the evidence of the effects and cost-effectiveness of SBHC on adolescent sexual and reproductive health and mental health.	Systematic review between January 1990 and March 2012. 27 studies included.	Limited evidence of effectiveness of SBHCs in sexual and reproductive or mental health outcomes. Some studies show that students received more focused preventive health care. Improved access particularly for female students and those with more severe mental health concerns.	SBHCs are popular with young people, and provide mental and reproductive health services. Services have cost benefits. Further high-quality research needed.
SHBC and economic evaluation	Economic Evaluation of School-Based Health Centers: A Community Guide	Ran et al., 2016	To evaluate the economic cost and benefit of SBHCs.	Systematic review between January 1985 and	SBHC led to net savings between USD30 and USD969 per visit. Patients' savings were positive.	The economic benefit of SBHCs exceeds the intervention operating cost.

Topic	Article Title	Authors	Aims	Methods	Outcomes	Conclusions
	Systematic Review			September 2014. 21 studies included.	Medicaid cost and hospitalisation cost decreased with SBHC. Societal benefit exceeded intervention cost, with benefit–cost ratio ranging from 1.38:1 to 3.05:1.	
SBHC and health equity	School-Based Health Centers to Advance Health Equity: A Community Guide Systematic Review	Knopf et al., 2016	To examine the effectiveness of SBHC in improving educational and health outcomes of disadvantaged students.	Systematic review until July 2014. 46 studies included.	Most SBHC centres served urban, low-income and racial or ethnic minority high school students. SBHC associated with improved educational (i.e. grade point average, grade promotion, suspension, and non-completion rates) and health-related outcomes (i.e. vaccination, preventive services, asthma morbidity, emergency	SBHCs improved educational and health-related outcomes in disadvantaged students and are thus effective in advancing health equity.

Topic	Article Title	Authors	Aims	Methods	Outcomes	Conclusions
					department use and hospital admissions, contraceptive use, prenatal care, birth weight, illegal substance use and alcohol consumption).	
SBHC and health outcomes	Investigating the Effectiveness of School Health Services Delivered by a Health Provider: A Systematic Review of Systematic Reviews	Levinson et al., 2019	To investigate the effectiveness of school health services for improving the health of school-age children and adolescents.	A systematic review of systematic reviews until June 2018. 20 studies included.	Effective interventions included those for autism, depression, anxiety, obesity, dental caries, visual acuity, asthma and sleep.	Limited systematic reviews available. Strongest evidence for anxiety prevention programs, indicated asthma education and vision screening with provision of free spectacles. Additional systematic reviews needed.
Impact of the National Community Hubs Program	Community Hubs Australia: Social Return on Investment Evaluation of the National Community Hubs Program, 2023	Deloitte, 2024	Measuring the impact on local communities of the National Community Hubs Program (NCHP) through partnerships	Social return on investment (SROI) was estimated using quantitative and qualitative evidence. Data	SROI of 3.5 with an estimated social benefit of approximately AUD65.7 million. Children experienced improvements in educational	NCHP delivered benefits of $65.7 million to Australian society in 2023, equating to a social return on investment of $3.5 for every dollar invested in the program.

Topic	Article Title	Authors	Aims	Methods	Outcomes	Conclusions
			with schools throughout Australia.	sources used were: • 2023 Hub Census • English and Childminding evaluation data • Hub Portal activity data • Secondary data: Government statistics websites and the 2019 SROI evaluation of the NCHP.	outcomes, valued at AUD7.3 million. Schools saved approximately AUD754,000 because of reduced in-school supports required by students.	

3.7 Developing School-based Health Care Programs in Australia

School health programs were introduced in Australia in the 1970s and called Health Action Models. The goal of the model was to bring together various factors that influenced health including social and environmental factors (Tones, 1987). Health Action Models led to the development of health promoting schools in the 1980s, where the concepts of health education and health promotion were combined to address complex issues such as drug misuse, but only a few initiatives had health services co-located within schools (Dennis et al., 2017; Eapen et al., 2012).

In recent times, there has been growing recognition of the importance of schools in supporting not only the educational needs of a community but also the health and wellbeing of individuals, families and community groups (Cleveland et al., 2020). In addition, it has been noted that schools are an underutilised resource in Australia since most are unused outside of school hours. In addition, very few schools are co-located with other services, such as sporting, recreation and health services (Cleveland et al., 2020).

For Aboriginal populations within Australia, health and education are closely linked. Education helps improve physical health and SEWB by promoting improved self-esteem and confidence, increased health literacy, and facilitating better employment opportunities (Cohen and Syme, 2013). Among the Aboriginal community, though, education is much more than schooling. Compulsory schooling was introduced during colonisation and does not sit comfortably with Aboriginal concepts of learning. Western models of education focus heavily on academic achievement. For Aboriginal people, particularly in remote regions of Australia, inclusion of cultural knowledge and skills is more highly valued. These include skills in art, culture, history, land and sea management, as well as literacy in both English and Aboriginal languages (Shultz et al., 2018). Moreover, attending school has associated costs. They include having a home environment suited for schooling, such as a place to do homework, as well as psychosocial costs, such as intergenerational experiences of racism within the education system (Bodkin-Andrews and Carlson, 2016).

The program studied in this thesis is NS, which was co-designed with the Aboriginal community. The model of care is described in Chapter 6. In developing the NS model, an important consideration was cultural safety and how this could be fostered through creating a sense of connection, flexibility and choices, consistency and collaboration. These concepts are described in more detail in the following section.

3.7.1 Service Models for Aboriginal Communities

In developing SBHC models across the world, the importance of involving communities, particularly Indigenous communities, has been recognised. This is relevant when considering how SBHC programs can be implemented in Australia as well. The Indigenous School Health Framework addresses concepts from different First Nations communities, including those in the US, NZ and Australia (Tagalik, 2010). The model centres on developing a holistic understanding of wellbeing as represented by a circle (see Figure 3.5). The cultural context of learning, knowledge and application of knowledge surrounds this circle, emphasising the dynamic interactions of 'ways of knowing' and 'ways of doing'. Other aspects of the framework are physical, emotional, social and spiritual wellbeing and how these facets are interconnected with beliefs, values, teachings and gifts (Tagalik, 2010). These principles helped conceptualise the goals of the NS model of care, which involved the provision of holistic care to children.

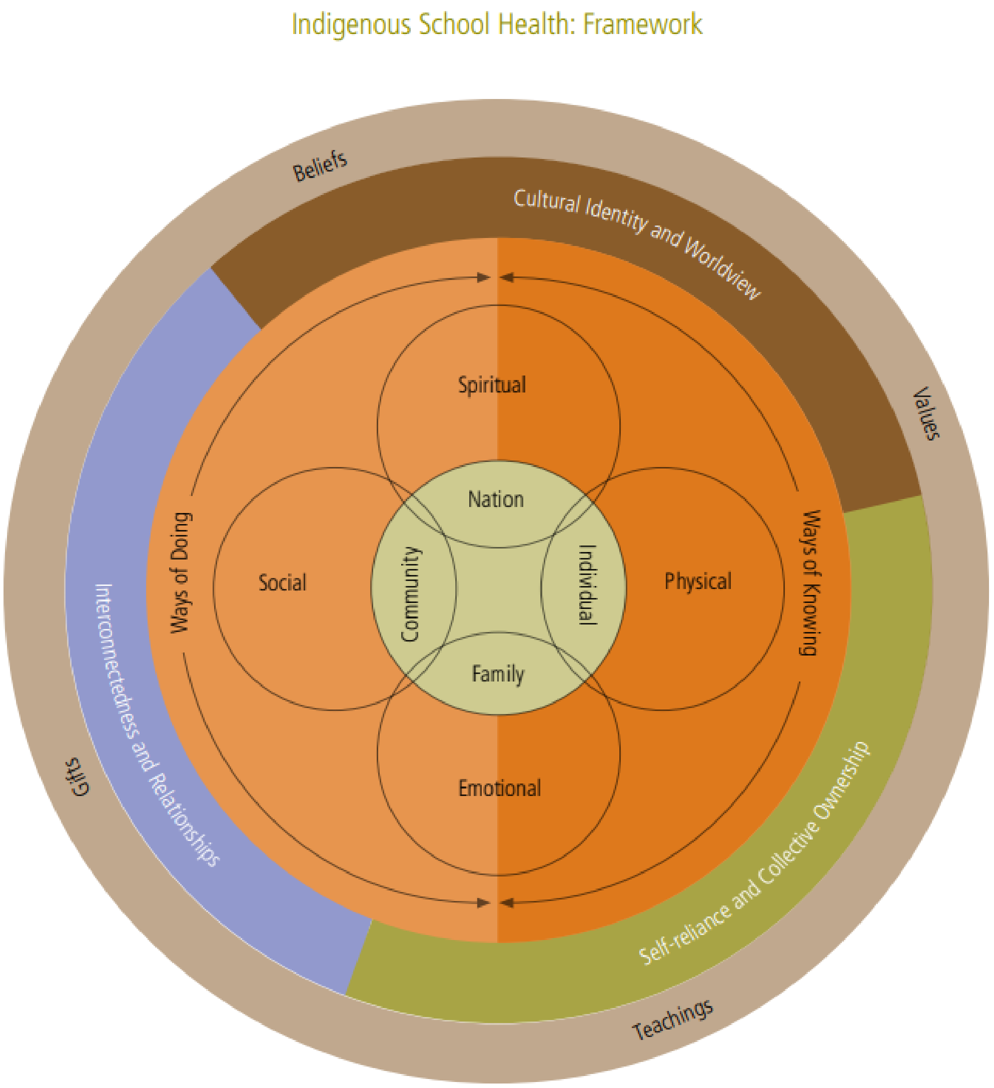


Figure 3.5: A Framework for Indigenous School Health (Tagalik, 2010)

Cultural safety refers to a respectful and deep understanding of cultural and social differences (Harrison et al., 2017). For the health and education sectors to engage with Aboriginal communities, cultural safety can be achieved by reflecting local cultural knowledge and practices (Harrison et al., 2017). An example of this approach is the Multifunctional Aboriginal Children’s Services program, which was established across Australia in 1987. This was a childcare program managed by the community with predominantly Aboriginal employees. Staff were equipped to provide a range of education and care programs while offering practical family support, such as transportation. Facilitating trusting and culturally respectful relationships led to a high level of demand and engagement with the program (Sydenham and Mason-White, 2015). This approach allowed communities to have autonomy and agency over decisions affecting their health (Kuipers et al., 2016; White et al., 2021).

Models of care that involve Aboriginal communities, such as NS, require an understanding of psychological trauma. Psychological trauma can be defined as single or repeated adverse events that threaten to overwhelm a person’s ability to cope. Trauma-informed systems are based on the principles of safety, trustworthiness, choice, collaboration and empowerment, as well as respect for diversity. Such systems are sensitive to the needs of the individual and are careful to avoid creating more trauma or blaming the victim. When developing the NS model, the community endorsed a strengths-focused, collaborative and respectful approach to the engagement and assessment of students and families (Bath, 2008; Wilson et al., 2013). This aligned well with the approach of Aboriginal Community Controlled Health Services (ACCHS). ACCHS play an important role in delivering culturally safe and trauma-informed health care in Australia. They provide holistic and multidisciplinary health care with embedded evaluation activities. The models of care often adopt a whole-of-family approach and can involve schools and outreach services to address complex needs (Panaretto et al., 2014)

Programs that are successful within Aboriginal communities often foster a strong sense of connection between the client, the service and the community (Mental Health Commission of NSW, 2020; Shultz et al., 2018). The National Aboriginal and Torres Strait Islander Social Survey showed that strong traditional culture is associated with improved socio-economic outcomes and Aboriginal literacy (Cairney et al., 2017). This is exemplified by Aboriginal-led ‘caring for country’ initiatives. Such initiatives have been based on traditional ecological knowledge to manage land and sea activities. In this way, connections to country were restored, resulting in improvements in social, cultural, SEWB and physical health (Burgess et al., 2009), as well as benefits to the environment (Berry et al., 2010). For the NS model, a sense of connection was created by involving the Aboriginal community from the outset of its development.

Flexibility has been recognised as a way to enhance uptake of guidelines and improve care for Aboriginal communities (Hinton et al., 2015; Kilian et al., 2019). This includes having multiple entry points for an individual to engage with a service (Mental Health Commission of NSW, 2020). Similarly, wraparound support services have been identified by Aboriginal communities as being effective in encouraging students and their families to engage with a service (Berry et al., 2010; Hinton et al., 2015). The nature of wraparound support varies depending on available resources and capabilities but generally involves a holistic and flexible approach to the needs of individuals as well as coordination across services (Shultz et al., 2018). Furthermore, consistency and cooperation among services and sectors is desired among the Aboriginal community and allows communities to achieve more with limited resources. For trusting relationships to be built, services and multisector partners need to be consistently present. In a study about access to mental health services in the Northern Territory, a high turnover of staff was noted as having a detrimental effect on the community (Hinton et al., 2015). A further study about suicide rates among Aboriginal people in Central Australia found that failure to support staff to remain in key roles was a barrier to care (Kuipers et al., 2016). Consistency in service delivery requires adequate resourcing with sustainability measures as well as effective governance and systems in place (Hinton et al., 2015). Partnerships and sharing resources are looked on favourably by the Aboriginal community as opposed to services competing for resources (Shultz et al., 2018; White et al., 2021). These concepts informed NS, where a multidisciplinary team collaborated to provide wraparound care, consistency and flexibility.

3.8 Summary

Healthy students are more successful learners, and health providers can achieve improved health outcomes by reaching children in schools (Blank, 2015). Children spend a substantial amount of time at school. By being situated in schools, SBHC programs provide an accessible and convenient place to provide preventive and primary health care (Love et al., 2019; Riley et al., 2016). As shown by the various examples of SBHC programs, the services provided are often based on the needs of a community and allow communities to have ownership of their health care (Arenson et al., 2019; Argall and Allemano, 2012; World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021). The scientific evidence shows that integrated care and SBHC programs for young people are effective in improving physical health, mental health, education and social outcomes while being acceptable and cost-effective (Chiang et al., 2015; Keeton et al., 2012; Larson et al., 2017; Lewallen et al., 2015).

For young people, partnerships between the health and education sectors improves access to holistic care to strengthen their developmental trajectory. Forming collaborative partnerships is an active and ongoing process that requires time so that trusting and deep relationships can be formed. The success of any collaborative efforts hinges on the strength of these relationships. For Aboriginal people, multisector partnerships between the health and education sectors can change the cycle of intergenerational psychological trauma, promote resilience and improve outcomes for children and families (Edwige and Gray, 2021). Furthermore, schools provide a universal platform to support disadvantaged communities.

Schools are uniquely placed in that they are accessible to communities without being stigmatising. This provides a foundation on which to build relationships, identify needs and reduce barriers to accessing support. With strong engagement of local community leaders and service providers, schools can offer integrated care opportunities that can have a positive effect on two powerful social determinants of wellbeing: health and education (Cleveland et al., 2020).

Chapter 4 Methodology and Methods

4.1 Methodology

4.1.1 Introduction

Internationally, SBHC has had a promising impact on health, mental health and educational outcomes while having high acceptability with young people and parents (Allison et al., 2007; Arenson et al., 2019; Keeton et al., 2012). To date, specific research on the role of integrated partnerships between the health and education sectors for students with CBDs within Australia has not been studied. This thesis is based on a multidisciplinary and holistic SBHC program (NS) established at a specialised school (YGS) for children experiencing CBDs to understand how partnerships between the health and education sectors could promote positive outcomes for students. In this chapter, the methodology and methods behind this research are discussed.

4.1.2 Purpose Statement

The purpose of this research was to evaluate a multidisciplinary SBHC program (NS) at a specialist behavioural secondary school (YGS) to understand how the health and education sectors can partner to provide care for children experiencing CBDs. By exploring how such partnerships could improve outcomes for these children, this research has important implications for the health and education sectors as well as for families and communities.

To conduct this evaluation, a critical realist–informed, sequential three-phase mixed-methods approach was used. Figure 4.1 describes the research process and this is further discussed in the methods section of this chapter (see Section 4.2). In Phase 1, quantitative research was used to describe the population assessed at NS in terms of demographics, attendance at the clinic, health and wellbeing screening, recommendations made, and changes in behaviour. In Phase 2, qualitative semi-structured interviews were used to understand the factors related to the model of care, including the facilitators and barriers to forming partnerships between the health and education sectors. In Phase 3, qualitative semi-structured interviews with a CoP were used to understand the factors related to implementing the model of care at other sites, including the facilitators and barriers associated with this process.

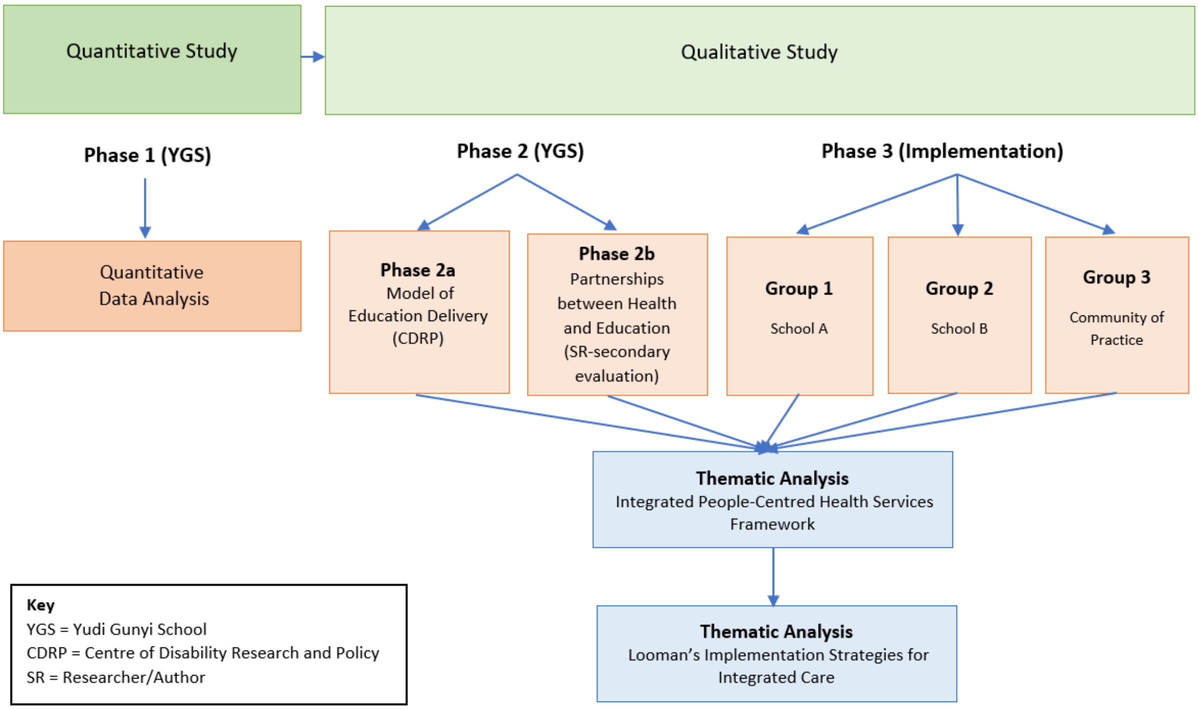


Figure 4.1: Diagram Illustrating the Sequential Three-phased Research Design for Ngaramadhi Space

4.1.3 Goal and Objectives

Goal: The overall goal of this thesis was to describe the need for and the co-design, evaluation and potential for scale-up of a school-based healthcare program (NS) developed with the Aboriginal community to provide holistic care for students attending a specialist behavioural secondary school in Sydney. The project had five main objectives relating to this overarching goal:

- **Objective 1.** To explore the cultural, social and historical factors associated with CBDs within Australia.
- **Objective 2.** To describe how the NS model of care was co-designed with the health sector, schools and the Aboriginal community.
- **Objective 3.** To evaluate the characteristics and needs of students attending NS between 2016 and 2019 to inform ongoing implementation efforts and scaling up of the model of care.
- **Objective 4:** To understand the facilitators and challenges of developing and operating a multidisciplinary school-based model of care for CBD.

- **Objective 5:** To understand how the NS model could be implemented in other educational settings, as well as the related challenges and facilitating factors.

4.1.4 Methodology Background and Theory

This body of research was conducted using a mixed-methods approach, combining qualitative and quantitative approaches. Qualitative studies are useful when seeking to understand why models of practice are successfully or unsuccessfully implemented (Albright et al., 2013). In contrast, quantitative methods emphasise a deductive and objective approach and are often used for measuring outcomes (Albright et al., 2013; Creswell, 2009). In mixed-methods design, these two approaches are integrated to increase the depth of understanding produced by the research (Landsverk et al., 2012). For example, in a quantitative study of immunisation rates, the use of reminder or recall systems were shown to increase immunisation rates, but such systems were rarely used in clinical practice. A qualitative study provided insight into this issue and identified time constraints, competing demands, instability of staffing and costs as barriers to implementation (Saville et al., 2011). These findings led to alternative approaches being developed, including centralised approaches that were less labour intensive for individual practices (Kempe et al., 2013).

For effective combination of quantitative and qualitative methods to occur, data from both studies need to be mixed at some stage of the research process (see Figure 4.2) (Albright et al., 2013; Landsverk et al., 2012). There are many ways to accomplish this, including merging the data, connecting the data and embedding the data (Creswell and Clark, 2017). When merging the data, two types of data are brought together to answer the same question or related questions. Connecting the data involves analysing one set of data, which then leads to the collection of another set of data to better understand the findings of the initial data (Landsverk et al., 2012). Embedding the data occurs when qualitative studies are entrenched within larger quantitative studies to obtain depth or expansion of results (Landsverk et al., 2012). For this research study, a sequential approach was used to connect the data. Quantitative data were first analysed to inform the qualitative study. Overall, this mixed form of methodology allowed a better understanding to be gained about how the education and health sectors could work collaboratively. More specifically, in Phase 1, quantitative analysis of NS was used to understand the background demographics of students as well as the health and social issues present. It also allowed information about unmet physical health, mental health and social needs, as well as recommendations and behavioural changes to be gained. The qualitative methodology of Phase 2 allowed exploration of how the education and health sectors worked together, and the related facilitating factors and barriers. Phase 3 of the study was also qualitative in nature and identified factors associated with implementation of the NS model at other sites.

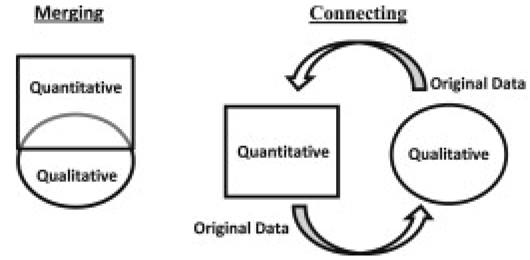


Figure 4.2: Integration Processes for Quantitative and Qualitative Data (Albright et al., 2013)

Implementation research can be conceptualising using the Knowledge to Action (KTA) Framework (Graham et al., 2006). This framework was developed in Canada to describe the process of moving knowledge into action. The KTA Framework has two components. These are knowledge creation, which is represented by an inverted triangle or a funnel, surrounded by an action cycle (see Figure 4.3) (Graham et al., 2006). The framework is dynamic, with overlap and bidirectionality between the components. The knowledge creation phase involves various research processes. As knowledge moves through the funnel, it becomes more refined so that, eventually, only the most useful knowledge is left (Graham et al., 2006). The action cycle interacts with the elements of knowledge creation. The goals of the action part are to allow the implementation or application of knowledge in either a sequential or a simultaneous manner so that it is adapted to suit local contexts (Field et al., 2014). In this body of research, qualitative data from key stakeholders helped determine the barriers and facilitators to implementation of the NS model of care.

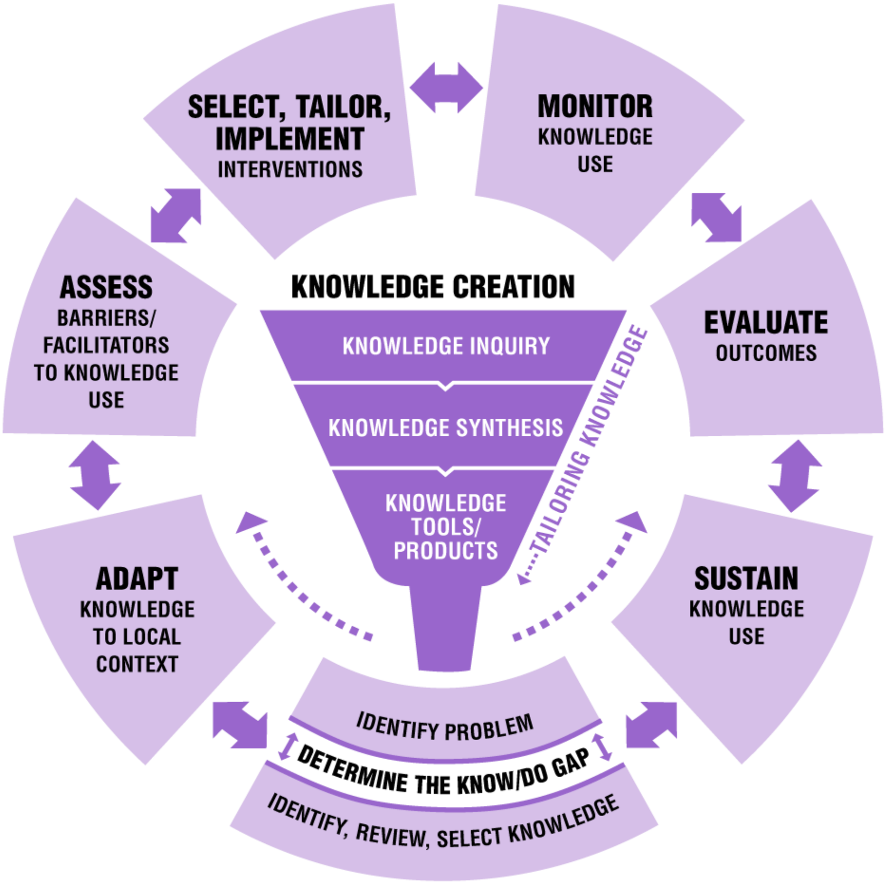


Figure 4.3: The Knowledge to Action Framework (Graham et al., 2006)

4.1.5 Ontology, Epistemology and Worldview

4.1.5.1 Ontology

Ontology is defined as ‘the study of being’ and is concerned with ‘what kind of world we are investigating, with the nature of existence, with the structure of reality as such’ (Crotty, 1998, p. 10). It seeks answers to questions related to the nature of reality (Lincoln et al., 2011). In other words, ontology explores the nature of different entities within the world and underlying assumptions about them (Bryman and Bell, 2011).

Bryman (2007) described two main ontological viewpoints: (a) reality is one entity and (b) multiple realities coexist as a function of the social world. These viewpoints affect how a researcher investigates a phenomenon. For example, if reality is viewed as a single entity, then a researcher would choose an objective form of investigation. This position would be called objectivist and is often associated with the scientific analysis of the physical world, in which subjects respond to a fixed set of stimuli or conditions (Bryman and Bell, 2011). On the other hand, if reality is viewed as a multiplicity, then a researcher would choose to investigate a variety of human experiences (Bryman and Bell, 2011). This would be called subjectivist and is associated with how humans assign meaning to their world on the basis of social, cultural and historical factors (Bryman and Bell, 2011).

While these ontological views are on opposite sides of the research spectrum, most modern-day researchers are positioned somewhere in the middle of these viewpoints (Ansari et al., 2016). This positioning is often the reasoning behind using mixed methodology, in which the value of both objective and subjective views when understanding the notion of reality is acknowledged (Ansari et al., 2016). For example, in a study of reading habits and performance in English of bilingual university students, researchers used quantitative measures of performance as well as semi-structured interviews to explore participants' home and educational backgrounds. This allowed for a more complete understanding of the phenomena being studied (Ansari, 2015). Similarly, when endeavouring to understand how the health and education sectors can work in an integrated manner, the ontological view was positioned in the middle with the importance of both objective and subjective information recognised.

4.1.5.2 Epistemology

Epistemology is concerned with the process through which a researcher may establish or determine reality or a way of understanding and explaining 'how we know what we know' (Crotty, 1998, p. 8), providing a philosophical understanding when 'deciding what kinds of knowledge are possible and how to ensure that they are both adequate and legitimate' (Crotty, 1998, p. 8).

The two main paradigms that underpin epistemology are positivism and interpretivism (Ansari et al., 2016). Positivism assumes that there is only one objective reality, that this is independent of human perception about it and that the truth can only be determined by systematic scientific inquiry (Creswell and Clark, 2017). Interpretivism is on the opposite side of the epistemological spectrum. The underlying assumptions here are that the world is a complex entity, that subjective experiences and social dimensions within specific social settings are important and that the interaction between the researcher and the subjects allows the truth to be determined (Creswell and Clark, 2017; Maykut and Morehouse, 2002).

As with ontology, most researchers will take an intermediate viewpoint on epistemology. In the abovementioned example of reading proficiency in bilingual students, the researchers involved with the study took an intermediate epistemological viewpoint. This positioned the researchers to use empirical data to gather objective data of proficiency as well as data collected from interviews to better understand the factors that influenced reading habits and reading proficiency (Ansari, 2015). Again, in this research, to form a clearer understanding of how the education and health sectors can work collaboratively, an intermediate epistemological position was taken so that objective and subjective data were collected.

4.1.5.3 Philosophical Worldview

This research is grounded in critical realism. Critical realism is a philosophical worldview whereby 'realism' describes a natural world that exists outside of our interpretations of it. 'Critical' refers to the study of science as a human activity that is mediated by interactions with human language and social powers, all of which inevitably evolve over time (Buch-Hansen, 2005; Gorski, 2013). A theme within critical realism is that of transcendental realism. This refers to nature as being stratified and that the strata are emergent—such that scientific knowledge grows as previously unknown strata are discovered. In this manner, critical realism seeks to understand the natural world as it really exists alongside our changing perceptions or knowledge of it (Gorski, 2013; Groff, 2008). In doing so, a critical realist approach rejects reduction of the social factors that influence nature and embraces complexity (Alderson, 2021).

Some practical ways to conduct critical realist–informed research are through the interviewing style used, developing an understanding of process evaluation (Sturgiss and Clark, 2020) and adopting the techniques of abductive and retroductive reasoning (Meyer and Lunnay, 2013). The interviewing style used casts the interviewee as the expert or 'teacher' and the interviewer as the learner. So, the interviewer asks deep and progressive questions to formulate a rich understanding of how and why interventions are effective (Manzano, 2016). Process evaluation involves identifying contextual strata that influence the effectiveness of interventions as well as the unseen mechanisms that trigger change. So instead of assuming that it is the intervention itself that effects change, a realist approach recognises the influence of context on the effectiveness of a particular intervention (Clark et al., 2012). Abductive reasoning, meaning the application of logical inference to seek the simplest and most likely conclusions, and retroductive reasoning, meaning to use prior knowledge and available evidence to explain an observation, are techniques that assist in revealing the contextual strata (Meyer and Lunnay, 2013).

As an example of a critical realist approach, in a Columbian study about school effectiveness, the author discussed the role an overemphasis on linear empirical or causal outcomes has on education frameworks (Parra, 2018). For example, a focus on test scores alone negates an understanding of the role of historical and social structures on educational attainment (Parra, 2018). The authors recommended using a critical realist methodology to understand the social processes behind observable educational outcomes. In another study, a critical realist approach was applied to the subject of wellbeing in a primary school after participation in an intervention program. The researchers found that the collective efforts of parents, schools, stakeholders, communities, policymakers and governments were all part of the overall success of such programs and highlighted the importance of understanding the historical, social and cultural contexts of such programs (Ranatunga and Pagliano, 2017).

Critical realism is relevant to this research in that the NS model of care emerged as a dimension or potential solution for inequitable health, education and social outcomes observed within the local community, as is described in Chapter 6. The Aboriginal community was integral in developing the NS model, particularly the concept of SEWB. The meaning of SEWB is centred around developing a holistic understanding of wellbeing that accounts for physical, emotional, social and spiritual wellbeing and how these elements relate to beliefs, values, teachings and gifts (Mental Health Commission of NSW, 2020; Tagalik, 2010).

This study aims to understand the underlying nature or mechanisms of SBHC programs, particularly the elements relating to partnerships between the health and education sectors, to identify the facilitating factors and barriers to this process. Care and a reflexive approach were taken to avoid overinterpretation of quotes and themes that would lead to a bias through which data were made to fit within frameworks (Meyer and Lunnay, 2013; Skivington et al., 2021; World Health Organization, 2016).

4.1.6 Frameworks for Thematic Analysis

Braun and Clarke’s thematic analysis framework (2006) was applied to this research. Thematic analysis refers to a methodological study of patterns within qualitative data to uncover meaning (Braun and Clarke, 2022). Braun and Clark’s framework describes theoretical flexibility, procedures of coding and theme development, and the use of inductive and deductive analysis (Braun and Clarke, 2022). Of the various schools of thematic analysis, this research used a codebook approach. A codebook approach involves early theme development. In this study, early themes were based on the research questions that informed the interview guide (see Appendix C: Interview Guide) (Braun and Clarke, 2022). The research team worked from a strengths-based perspective and were guided by Bronfenbrenner’s (1977) ecological systems framework, in which the influence of interconnected environmental systems on individuals and communities is posited, and the Lowitja evaluation framework, which provides an evaluation framework oriented towards improving the benefits of evaluation for Aboriginal and Torres Strait Islander people (Kelaher et al., 2018).

To assist with developing an understanding of how the NS model could provide care for children, and to identify the facilitating factors and barriers to this process as well as for scaling up, the principles of the IPCHS framework (see Figure 3.3) (World Health Organization, 2016) and Looman et al.’s (2021) underlying implementation strategies for integrated care (see Figure 4.4) were considered (Looman et al., 2021).

The IPCHS framework proposes five interdependent strategies that seek to transform health service delivery to be more responsive to people’s needs throughout their life course (World Health Organization, 2016). Looman et al. (2021) proposed 10 mechanisms that underlie implementation strategies for scaling up integrated care initiatives. The IPCHS framework was used to contextualise the main themes from the data analysis, while Looman’s implementation strategies were used to derive themes that would help determine mechanisms for broader scaling up and implementation of the model (Looman et al., 2021; World Health Organization, 2016).

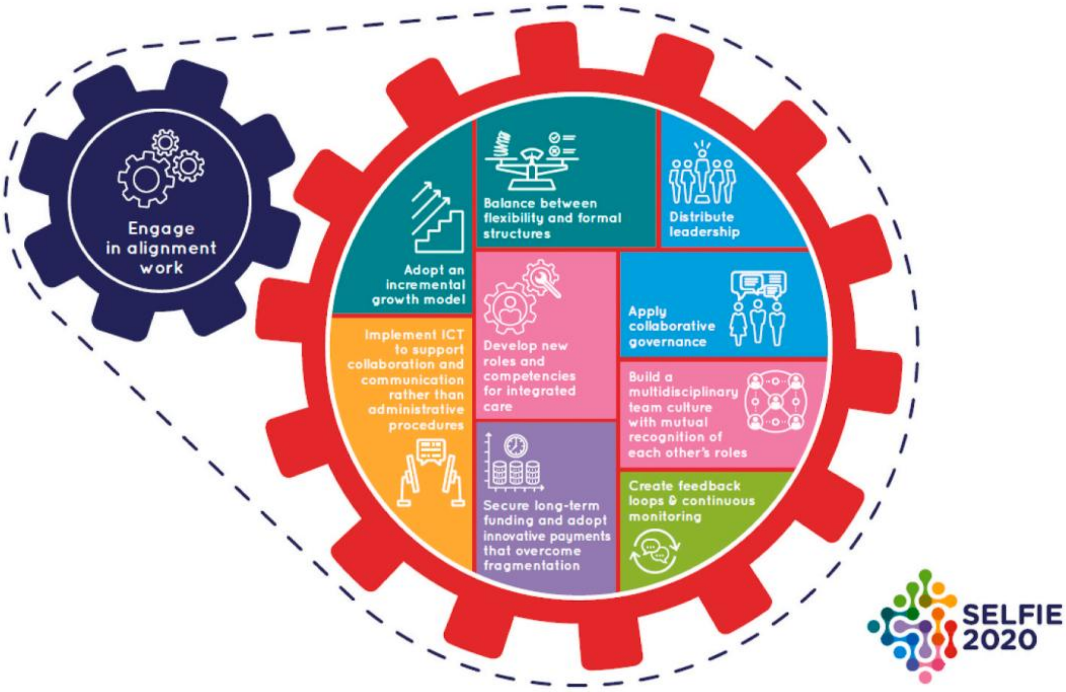


Figure 4.4: The 10 Implementation Mechanisms for Integrated Care for Multi-morbidity (Looman et al., 2021)

4.1.7 Aboriginal Research Perspectives

Western approaches to research have had a long and problematic history with Indigenous communities (Williams et al., 2024). Historically, research conducted on Aboriginal communities has created a rhetoric of negativity and of deficit thinking. Additionally, research has been used to inform policy that has had adverse implications for Aboriginal communities and left a trail of intergenerational mistrust of researchers and research (Heris et al., 2022; Williams et al., 2024). With this legacy in mind, the literature points to culturally safe ways of working with Aboriginal communities, which are discussed here in relation to how this research was conducted (Williams et al., 2024).

From the outset, researchers must consider their role and obligations as researchers (Wilson, 2020). For Aboriginal communities, research is not simply about gaining information from others but about sharing that information (Wilson, 2020). For this thesis, the Wouwanguul Kanja community reference group highlighted the importance of ‘spreading the sunshine’ or sharing knowledge so that it can benefit others. The community agreed that an evaluation process was required to help implement the model of care in other settings. This exemplifies another fundamental concept of working with Aboriginal communities, which is the importance of building genuine relationships. In this research, the community were involved from the inception of the model, having first voiced their concerns about students at YGS through a community consultation process and then being involved with the design of the model and its evaluation, which is described in Chapter 6.

Another important consideration when working with Aboriginal communities is the involvement as well as capacity building of Aboriginal researchers (Ewen et al., 2019). An Aboriginal researcher was part of the research team and was integral during the qualitative component of this study. This researcher was also able to learn new skills during the research process, including how to interview participants, with support from a senior researcher, thematic analysis and interpretation of findings.

Other important concepts to guide how researchers work with Aboriginal communities include the need to work in partnership, be flexible, take time to get to know the community, and reflect on privilege and power imbalances (Jamieson et al., 2012; Thomas et al., 2011; Wilson et al., 2020). In this research, the community paediatrics department had pre-existing relationships with the Aboriginal community that had been formed over many years and, more specifically for this research, had worked alongside the community to develop the model of care. This degree of connection with the community lent a genuine sense of engagement in the research process as well as reciprocity and relational accountability (Williams et al., 2024).

4.1.8 Ethical Considerations

4.1.8.1 Compliance with the National Statement of Ethical Conduct

This research was designed in keeping with the National Statement on Ethical Conduct in Human Research 2007 (updated 2018) (National Health and Medical Research Council, 2007). In terms of research merit, the concept of integrated partnerships between health and education had many potential benefits, including contribution to knowledge, understanding and improved outcomes for children. These potential benefits were based on a thorough review of the existing literature and discussion with partners from the education and health sectors as well as the community. The design of the research ensured that respect for the participants was not compromised, particularly because children and the Aboriginal community were involved.

In the qualitative arms of the study, experienced researchers conducted interviews and de-identified the data collected. An Aboriginal researcher was part of the team conducting interviews and analysing data. Written participant information sheets that outlined the research process and the risks and benefits to the participant were provided (see Appendix A: Participant Information Sheets). Written consent was also obtained (see Appendix B: Consent Form).

The research was conducted with integrity, respect and honesty, and a commitment to searching for knowledge and understanding by following recognised principles of research conduct. The research team were responsible for designing the study to minimise the risks of harm or discomfort to participants, clarifying for participants the potential benefits and risks of the research, and the welfare of the participants in the research context (National Health and Medical Research Council, 2007).

4.1.8.2 Addressing Ethical Issues

I was a clinician and researcher in this study. In 2016, I was asked by the Director of Community Paediatrics at Croydon Community Health Centre to work with the team at YGS to develop a multidisciplinary school clinic. The Aboriginal community emphasised the need to provide a holistic model for students attending the school because of the nature of CBD, which was associated with negative outcomes.

As the lead paediatrician involved in its inception and ongoing delivery of services, it was important for me to ensure that the clinical and research components were acceptable to the stakeholders involved. To ensure that this was the case, a community reference group was formed. This was called the Wouwanguul Kanja committee, which is a name derived from the Dharawal language whose meaning combines the concepts of health and learning. This committee consisted of elders within the local Aboriginal community as well as the principal, social worker and school counsellor from YGS, and me. The group oversaw the development of the clinic as well as the research objectives and methods. Terms of reference were documented, and the group met regularly to chart the progress of the clinical and research components of NS. This was in line with the Aboriginal Health and Medical Research Council guidelines, which stipulate that research involving Aboriginal communities needs to provide a net benefit for Aboriginal people and communities, that there is Aboriginal community control of the research, that the research is conducted in a culturally sensitive manner, that any costs incurred be reimbursed, and that the research activities will enhance Aboriginal skills and knowledge (Aboriginal Health and Medical Research Council of NSW, 2023). Ethics approval was received from the following committees: the Sydney Local Health District Human

Research Ethics Committee, the Aboriginal Health and Medical Research Council and the NSW State Education Research Applications Process.

Because I am a clinician-researcher, there was a risk of data becoming identifiable to me. This risk was mitigated for each of the three phases of this research study as discussed below.

4.1.8.2.1 Phase 1: Quantitative Study

For the quantitative phase, about 100 students were in the database prior to analysis. To ensure confidentiality and privacy, two linked databases were formed, one that included identifiable data such as names and contact details, and a second database that contained de-identified data. For the quantitative data analysis, only the de-identified database was accessed, and these data were collected in an aggregated form. It was thus not possible to identify individual participants form the information accessed.

4.1.8.2.2 Phase 2: Qualitative Study

The qualitative analysis was conducted in two parts. Phase 2a was completed in collaboration with a Centre for Disability Research and Policy (CDRP) research team at the University of Sydney. The team used semi-structured interviews with students, staff and community members, to understand:

1. the critical elements of the YGS multidisciplinary model of education
2. the facilitators and challenges of developing and operating a multidisciplinary model of education
3. the critical elements of the YGS model that could be adopted or adapted for education, health and policy settings.

The above research was designed primarily to understand the place of YGS and its model of education delivery in managing CBDs. So, while the health aspect of NS formed a component of the overall education model, the researchers did not describe the clinical model of care in detail, nor was there a focus on the aspect of the partnership between the health and education sectors. To understand these components, I conducted a secondary analysis (Phase 2b) of the data collected in Phase 2a. The data were provided to me by the CDRP team in a de-identified format.

For the secondary analysis, the following ethical issues were considered. First, because I was a clinician at NS, there was potential for data from staff members and stakeholders to become de-identified by me. This risk was mitigated by including multiple participants who had been involved at various time points. For example, the NS clinic was established in 2016, and in that time, there had been staffing changes, including two years when a locum paediatrician was part of the clinic. Second, I was not involved with clinical activities at NS when the qualitative study was being conducted. There was thus a low risk of ascertaining which staff members had consented to participate in the study. Third, the secondary analysis included data received from stakeholders. Since there was no clear power differential among stakeholders and me, this aspect was considered a low risk.

4.1.8.2.3 Phase 3: Implementation Study

Phase 3 of this study involved understanding how the NS model of care could be replicated at other sites. Semi-structured interviews were conducted to understand the expectations of stakeholders at these sites as well as barriers and facilitators to successful implementation. Three groups were studied. They included two schools and a CoP consisting of various stakeholders across NSW. In one of the schools, the paediatric doctors involved initially were no longer at the site and I had participated in the SBHC program for one year. In the second school, I was not a clinician at the SBHC program and was not involved in any face-to-face meetings with stakeholders. For data collection with the CoP, there did not appear to be a power differential so this aspect was considered low risk. The mixture of scenarios represented was thought to produce a varied degree of experiences to add depth to the understanding of how this research could be implemented in urban and rural sites across NSW.

4.1.8.3 Insider Research

Insider research is relevant to this body of research. Insider research refers to research being conducted within a social group, organisation or culture of which the researcher is also a member (Sikes and Potts, 2008). In contrast, outsider research is research undertaken by those who do not have prior knowledge of the community or subjects being studied (Chavez, 2008). Insider versus outsider research can be conceptualised as a continuum whereby the positionality of the researcher evolves during the research process (Chavez, 2008; Dwyer and Buckle, 2009; Greene, 2014). For example, an outsider researcher may know very little about the subjects being studied at the start of the research, but as they become more involved they gain more insider knowledge (Chavez, 2008; Trowler, 2011).

Positionality refers to where the researcher stands in relation to what or who is being studied. This is influenced by the cultural values and norms of both the researcher and the participants (Cayir et al., 2022; Merriam et al., 2001). Insider researchers may be total insiders, meaning that they share profound similarities with the community they are studying, or partial insiders, who hold a degree of detachment from the community (Chavez, 2008). As the lead researcher and lead paediatrician involved with NS, I was simultaneously the researcher and a subject being researched. Overall, my involvement was akin to that of a partial insider because my experiences and role differed from those of others involved in NS. Great care, though, was taken to ensure that the trustworthiness of the data was maintained and that potential bias as a result of insider status was minimised (Greene, 2014). Several techniques have been described in the literature to establish credibility with insider research (Lincoln et al., 2011), including the following criteria: credibility, transferability, dependability and confirmability (Guba, 1981). Table 4.1 describes how credibility was established in this body of research (Guba, 1981; Lincoln et al., 2011).

Table 4.1: Techniques Used to Establish Credibility in This Insider Research

Technique	Technique Description	Utilisation of Technique in This Research
Prolonged engagement	Investing sufficient time to learn about the subjects and setting, allowing the researcher to reflect on their positionality, and to build trust.	Involvement with clinical and research processes over almost a decade. Ongoing reflections and discussions with the Wouwanguul Kanja community reference group.
Persistent observation	Identifying the most relevant information pertaining to the subject being researched.	Data collected from various participants in different settings. Thematic analysis of data collected.
Triangulation	Use of multiple sources, methods, investigators and theories to formulate ideas and conclusions.	Mixed-methods approach used. Regular reflective discussions with supervisory team, other researchers and community reference group (Wouwanguul Kanja). Several theoretical frameworks, including critical realism and the Integrated People-Centred Health

Technique	Technique Description	Utilisation of Technique in This Research
		Service framework influenced my interpretation of findings.
Peer debriefing	Sharing of findings and hypotheses with peers or colleagues to generate critical thinking about issues encountered.	Regular meetings with supervisors and research team that involved reflections and discussion of findings. Detailed written and electronic records of these meetings.
Negative case analysis	Process of revising and refining hypotheses based on information gathered.	Detailed review of data collected in accordance with ongoing literature reviews and peer or supervisor discussions.
Referential adequacy	Gathering other reference material to compare against data analyses.	Thorough and ongoing literature reviews.
Member checking	Engaging participants in verifying data.	Participants able to revise transcripts of their interviews.
Transferability	Detailed note taking to understand the setting and context.	Field notes were taken throughout the research process. Emails and minutes from meetings were kept.
Dependability	Independent auditing.	Detailed written and electronic notes and data available.
Confirmability	Independent auditing.	Detailed written and electronic notes and data available.

There are benefits to insider research. They include timely access to participants, circumventing the need to acclimatise or orient to the study conditions, and allowing for more natural and comfortable interactions to be formed (Asselin, 2003; Chavez, 2008; Greene, 2014; Merriam et al., 2001). Insider researchers often have pre-existing knowledge about the social, historical and practical context of the research, which allows them to delve deeper into the issues encountered, often producing a more truthful and authentic account of the research findings (Asselin, 2003; Chavez, 2008; Merriam et al., 2001). Furthermore, by belonging to the group being studied, the researcher holds a degree of legitimacy, which leads to acceptance and openness by participants (Asselin, 2003; Berkovic et al., 2020; Dwyer and Buckle, 2009). The counterargument to this is that subjects may withhold information because of concerns about how it may affect future interactions (Greene, 2014).

Issues raised during insider research include confidentiality and power dynamics. The insider researcher can become privy to confidential information about colleagues or the institution under study (Chavez, 2008). During the research process, data were carefully de-identified to maintain privacy. Furthermore, interviewees were able to read and edit their de-identified transcripts before the data were analysed (see Section 4.2.2.3). In terms of power dynamics, there was a possibility of a perceived power imbalance between participants and myself (Asselin, 2003). For this reason, and after discussion with the supervisory team, it was decided that Phase 2 would be conducted by an independent research team (CDRP) and that I would conduct a secondary evaluation of the de-identified data (Phase 2b). For Phase 3, it was decided that because implementation of SBHC was an evolving area involving stakeholders belonging to a CoP, there was less of a power imbalance and so I was able to conduct these interviews (Greene, 2014).

A significant issue pertaining to insider research is a loss of objectivity. The close relationship between the insider researcher and the subject matter can lead to assumptions being made based on prior knowledge or experience (Asselin, 2003; Greene, 2014). This was avoided in Phase 2 by having the CDRP conduct interviews, while in Phase 3, I had a much lower degree of prior involvement with the participants and an interview guide was used to minimise bias (see Appendix C: Interview Guide) (Asselin, 2003; Chavez, 2008). Reflexivity was an important technique employed throughout this research process to improve objectivity. Reflexivity is a process whereby the researcher takes a considered approach to understanding how their background and values influences the research process (Bourdieu and Wacquant, 1992; Chavez, 2008; Van Heugten, 2004). In this research, my reflexivity was developed by keeping a diary of events, thoughts, ideas and external perspectives (Greene, 2014). Additionally, a reflexivity statement can be found at the beginning of this thesis.

4.2 Methods

4.2.1 Phase 1: Quantitative Study

4.2.1.1 Study Design

A retrospective cohort design was used. Participants were students seen at NS, located at YGS in metropolitan Sydney, between 2016 and 2019. Data were collected from existing medical records of clinical assessments, de-identified and analysed.

4.2.1.2 Participants

All students seen at NS had data collected as part of their routine care. The model of care is described in detail in Chapter 6. In brief, students were referred to YGS from a mainstream school because of their problematic externalising behaviour. If assessed as being appropriate for placement at YGS, the student proceeded to enrolment when a place became available. Students and families were then offered a multidisciplinary clinical assessment at NS and participation was voluntary.

4.2.1.3 Outcome Measures

Details of available data pertaining to outcomes of interest are summarised below and in Table 4.2.

4.2.1.3.1 Demographics

Demographic details collected included the child's age, gender, ethnic background and primary language spoken.

4.2.1.3.2 Service Features

Service features included engagement with a paediatrician or mental health service, and previous or current open case with child protection services (NSW Department of Communities and Justice).

4.2.1.3.3 Health and Social Characteristics

Data on physical health and social characteristics that were recorded in the medical records of clinical consultations were extracted. Previous and new concerns or diagnoses were evaluated as well as recommendations or referrals made after attending NS.

4.2.1.3.4 Socio-emotional Wellbeing

The SDQ was used to measure SEWB (see Appendix D: Strengths and Difficulties Questionnaire) (Goodman, 2001). The SDQ consisted of 25 questions, and a computerised algorithm was used to predict the risk of a disorder in the following five subscales: conduct problems, emotional problems, hyperactivity or inattention problems, peer relationships, and kind and helpful behaviour. An overall score and risk prediction was made for total difficulties and the impact of the behaviours (Goodman, 2001). Details of the validity of the SDQ can be found in Section 2.9.2.1.

The SDQ was completed by parents, teachers and children aged 11 and older. The SDQ was collected at the initial visit and when the child or adolescent returned to their home school on a full-time basis. This was because students returned to their home schools at varying times according to their individual progress. In general, this was between 6 and 12 months after enrolling at YGS.

Table 4.2: Summary of Outcome Measures

Demographics	Service Features	Health and Social Characteristics	Social and Emotional Wellbeing (pre- and post-intervention)
Date of birth	Failure to attend (FTA)	Referral Reasons	SDQ teacher (4–17 years old)
Gender	Reasons for FTA	Physical Health Medical review	SDQ parent (4–17 years old)
Preferred language	Cancellations	Examination Hearing screened	SDQ self (11–17 years old)
Interpreter required	Reasons for cancellations	Vision screened Dental screen	
Ethnicity Aboriginal/Torres Strait Island Background	Other services/agencies involved Paediatrician Mental health Allied health Child protection Social care Other	Previous Concerns/Diagnoses New Concerns/Diagnoses	
	Engagement with named services/agencies (engaged/partially engaged/not engaged) Paediatrician Mental health Allied health	Investigations Blood tests Urine tests Radiology	

	Child protection Social care Other	Recommendations

4.2.1.4 Data Collection

De-identified data were collected from a password-protected electronic medical database used by SLHD. The collected data were then stored electronically, using Research Electronic Data Capture (REDCap). REDCap is a secure web-based application to support data collection for research studies (Harris et al., 2009). Critical REDCap security components involve user authentication and role-based security. More specifically, the User Rights tool ensured that all survey data entered were confidential and secured, so that project administrators could restrict access to certain data from research personnel. Survey forms were also only accessible to users that had been granted survey access privileges.

4.2.1.5 Data Analysis

Data were exported from REDCap into SPSS Software in a de-identified format for analysis. Descriptive statistics (proportion, mean, standard deviation and range) were used to characterise the population attending NS, and the range of physical health, mental health and SEWB conditions they presented with. Differences in the diagnostic characterisation of individuals before and after clinic attendance were investigated. The proportion of students requiring onward referrals was also evaluated. Changes in SDQ scores over time, where available, were assessed for statistical significance after assessing for normality of distributions. Significance was defined as $p < 0.05$.

4.2.1.6 Limitations

A limitation of this study was not having a control group for comparison with. This was because all the students attending the school were enrolled as a result of problematic externalising behaviour. Given that these students were at high risk of negative health, educational and social outcomes, it was considered unethical to offer the intervention to randomly selected children. Furthermore, this approach was not acceptable to the community steering committee (Wouwanguul Kanja committee) who oversaw the initiative.

4.2.2 Phase 2: Qualitative Study of Ngaramadhi Space

4.2.2.1 Study Design

Phase 2 of this research study was qualitative and designed in collaboration with the CDRP research team to avoid bias associated with insider research. The CDRP research team conducted semi-structured interviews with key stakeholders. These included members of the Wouwanguul Kanja community reference group, leaders and staff from the education sector and health sector, and students from YGS and their parents or caregivers (see Table 4.3).

Table 4.3: Anticipated and Actual Numbers of Study Participants for Phase 2 and Phase 3

	Participant Group (Abbreviation)	**Actual Participants/Anticipated Participants**
Ngaramadhi Space (NS) and Yudi Gunyi School (YGS)	School Principal	1/1
	School Executive	2/2
	School Teacher	6/7
	Social Worker	1/1
	Occupational Therapist	1/1
	Speech Pathologist	1/1
	Paediatrician	1/1
	Aboriginal Community Member	2/3
	School Student	3/5
	Parents/Caregiver	0/4
School A	School Counsellor	2/2
	Social Worker	2/2
School B	School Principal	1/1
	School Counsellor	1/1
	Paediatrician	1/1
Community of Practice (CoP)	Director of Community Paediatrics	1/2
	Rural General Practitioner	1/1
	Director of Non-Governmental Organisation	1/1
	Researcher	1/2
	Total number of participants	**29/39**

4.2.2.2 Participants

4.2.2.2.1 Members of the Wouwanguul Kanja Committee

The Wouwanguul Kanja steering committee was led by Aboriginal community leaders. Decisions and developments were guided by the committee. Therefore, the perspective of this group was considered integral to the evaluation.

4.2.2.2.2 Leaders and Staff

Leaders and staff from both the education and the health sectors played an important role in designing the model of care. This group was interviewed to understand how the model evolved over time, as well as the facilitators and challenges of development and implementation of the initiative.

4.2.2.2.3 Students and Families

The perspective of students and families accessing NS was relevant in understanding how acceptable the model of care was. Aboriginal students and their families provided essential input about the cultural responsiveness of the model.

4.2.2.3 Interviews

Participants were contacted by the school's social worker and provided with written information about the research, where it was clearly stated that participation was voluntary and that all information gathered would be confidential (see Appendix A: Participant Information Sheets).

Interviews were conducted in person if possible and via videoconferencing as needed. Interviewees were permitted to have a support person present during interviews. An Aboriginal researcher was part of the interviewing team. The interviews were semi-structured. They followed a structured set of questions but allowed for elaboration of information shared during the interview (see Appendix C: Interview Guide). Interviews were audio recorded with the written consent of research participant (see Appendix B: Consent Form). Recordings were transcribed by a secure Australian-based transcription service that complied with Australian privacy legislation. Transcripts were securely stored in a password-protected shared drive accessible only to the research team. Participants were able to review and amend their interview transcripts. Most staff members reviewed their transcripts but the students elected not to.

4.2.2.4 Analysis

The CDRP de-identified data before providing it to me. Thereafter, Braun and Clarke's (2006, 2022) thematic analysis framework was used to develop an understanding of how the education and health sectors could work in partnership. After each interview was read, a reflective process was undertaken through note taking to identify emerging themes (Patton, 2014). De-identified data were manually coded using NVivo qualitative data analysis software to identify common themes within the data. Dr Liu and I held in-depth discussions after the initial thematic analysis to triangulate and reach agreement on emerging findings. Following a critical realist approach, abductive and retroductive reasoning was used to then identify themes within the IPCHS framework (World Health Organization, 2016). The next stage of analysis involved further triangulation, abductive and retroductive reasoning to align these themes with Looman's implementation strategies (Looman et al., 2021). Themes were presented in various forums for deliberation and revision. These forums included stakeholders from the education and social sector as well as school health working groups and collaborators from the Australasian School-Based Health Alliance (n.d.).

4.2.2.5 Data Security

De-identified data were stored in a password-protected secure location at the University of Sydney. Only members of the research team had access to this information.

4.2.2.6 Limitations

Special consideration was taken by the CDRP team to ensure the safety and comfort of the students involved. All researchers provided their Working with Children Check number (NSW Office of the Children's Guardian., n.d.). The researchers had extensive experience working in education settings, including with young people who had experienced trauma and Aboriginal young people.

The risk of students having a limited understanding of the research process was mitigated by testing the readability of participant information sheets (see Appendix A: Participant Information Sheets) with various students. Researchers were available to answer questions or queries, and all students under 18 years of age required family consent to participate in the research. The requirement for parental consent was for the purpose of the research study and differs from that of clinical practice, which gives students aged 12 and over the option of being seen on their own or with their parents, carers or support persons present.

To address the risk that Aboriginal students may not have felt culturally safe with a non-Aboriginal researcher, Aboriginal students were offered the option of completing the interview with an Aboriginal researcher and/or with a support person of their choice. Two students who participated acted as each other’s support person. Two social workers elected to be interviewed together. Most participants were comfortable being interviewed without a support person.

4.2.3 Phase 3: Qualitative Study of Implementing the NS Model of Care in Other Settings

4.2.3.1 Study Design

Phase 3 of this research design investigated how the NS model of care could be implemented in other educational settings. The model of care used at NS had been replicated in four other schools. A research assistant who was not involved with the clinical aspect of the work approached these four schools to invite them to participate in the research. The first two schools that agreed to participate were included in the study. Participants were also recruited from a CoP within NSW. Participants from schools included paediatricians, school counsellors, school principals and social workers, and the CoP included stakeholders from across NSW (see summary in Table 4.3).

4.2.3.2 Participants

Participants from the education sector, health sector and CoP played an important role in understanding how SBHC models of care could be implemented in other settings. This group was interviewed to understand how the model of care was implemented in different communities, as well as the facilitators and barriers to this process.

4.2.3.3 Interviews

Participants were contacted by a research assistant and provided with written information about the research (see Appendix A: Participant Information Sheets). This written information clearly stated that participation was voluntary and that all information gathered would be confidential.

Interviews were conducted in person if possible and via videoconferencing as needed. Interviewees were permitted to have a support person present during interviews and could choose to be interviewed on their own or as a group. I conducted the interviews using a semi-structured approach (see Appendix C: Interview Guide). Interviews were audio recorded with the written consent of the research participant (see Appendix B: Consent Form). After each interview, a reflective process was undertaken through note taking to identify emerging themes (Patton, 2014). Recordings were transcribed by a secure Australian-based transcription service that complied with Australian privacy legislation. Transcripts were securely stored in a password-protected shared drive accessible only to the research team. Participants were able to review and amend their interview transcripts, which all completed.

4.2.3.4 Data Analysis

Braun and Clarke's (2006, 2022) thematic analysis framework was used to develop an understanding of how the model of care could be implemented in other settings using de-identified data. As in Phase 2, coding was manually conducted using NVivo qualitative data analysis software. After the initial thematic analysis, Dr Liu and I held in-depth discussions using triangulation, abductive reasoning and retroductive reasoning to identify themes within the IPCHS framework and emerging strategies around implementation (Looman et al., 2021; Meyer and Lunnay, 2013; World Health Organization, 2016). In addition, themes were reviewed with stakeholders from the education and social sectors as well as school health working groups and collaborators from the Australasian School-Based Health Alliance (n.d.).

4.2.3.5 Data Security

De-identified data were stored in a password-protected secure location at the University of Sydney. Only members of the research team had access to this information.

4.2.3.6 Limitations

I was the lead researcher and a clinician involved in implementing SBHC programs. This may have led to bias during interviewing. Therefore, the interviews were semi-structured, and open-ended questions were used if possible. The risk of bias was further mitigated by selecting schools at random and using the strategies outlined in Section 4.1.8.

PART B: RESEARCH FINDINGS

In Part B, the research findings as related to the goals and objectives of this thesis are presented through five published articles. The first two articles relate to Objective 1 and explore the cultural, social and historical factors associated with CBD within Australia through a yarn with Aboriginal elders and a commentary article (Chapter 5). Chapter 6 relates to Objective 2, and the development of NS model of care is described through a published article. In Chapter 7, which relates to Objective 3, the characteristics and needs of students attending NS through a quantitative study are described. Objectives 4 and 5, which were about understanding the facilitating factors and barriers to developing and implementing the model of care, are discussed through a published article in Chapter 8.

Chapter 5 Childhood Behavioural Disorders in the Context of Aboriginal Culture within Australia

5.1 Introduction

In the research presented in this thesis, SBHC programs were studied to understand how the model could improve outcomes for children experiencing CBD. However, before considering SBHC models in more detail, the historical and societal context behind a diagnosis of a CBD first needs to be examined as part of a critical realist approach (Objective 1). This chapter presents two publications that explore the origins of childhood and CBDs in the context of Australia's history. The first part (Part 1: 'Not Just Using the Words') is a conversation, or a yarn, with Aboriginal community leaders about what behavioural problems in childhood mean to them. The second part (Part 2: Historical and Social Context) discusses how the concept of CBDs originated, how the diagnostic criteria for CBDs has evolved and the limitations associated with such criteria. This is followed by a discussion about the impact of colonisation and CBD diagnoses on Aboriginal communities. These concepts lay the foundation for contextualising the significance of CBDs within an Australian setting and provides a pathway for understanding why co-design and consultation with the community is necessary when building integrated care solutions such as the NS model of care.

5.2 What Does the Term Childhood Behavioural Disorders Mean in the Context of Aboriginal Culture within Australia? Part 1: ‘Not Just Using the Words’

Citation

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REVIEW ARTICLE

What does the term childhood behavioural disorders mean in the context of Aboriginal culture within Australia? Part 1: 'Not just using the words'

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The meaning of childhood behavioural disorders (CBD) shifts in different settings. This article is the 3 first in a series of two that explores this concept and how culture shapes its meaning. This first article 4 is a conversation. A yarn with Aboriginal community leaders about what behavioural problems mean 5 to them. The second article discusses how the concept of CBD originated.

Key words: Aboriginal social and emotional wellbeing (SEWB); childhood behavioural disorders.

The meaning of childhood behavioural disorders shifts in different settings. This article is the first in a series of two that explores this concept and how culture shapes its meaning. This first article is a conversation. A yarn with Aboriginal community leaders about what behavioural problems mean to them. The second article discusses how the concept of childhood behavioural disorders originated.

Uncle Terry (Terry Denzil), Aunty Deb (Deborah Daley) and Vanessa (Vanessa Edwige) are proud Aboriginal community members from the Redfern/Waterloo community of inner Sydney. Aunty Deb is an Aboriginal Education Officer at a local school and Vanessa is a Senior School Psychologist. Here they share with us the importance of understanding Aboriginal culture and history before making diagnoses of behavioural disorders and why partnerships with the community are integral to the healing process.

Let us begin by acknowledging the traditional custodians of Australia:

> The author acknowledges the Cadigal, Wangal and Bediagal people as the traditional owners and custodians of the land on which we serve.
>
> We pay respect to the Elders past, present and future for they hold the memories, traditions, cultures and hopes of the Aboriginal and Torres Strait Islander peoples in our community.
>
> We acknowledge that their story began long before ours and we thank them for generously sharing their lands, culture and knowledge with us.
>
> We accept that it is our responsibility to ensure that their voices are heard.

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Having a Yarn: Just Change One Thing…

FACILITATOR: Growing up, what was childhood like for you?

AUNTY DEB: Well, we all had a job to do. You know, when you're all in the family, you always had a job to do. I'm the second oldest out of 11 children, you know? And my job is that I always helped my mother. And that was at a young age.

UNCLE TERRY: We relied on family.

AUNTY DEB: Yeah, family. You know, yes, we did work, you know, and we had to work. You had to help your mum and you dad. You helped – because my dad helped all of these uncles and aunts as well, and I didn't notice until later in life that he always helped. Yeah, as an Aboriginal person, you have a lot of responsibility. If you're elders in your community, you've got a lot of responsibility.

UNCLE TERRY: Yeah. I think what's happened over a long period of time with colonisation and things like that, the actual fact of what Aboriginal people did with their families and their communities has changed a hell of a lot.

AUNTY DEB: Yeah, that's right.

UNCLE TERRY: As a child, I was raised by a single parent. But look, I did have a grandfather and three – or two aunties and a couple of uncles. It wouldn't have been possible for my mum to go to work, right? Now, I'll give you an example of that. She was born in 1920, left school, could've gone to Sydney Girls High but no one had a florin, which was 20 cents a week to help her get there. So, for a half penny in the tram she went to Maroubra Junction. We lived in Surry Hills. When she applied for a job, she was told, in no uncertain terms, she wouldn't be educated enough because she lived in Surry Hills and the fact that she was Aboriginal, right? But when she retired from work, she was the manageress of the Health Commission's Credit Union.

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And the reason she got her first job was that they said, where do you live? She said, Coogee and she was South American. So, you have to lie to get to the position where you want to be. And that in itself says to you, this is wrong. That has changed a lot. Of course, in New South Wales more and more children and adults are identifying today with Aboriginality. But there was a case where you denied it otherwise you never got on in life. Too many people that I know, said, no, I'm not Indigenous at all. So again, that begins the trauma of the younger people because they don't know who to identify with from the very beginning.

VANESSA: My thoughts – you know, in my experience, we're just seeing a lot of diagnoses of Aboriginal kids, particularly with ADHD (attention deficit and hyperactivity disorder), which…

UNCLE TERRY: Yeah, they'll over diagnose, won't they?

VANESSA: Oh yeah, totally, which really concerns me. I mean the trauma symptoms look very similar to the symptoms that meets the diagnostic criteria for ADHD. So, I think a lot of that gets misdiagnosed. But also, I wonder why pretty much every Aboriginal child can end up with a diagnosis of ADHD. And I question whether we're understanding the concept of, you know, of parenting. That we are not acknowledging the different parenting styles and the different ways that Aboriginal children are brought up. And that it's not that kind of, sit down, learn your times tables, way of learning. It's more of an exploratory style of learning and following, being in the context of the community and being allowed to run around and do things knowing that the community is looking after you.

So, I worry about those kind of – we're missing the sociological aspects of what it means to be an Aboriginal child in the context of an Aboriginal community. And in education, we're expecting kids to be sitting down and doing this and doing that. But we're not playing to the strengths of Aboriginal kids and how they've been brought up. And you know, that concerns me because I think historically, Aboriginal kids were living in communities. They were going out with their mums and dads doing various things. There wasn't that confinement. Now we find that their confinement is being looked at from a behavioural point of view.

I mean, you know, because we're always looking at the deficit, isn't it? Your kid can't sit still, your kid can't hold a pencil. I mean, it's about what the family values, isn't it? And those values are potentially not the values of a lot of Aboriginal households. And maybe they don't have access to sitting at a desk …

UNCLE TERRY: No, they don't.

VANESSA: All those social determinants, like inadequate housing, poverty and not having the right equipment you know? And I think Aboriginal parents feeling very ostracised from schools because they think that they're not meeting the children's needs, but they really are…

AUNTY DEB: Yeah, that's right.

UNCLE TERRY: Ness, how many parents over the years have said to you, I've had a bad experience at school?

VANESSA: Oh, I'd be a billionaire.

UNCLE TERRY: Because unless we help them fix that problem in the beginning, then we have very little chance of fixing it with the next generation. Because it's a mindset that's implanted within the family, and it's very difficult to overcome it.

VANESSA: Yep, that's right.

UNCLE TERRY: Growing up in Surry Hills, we had all sorts of people from different cultures because of the end of the second world war. And the one thing that everyone had in common, were they were poor. So, that made that community lock themselves together. But outside of the suburb, most of those people were all ostracised because they come from a certain area. Those people got damaged badly and we're still dealing with that sort of problem that happened, you know, like 60 years ago.

VANESSA: Yeah, those historical legacies live on, and they live well.

And I think the problem with diagnoses is that there tends a bit of blame attached to it. Like Fetal Alcohol Syndrome. It really deposits the blame on the parent and yet we know that's not true. Their experiences, social exclusion and all those kind of things, the list is endless. So, I think when you kind of diagnose kids with, like, conduct disorder the blame is on the parent, and that's how they internalise it. I think there needs to be a shift away from this. Unpacking it to take the blame off the parent and centring the parent as the expert in the child's life and that they are part of the treatment plan to, you know, improve outcomes for their own child.

UNCLE TERRY: Well, when they're making a diagnosis on a child, one of the first things they should ask the parent is, can you give us a bit of a history about the family life. You know, just a simple thing like just – a little short history of your family life.

VANESSA: Yep.

UNCLE TERRY: And then that doctor could say, well, you've obviously had a lot of trauma in your life, so it's impacted on your child so we can look at it in a different angle. But time and time again, the child is looked at, a diagnosis is made but there's no looking into the past of what's happened to that child.

AUNTY DEB: Well, it all goes back to colonisation- it'll always go back to colonisation.

UNCLE TERRY: Yeah, that's right.

AUNTY DEB: It's from the beginning, you know? We got – we're still not even recognised in this country. And – you know, and it's easy to put a label on a kid. We can see a lot of kids now that's coming to school, and we know their families. And how they want Aboriginal people to be like white fellas to rear their children up in a white society, you know? Instead of saying, you can still be Aboriginal and continue culture practice and everything. Like to be proud of who you are as an Aboriginal person, as an Aboriginal parent, you know?

UNCLE TERRY: I'll give you an example. There was one young bloke, and he was diagnosed and he was on pills for ADHD. And I sat down with him on about half a dozen occasions, and I said to the boss at the time, I said, mate, this kid hasn't got a problem with ADHD, he's the greatest con man I've ever seen in my life. And I said, what we should be doing is find something that he's going to like. So, I got him work experience with a real-estate agent. When he left that school in year 10, Ray White employed him, all right? He's still there and what, 2 years ago, he got the real estate award for the young improver for selling so many. And I said, it's identifying his position in life. He was a con man, and he had to be dealt with.

VANESSA: But, you know, all the evidence shows we are not intervening early enough– in terms of a therapeutic wrap around support. Whereby, you know, parents are assisted with all aspects of their life. Talking about the cost to society of out-of-home care. And then the trajectory into the juvenile criminal justice system. Like, the cost is billions, you know? And yet, we can't seem to

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manage to put the money into preventative culturally responsive and culturally safe ways of working with Aboriginal families. It just makes no sense to me at all.

Because not only is it cost effective, but it's also about the maintenance of cultural integrity, you know? And so, it's about decolonising the systems that are putting these Aboriginal kids in those placements and in, you know, those juvenile justice settings. And I think, I hope it happens in my lifetime, but you know…

FACILITATOR: Are there any ways you would describe behavioural issues in children?

AUNTY DEB: Well, that's how education identifies. You have to say behaviour. The way I always say to all the teachers at school, just think about what child has come from– before he got here. And you can't say that's behaviour. And you gotta change people's mindsets so they're not just thinking about using the words all the time. Using the words, think about something else that we can use.

VANESSA: But it comes down – again, it comes down to this system, you know, it's systemic racism…

AUNTY DEB: That's right. Yep.

VANESSA: Schools have no other choice but to potentially refer a child to a behavioural school because they don't have the financial resources. So, that goes back to this economic situation whereby we're not investing in that preventative and therapeutic web of support for kids. And so again, in our system, the only way to get a child funding is if you've got a diagnosis.

AUNTY DEB: Yes, that's exactly right.

VANESSA: So, you know, you're up against it all the time because at the end of the day, you want to get that child support. The only way to get that child support is to go through this archaic process…

AUNTY DEB: Yeah. Things only get better if you've got staff who are passionate about Aboriginal education and passionate about Aboriginal kids. Yeah, but it shouldn't be unique, it should be the normal. Every Aboriginal child in this country has a right to go to their local schools, not pawn them off to another school or a behaviour school. You know, like we have to go through the whole system like Vanessa is talking about. Access request and this and he goes off to a behaviour school. Now, have we met his needs? No, we haven't. We've already labelled him.

FACILITATOR: If you had a magic wand and you could have things exactly how you wanted it, what would you want?

UNCLE TERRY: Well, I reckon if we listened more and heard what they were saying. And then work a way around it to say, we can help you in this situation or I can send you to someone that could help. I would send you to an Aboriginal organisation – or for any culture for that matter – I would love to say that this support is going to be with you for the long term. And that on a constant thing to help you get through all these barriers they are put in front of you all your life. And I think the physical contact of someone…

AUNTY DEB: Aboriginal people like face to face.

VANESSA: But the only thing I would add to what Uncle Terry said is, the concept of a one-stop shop is really important. So, you know, we've got to recognise that a lot of Aboriginal parents don't have access to transport…

AUNTY DEB: No, that's exactly right.

VANESSA: …you know they're trawling, four kids some days or five with them. They want things fixed then and there you know?

AUNTY DEB: Not tomorrow.

UNCLE TERRY: No.

AUNTY DEB: Or yesterday.

VANESSA: Being able to access people like paediatricians on site. We need psychologists on site, social and emotional wellbeing workers and housing or Centrelink workers. We need more Aboriginal people employed as the face of the schools as well. From the canteen to teachers to principals.

UNCLE TERRY: 'Community' centres.

AUNTY DEB: Yes. But it's all about the system. The system in this country is failing Aboriginal people.

UNCLE TERRY: Yeah, so I mean, it's wrong. And so, when you start with a wrong, it's very hard to go forward all the time. It's really hard.

AUNTY DEB: And like I say to you all the time, I said, we only make up 2% of this country; we don't have a voice. We don't have a voice, they're our voice.

UNCLE TERRY: We make up 2% and yet we're – the largest percentage of our mob is in jail.

AUNTY DEB: In jail. And that's from juvenile into jail. It is a system that we're fighting all the time.

You know, people have got to feel comfortable in going to there. You've got to make a good strong communication with those families. And if you don't have that, everything is going to fail. Where Aboriginal people feel comfortable coming to, somebody's friendly face, you know?

UNCLE TERRY: It's the way you treat people. It might be in the short term, but you've got to be able to do that. And I think that if we have a one-stop shop where the people recognise the people all the time, they see wider community members around the area, it makes them feel more comfortable. And we're on a pathway to fixing some of the problems. Do you agree, mate?

AUNTY DEB: Oh, I do.

UNCLE TERRY: I mean, I wouldn't have been able to get through the last 5 years without this woman saying, how're you going, mate? Are you okay? But having that sort of nature makes it easier for you, whatever you're going through.

And people say, oh, you get over grief, never in a million years. There'd be – something will happen through every day that gives me a reminder of my family life in the past. Yeah, whether it be a song or whether someone says something …

AUNTY DEB: You always think of them.

UNCLE TERRY: Yeah, you always do. So, I mean, but without these people – and that would be what a one-stop shop can do for a lot of people.

AUNTY DEB: That's what you call a community.

UNCLE TERRY: Yeah, it would be…

So, I mean, support by community and with community involvement is so important not just to Aboriginal people, it's so important to every child. And mate, if you make one change…

AUNTY DEB: Yeah, that's right.

UNCLE TERRY: …that's one change you've made.

AUNTY DEB: Yep.

UNCLE TERRY: And that's what you got to be proud of, right?

AUNTY DEB: That's exactly right.

UNCLE TERRY: I'm right.

AUNTY DEB: You know what it is, it's about the conversations that you have with other people.

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UNCLE TERRY: Yes, it is.

AUNTY DEB: That's how you bring about change. That's how you remind them, you've got to remind them, you know, all who you talk to, because it's a chain reaction. Like, how you do acknowledgement of country, you keep on doing that, wherever you go. And you just say, I'd just like to acknowledge the traditional owners of the land and Aboriginal people where we're meeting here today. Just keep on doing that because you've got lots and lots of people who you see and you have conversations with. It's about your conversations, how you see Aboriginal people, you know?

UNCLE TERRY: See, by you doing that it opens up the doorway and it's – you're not asking an Aboriginal person to do it, you are accepting the Aboriginal people around you. And you're recognising…

AUNTY DEB: That Aboriginal people exist on that land wherever you are.

UNCLE TERRY: They are the custodians of our land and you're recognising that.

AUNTY DEB: Having a yarn to you.

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I love reading by Chiray Sun (aged 9) from "A Pop of Colour" art competition, Youth Arts, Children's Hospital at Westmead

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5.3 What Does the Term Childhood Behavioural Disorders Mean in the Context of Aboriginal Culture within Australia? Part 2: Historical and Social Context

Citation

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REVIEW ARTICLE

What does the term childhood behavioural disorders mean in the context of Aboriginal culture within Australia? Part 2: Historical and social context

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Childhood behavioural disorders (CBDs) are a common reason for referral to paediatric services and are associated with negative individual and societal outcomes. This article addresses how childhood became a distinct entity and how historical changes shaped its definition. Thereafter, the evolution of diagnostic criteria for CBD and associated limitations will be summarised. This will be followed by a discussion about Aboriginal culture, and the impact of colonisation on social and emotional well-being. This will provide a contextual frame for understanding how social and cultural context influences diagnoses of CBD in Aboriginal children. From this, a conversation about the journey moving forward will begin.

Key words: Aboriginal social and emotional well-being (SEWB); history of childhood behavioural disorders; mental health.

Childhood behavioural disorders (CBDs) are a common reason for referral to paediatric services.[1] The impact of CBD is significant and is associated with negative educational, employment, personal and relationship outcomes as well as contributing to intergenerational trauma, particularly for people of Aboriginal and Torres Strait Island background (the term 'Aboriginal' will be used hereafter).[2,3]

To understand the concept of CBD this article will address how childhood became a distinct entity and how historical changes shaped definitions. Thereafter, how the diagnostic criteria for CBD evolved and associated limitations will be summarised. This will be followed by a discussion about family life, culture, and the impact of colonisation on the social and emotional well-being (SEWB) of Aboriginal people. This will reveal how the paths of Aboriginal children collided with 'modern' Western concepts of behavioural disorders and the positioning of medical professionals in relation to this. Finally, a conversation about how health professionals can work in partnership with the Aboriginal community for the journey forward will begin.

Key points

1. Definitions of childhood behavioural disorders have been influenced by history, society and medical classification systems.
2. These definitions can collide with how childhood behaviour is viewed amongst Aboriginal people.
3. It is important for health professionals to work in partnership with the Aborignal community to address these issues.

Childhood as a Distinct Entity in Western History

While in the modern era, there is a recognised distinction between childhood, adolescence and adulthood, this has not always been the case.[4] Up until the middle ages, children were generally perceived as being small adults who would often work and have responsibilities.[5] Similarly, adults would participate in children's activities such as games.[6] By the 17th century, the distinction between a child and adult began developing with concepts like mature and immature, and experience versus innocence forming.[7] In many respects, it has been suggested that as the adult world changes so too does the evolution of childhood whereby 'children become children when adults become more adult'.[8]

By the 18th century, Western family life started shifting from a communal structure to a more insular one. There was more value placed on instructing, educating, and nurturing children with behaviour that deviated from the norm often perceived as the result of inadequate parenting.[6,9]

During the 19th century, legislation against child labour was passed. Economic goals saw a demand for children to acquire knowledge and skills to supplement the workforce.[5,10] Thus, compulsory schooling was introduced. This changed societal

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norms dramatically. Children lingering on the streets were seen as a problem that needed to be controlled.[5,11] These views were echoed in a report from the Parkes Royal Commission (1860):

> The streets of Sydney are infested by a large number of vagrant children; … the evidence abundantly shews that a large class exists to whom the possession of parents is of no value in giving direction to their lives, and who are growing up to be an incumbrance and a curse to society.[12]

A new era had emerged. Truancy officers were employed to ensure that children stayed in school. Those children who did not conform to the rules were considered to be disobedient and delinquents.[11] In Australia, these children were called 'gutter class' and 'gutter children'.[11,13]

Parallel to these shifts was a change of focus within the criminal justice system where a rehabilitation approach was taken towards youth rather than a punitive one. Juvenile courts were established and acted under '*parens patriae*', meaning that the state had the responsibility to act in the best interest of the child.[14] This often led to the removal of the child from their home to state institutions including detention centres and industrial schools.[15]

In Australia, the first specialised school for behavioural issues was established in 1913. Based in Melbourne, it was termed a 'School for Feeble-Minded Children'.[13] Subsequently, Travancore School was established in Victoria (1933). It specialised in 'the reception of children who, although mentally defective, are capable of receiving benefit from special instruction'[16] and was staffed by teachers and mental health professionals.[17]

By the 20th century, society was rapidly changing.[4] The 'modern nuclear family' was formed with stereotypical parental roles. These roles were centred on child rearing and protecting children from the harshness of the adult world.[6,9] Heywood discussed how this increased the period between infancy and adulthood and that as a result American youth had been 'increasingly infantilized in efforts to keep them out of the workplace, to repress their sexuality, and to prolong their education'.[9]

During the 1960s to 1970s, divorce rates increased and youth actively remonstrated traditional norms. People re-located for work opportunities, worked longer hours, sought qualifications to secure their positions, and more women joined the workforce.[18] These changes culminated in disrupted connections between families and communities. Parents became increasingly insecure about raising children and began seeking out professionals, rather than family and community, for answers.[4]

Simultaneously, there were rapid developments within the psychological field with a growing understanding of how family dynamics and society influenced the individual.[6,8] Mook stated, 'In our post-modern, overly busy and fast-paced families our children tend to be hurried along and pressured into achievement'.[6] Additionally, adolescents were expected to behave more adult-like, with a lesser degree of adult guidance. Mook argued that this marked a return to a medieval 'levelling' of the adult-child relationship.[6]

Every era is shaped by historical and social influences. This creates shifts in values and expectations, which arguably occurred more rapidly in the last century.[4] When we consider the expectations placed on children, we begin to see how these are a product of the time, and that behaviour and behavioural disorders are less distinct than we may have otherwise perceived. If this is the case, then what becomes of children who do not conform or who resist attempts at dominance and control? Are these children then vulnerable to labels such as a behavioural disorder? Do these labels legitimise channels of power and control over resistance asserted by young people?[4,11]

Classification of Childhood Behavioural Problems

The term CBDs evolved with the development of medical classification systems. In 1853, the first such system was produced by William Farr and Marc d'Espine. It was called the 'International List of Causes of Death in Brussels', and was revised around every 10 years.[5,19]

By the 1930s, a growing demand for non-fatal diseases to be included in classification systems led to the World Health Organization (WHO) producing the International Classification of Disease Six (ICD-6; 1946).[20] While this provided a more comprehensive description of disease, there was a need for a more detailed understanding of mental disorders. In 1948, the American Psychiatric Association (APA) began working on the Diagnostic and Statistical Manual over Mental Disorders (DSM; 1952).[21] Thereafter, the WHO and APA began to work collaboratively so that subsequent versions of DSM and ICD were more closely aligned.[5,19]

Conduct disorders first appeared as subcategories of behavioural disorders in ICD-8 (1969) and DSM-II (1968).[19,20] The term 'Conduct Disorder' (CD) was introduced in ICD-9 (1977) and DSM III (1980).[19,20]

In its time, DSM III was more widely used than ICD-9. This was because its use of a multi-axial system improved the validity and reliability of making a mental health diagnosis.[21] Furthermore, in the United States (U.S.), medical insurance companies adopted DSM-III because the specific definitions could be incorporated into reimbursement models.[19] Research based on DSM-III led to a marked understanding of the prevalence, course of illness and pathophysiology of mental health disorders. Research also revealed inconsistencies and unclear or invalid criteria in the manual. This led to an extensively revised version, DSM-III-R, being produced.[19] In 1992, the WHO published ICD-10. It soon became clear that these manuals were being used clinically but for this purpose more clarity and instruction were required. As such, the ICD-10 Classification of Mental and Behavioural Disorders: Clinical Descriptions and Diagnostic Guidelines (CDDG) was developed.[19] The CDDG was more descriptive and included flexible diagnostic guidelines, particularly relating to various cultural settings.[19]

DSM-5 was released in 2013. It sought to rectify issues relating to the specificity of the diagnostic criteria. This specificity had led to insurance companies, funding bodies and researchers taking a two-dimensional approach to diagnoses and strictly adhering to criteria. The specificity of the criteria meant that clinically many individuals sat in the grey areas of diagnostic criteria with a high rate of nonspecific diagnoses ('Not Otherwise Specified') reflecting that in clinical practice many people had disorders that did not meet specific categories.[19]

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DSM 5 sought to address issues relating to cultural validity.[19] For example, using DSM-IV, there was a 34-fold variation in prevalence of anxiety disorders across countries.[22] This suggested that the diagnostic criteria were failing to identify different cultural expressions of the same disorders, while concerns were raised about generalising western-based psychiatric ideas to other cultures.[23,24] In DSM-5, a separate section, 'Culture-Related Diagnostic Issues', was added to facilitate the application of the manual.[19]

In 2022, WHO will release ICD-11. The goals of this version will be to use the best evidence to determine which mental and behavioural disorders should be prioritised by member states and how to define and collect information on these. These goals are closely tied to reducing global mental health gaps, in particular poor access to effective treatment. Proposed changes in ICD-11 are intended to improve its clinical utility and allow more flexibility in different cultural contexts.[19]

Limitations of Classification Systems

Forming mental health diagnoses is a complex process.[19] They are not as distinct as other physical conditions and finding a single aetiological 'cause' can be futile. Rather, acknowledging biological, behavioural, psychosocial and cultural factors over time allows a complete understanding of the individual.[19]

Tools that help categorise mental health disorders are useful. In accepting such systems, it is important to resist trying to fit individuals into categories, or to think of disorders, their severity or thresholds as distinct entities. There are often significant overlap between them with cut-offs made on a semi-arbitrary basis.[19] The definition of mental disorders has changed over time and is likely to continue to do so. This can have an impact on individuals who may move in and out of these definitions. Consequences include stigmas and eligibility for services. Adding to the complexity of mental health diagnoses is comorbidity. Again, while it may be tempting to think of individuals as having one particular disorder, this is often not the case. Comorbidity is common and is thus likely to be the norm as opposed to an outlier.[19]

While classification systems are helpful in advancing clinical knowledge, communication and service development, they do have limitations.[19] It is thus important to take a flexible approach to definitions particularly when considering regulatory, legislative, and legal processes. There is also a need to simply acknowledge that forming mental health diagnoses is complex and that endeavouring to fit individuals neatly into categories is unlikely to be helpful.[5]

Understanding Health and Well-Being in the Context of Aboriginal Culture

Culture is central to the happiness and well-being of Aboriginal people.[25] One definition of culture is the 'ideas and self-concepts such as artefacts, attitudes, beliefs, customs, norms, symbols and values, of a group. It also encompasses the influence of historical events and standards of behaviour that evolve and change over time'.[26]

In Western cultures, health tends to be compartmentalised as being either mental or physical. In Aboriginal culture, health is understood more holistically and includes the concepts of physical, mental and emotional health as well as social, spiritual and cultural connection, and connection to country.[27–30] This is true of CBD as well.[31]

Past and ongoing injustices associated with colonisation have had an impact on the SEWB of Aboriginal people.[25,31] This includes the effects of intergenerational trauma, cultural disconnection and family disruption which have led to high levels of disadvantage within Aboriginal families and communities.[28]

The impact of colonisation on Aboriginal culture

Colonisation led to drastic changes and interruption of the life-ways of Aboriginal people.[29] This included acquisition of land and power through 'bloodshed, warfare, massacres and poisoning'.[30] Many Aboriginal people were forcibly removed from country onto missions and reserves. This disrupted kinship systems, degraded spiritual connections to land and suppressed the use of Aboriginal languages.[29]

Colonisation involved imposing the values of the colonisers on Aboriginal people, who were defined as the 'other' or 'savage'.[32] Systems of laws enforced colonial ownership of land and the development of values and beliefs that devalued the existing culture.[29,32] This introduced a deficit way of thinking whereby Aboriginal practices including family life were seen in the negative or as lacking in some form.[29,33]

Family life-ways within Aboriginal culture

For Aboriginal people, there is a strong emphasis on relationships with the extended family which includes a communal or shared approach to raising children.[25,28] This involves care of children and sharing of material resources such as money and food.[28,32]

The role of elders in Aboriginal culture is significant. Elders are highly respected and provide wisdom, leadership and education about aspects of life and society.[28] This lives on in modern times with supportive grandparents, particularly grandmothers, seen as a cornerstone to family life. Featherstone[32] describes a grandmother's presence as being 'centred on helping their daughters to develop comfort in parenting their children'.

The role of children in Aboriginal culture differs from Western concepts of childhood.[28,29] For Aboriginal people, infants are included 'as accepted and valued members of the family' and are involved in all activities.[34] The 'child–adult relationship is one of greater equality than typically seen in non-Aboriginal families'.[35] In Aboriginal culture, there is an emphasis on children learning by exploring and experiencing the world.[28] As the book 'Walking with the Seasons in Kakadu' states:

> 'This is a story that has got to be told to children so they know country-no good just sitting in the classroom all day. You've got to get outside and discover the bush, feel the changes, see what's there'.[36]

Children are expected to have responsibilities within their families. They are encouraged to care for each other, to be independent, autonomous and self-reliant but also value the strength of community coherence.[29]

Aboriginal families have strong value systems based on their relationship to community and country.[32] Central to this is teaching children the interconnecting values of autonomy and caring

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for others.[28] These characteristics impact on the resiliency of Aboriginal people and are important to build on when working in partnership with Aboriginal people.[32]

There has been little acknowledgement of the differences and integrity of the parenting characteristics of Aboriginal people.[32] Dunstan et al.,[33] in examining Australian national and state policy frameworks, discuss how Aboriginal family life continues to be positioned as deficient and dysfunctional.[32,33]

CBDs amongst Aboriginal People

Aboriginal people are particularly vulnerable in the context of mental health disorders, with a higher reported prevalence of disorders and lower access to services.[37,38] CBD in Aboriginal children are influenced by adverse childhood experiences such as abuse, neglect, the experience of racism and the ongoing grief, loss and disadvantage associated with colonisation.[39] These experiences have a cumulative effect on development, health and SEWB.[31,40]

Despite the effect of adverse experiences, the impact of these are not set in stone. Factors that can mitigate these negative effects include secure caregiver relationships, family encouragement to attend school, having someone to talk to, and regular exercise.[41] Building a sense of self-efficacy and empowerment, strengthening abilities to self-regulate, as well as the protective benefits of sources of faith, hope and cultural traditions act as resiliency factors.[31,42]

People understand a diagnosis within their social, cultural and environmental circumstances.[43] For parents, having a child who misbehaves is associated with stigma and feelings of shame and guilt. Parents often feel pressured to seek a medical diagnosis for what they often believe is a social problem, in order to receive support.[44] In many ways, a power differential exists whereby the clinician not only defines and labels behaviour but also acts as a gateway to accessing resources.[43] An example is attention-deficit/hyperactivity disorder. Aboriginal children have a higher risk of hyperactivity problems (15.8%) than non-Aboriginal children (9.7%).[45] While parents want to see improved behaviour, they are hesitant about medication, mainly because of perceived differences between Aboriginal and non-Aboriginal children. For many Aboriginal families, hyperactivity has been perceived as being mischievous, rather than a disorder. Families saw a need for interventions and resources that recognised these differences and involved the wider family unit.[46]

Deficit-focused, Western-based assumptions about Aboriginal health including CBD can have negative implications for Aboriginal people. It is important to continue to advocate for the voices and knowledge systems of Aboriginal people to be recognised.[31,43]

Summary and the Journey Forward

History and culture are intertwined. For Western cultures, the last century accelerated knowledge and industry. Those influences shaped society, the place of children and expectations about their social roles and behaviour.[4–6]

Aboriginal culture has evolved over an estimated 65 000 years prior to Western colonisation.[25] Connection to culture is a strength, and is a protective force for children and families.[27] Many of these connections were disrupted by colonisation and have left a legacy of intergenerational health and social inequities. Furthermore, there has been little acknowledgement of the differences between child-rearing amongst Aboriginal and non-Aboriginal cultures with Aboriginal ways of life often seen as the one in deficit.[32,39] CBD in an example of health inequity with Aboriginal children being more likely to receive a diagnosis in this category.[47]

As we endeavour to understand these social and historical influences on behavioural diagnoses, we need to recognise how the field of mental health has developed, particularly in the last century. The evolution of classification systems such as DSM and ICD have helped professionals communicate and manage mental disorders. In an attempt to standardise medical practice, the limitations of this approach became apparent, particularly when applying these systems across cultures.[19]

Classification systems became a tool in a complex diagnostic process that required a holistic approach. Gradually a need for flexibility in diagnostic processes has become evident, in opposition to a process which endeavours to fit people into imperfect diagnostic criteria.[19] Yet, external pressures often dictated this approach including reimbursement from insurance services and criteria to access treatment. Today, these pressures still exist. Health professionals frequently find themselves at odds between the needs of individuals and the criteria for accessing various supports and sources of funding.[38] There is a growing understanding that a single diagnostic manual will not capture all that is needed to know in the field of mental health and that innovative ways to approach mental health is required.[19] Integral to this will be building flexibility at a regulation level within health and mental health systems.

In Australia, there remains tension about acknowledging the life-ways of Aboriginal people. Health care is not immune to this with CBD often perceived as a product of ongoing colonisation, whereby underlying social and cultural factors are not accounted for.[24] Understanding of these concepts is integral to the success of any programs and services for Aboriginal people.[27] A key theme that emerges is that 'cultural wounds require cultural medicines'.[48] This requires a commitment at a policy level to empower communities to build on existing strengths, culture and connections to build effective services.[27,28,30] The right to self-determination means that Aboriginal people must actively participate in every aspect of the design and delivery of policies and services that affect them.[31] Services need to be encouraged and funded to be responsive to the holistic needs of Aboriginal people. This includes addressing sources of stress such as finances and housing.[31] It is also vital for assessment tools and treatments to have been validated in Aboriginal populations.[25] For those working in health and education, there is a need for ongoing training and everyday implementation of culturally-safe practices.[25,27] Health and well-being for all are likely to improve when cultural elements are acknowledged, practised and incorporated into people's lives.[25]

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The World of Disney by Clara Noh (aged 15) from "A Pop of Colour" art competition, Youth Arts, Children's Hospital at Westmead

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Chapter 6 Ngaramadhi Space—An Integrated, Multisector Model of Care for Students Experiencing Childhood Behavioural Disorders

6.1 Introduction

Partnerships between the education and health sectors play an important role in optimising care for children and young people. An integrated, multisector model of care was developed at YGS, located in metropolitan Sydney, Australia. YGS is a specialised secondary school for children experiencing problematic externalising behaviour. NS is the name of the SBHC program located at YGS. NS was developed from the ground up and in partnership with the Aboriginal community and the school to provide holistic, integrated, multidisciplinary child-and-family-centred care to students attending YGS. The school and Aboriginal community had identified that students referred to the school had complex support needs and experienced social marginalisation and social issues. The main issues identified prior to establishing the model of care were mental health issues, learning difficulties, behavioural difficulties, family dysfunction leading to involvement with out-of-home care or juvenile justice systems, social isolation, drug or alcohol misuse, and early disengagement from education. The school and community believed that a holistic and integrated model was required whereby health professionals, allied health professionals, educators and social care workers collaborated to understand and respond to the students' needs (Gonski Institute for Education, 2020). It should be noted that when further assessments such as a cognitive assessment, autism assessment or ADHD assessment were required, these were done in-house, utilising the skills of the school counsellor and paediatrician. This practice allowed for a faster and less convoluted assessment process and thus more efficient use of services. In the following article, the development of the NS model of care is described, as is the importance of collaboration between sectors in improving access to health and social care in a culturally safe manner (Objective 2).

Citation

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International Journal of Integrated Care

Ngaramadhi Space: An Integrated, Multisector Model of Care for Students Experiencing Problematic Externalising Behaviour

INTEGRATED CARE CASE

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ABSTRACT

Introduction: Behavioural and emotional disorders are a significant cause of morbidity for young people aged 10–19 years. School-based health care (SBHC) provides an innovative approach to addressing these issues within Australia.

Description: We describe an innovative and integrative SBHC model called Ngaramadhi Space (NS) based at a specialised behavioural school called Yudi Gunyi school (YGS) in metropolitan Sydney, Australia. NS was developed in partnership with the Aboriginal community to provide holistic, integrated, multidisciplinary child and family centred care to students experiencing problematic externalising behaviour. We contextualise the historical factors leading to the development of NS, highlighting the importance of effective partnerships between sectors, and providing the theoretical framework and key components underpinning the model of care.

Discussion: In Australia, schools are an under-utilised resource for the delivery of health and support alongside education. Collaboration between sectors can be challenging but allows a more coordinated approach to the management of complex social and health issues. By forming effective partnerships with schools and communities, the health sector has an opportunity to improve access to health and social care in a culturally safe and acceptable way. This is in line with national and international frameworks for improving health service delivery and addressing inequity.

Conclusion: The health sector can play a pivotal role in improving the wellbeing of children by forming effective partnerships with schools and communities. The NS model is a practice-based example of this.

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KEYWORDS:
school based health care; health promoting schools; National Children's Mental Health and Wellbeing Strategy; partnerships between health and education; Healthy Homes and Neighbourhoods (HHAN)

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INTRODUCTION

Behavioural and emotional disorders are a significant cause of morbidity for young people aged between 10-19 years [1, 2]. Progress in the health and wellbeing of this group has plateaued with mental health and substance abuse issues being significant issues [1–3]. In Australia, 14% of children experience mental health disorders such as attention-deficit and hyperactivity disorder (ADHD, 7.4%), anxiety disorders (6.9%), depression (2.8%), and conduct disorders (2.1%) [4]. Within Sydney Local Health District (SLHD) depression, anxiety, substance abuse, and behavioural disorders rank in the top five most prevalent diseases for young people with a 160% increase in emergency department (ED) presentations for suicide/self-injury and a 139% increase in total ED presentations for mental health issues between 2015–2021 [5].

The impact of mental health disorders for young people is significant and contributes to negative individual, social and economic outcomes [6–9]. In Australia, access to mental health services is limited, with only half of affected children receiving appropriate services and visible inequities between Aboriginal and non-Aboriginal children [4, 10–15]. Aboriginal children experience poorer health and wellbeing outcomes, lower levels of service use and barriers to accessing services [16–20]. There is evidence to suggest a widening of these inequities as a result of the COVID 19 pandemic [21–25].

In Australia's first 'National Children's Mental Health and Wellbeing Strategy (NCMHWS)' a need to develop innovative child-centred approaches to mental health and equitable access to services was outlined [26]. School-based healthcare (SBHC) provides a solution to this issue [27–30]. Worldwide, most children are enrolled continuously in school [31, 32]. This provides an opportunity to improve access to healthcare in an environment that is safe and acceptable to children and families [27–29, 33].

SBHC is well established in the United States (US), United Kingdom (UK) and New Zealand (NZ) were they have been designed to meet the unique needs of local communities [34–39]. SBHC provides a range of physical health and mental health services and have been associated with increased access to care, improved health and education outcomes, high levels of student and parent satisfaction, and reduced health care costs for priority populations [28, 40–49].

Within Australia, there is a growing interest in SBHC models of care with the ground-up development of initiatives such as 'Our Mia Mia' (OMM) and 'Our Place' [50–53]. In addition, the 'Australasian School-Based Health Alliance (ASBHA)' has been formed to bring together a knowledge base and a network of practitioners to advance this field [54].

In this paper, an innovative SBHC model called Ngaramadhi Space (NS) is described. NS is unique because it is based at a specialised secondary school, Yudi Gunyi school (YGS), for students experiencing problematic externalising behaviour [55]. Located in metropolitan Sydney, Australia, NS was developed in partnership with the Aboriginal community to provide holistic, integrated, multidisciplinary child and family-centred care. The NS model will be contextualised within the historical factors which led to its development, highlighting the importance of building effective partnerships between the health sector, the education sector and the community. In addition, the theoretical framework and key components underpinning the model of care will be outlined [27, 56, 57].

YUDI GUNYI SCHOOL (YGS) AND NGARAMADHI SPACE (NS)

YGS is a 'School for Special Purposes' (SSP), catering for students aged 10-16 years experiencing problematic externalising behaviour in a mainstream school setting [55, 58]. Up to 34 students are enrolled at any one time, with enrolments occurring throughout the year [55]. Through an individualised case-management approach, the school aims to successfully transition students back into a mainstream school or to the wider community if they have completed compulsory schooling [55].

The NS model of care was developed over almost a decade and represents an integrated approach between the health, education and social care sectors [59–61]. The process of developing the model (visualised in Figure 1) began in 2014 as part of a broader community consultation initiative undertaken as part of the Healthy Homes and Neighbourhoods (HHAN) integrated care initiative [62, 63]. The aim of the consultation process, which involved community organisations and service providers, was to strategically identify potential sites for co-location of services [62, 63]. Out of this process, YGS was identified as a priority school. YGS was recognised as an endpoint for a confluence of social risk factors, such as low socioeconomic status, parental mental health issues, and intergenerational adversity [58]. As a result, discussions between key stakeholders across sectors were commenced. The voices of community members including the local Aboriginal community were an important part of this process and provided direction with developing the holistic model of care.

Between 2015 and 2016, the integrated model was developed and it was formally piloted between 2016 to 2019. The shared goal of the model was to address the physical health, mental health, educational, and social needs of students and their families. The multidisciplinary team included a paediatrician, youth health nurse, social worker, school counsellor, speech therapist, and occupational therapist. A child and adolescent psychiatrist was partnered with to provide consultative advice on students.

In 2017, the name 'Ngaramadhi Space (NS)' was gifted to the initiative by the Aboriginal community [55]. 'Ngaramadhi Space (NS)' refers to the multidisciplinary clinic as well as the rooms within the school where the clinics are held. These rooms were purpose-built to have multiple uses, including space for clinical assessments, counselling and therapy sessions, while being welcoming to young people and families.

During the pilot phase and based on positive feedback received from the community and partners, the NS model started becoming integrated within YGS. This included an evaluation study started in 2020, establishing a community reference group called the 'Wouwanguul Kanja' committee, forming a memorandum of understanding (MOU) that was authorised in 2021, and initiating professional development and supervision pathways in 2022. These processes will be detailed in the following sections.

THEORETICAL UNDERPINNING

Health and education go hand in hand and are core human rights [64]. The World Health Organisation (WHO) global strategy on integrated people-centred health services (IPCHS) informed the development of NS (Figure 2). The IPCHS strategy encourages a lifespan

Figure 1 Timeline for Development of the Ngaramadhi Space Model of Care.

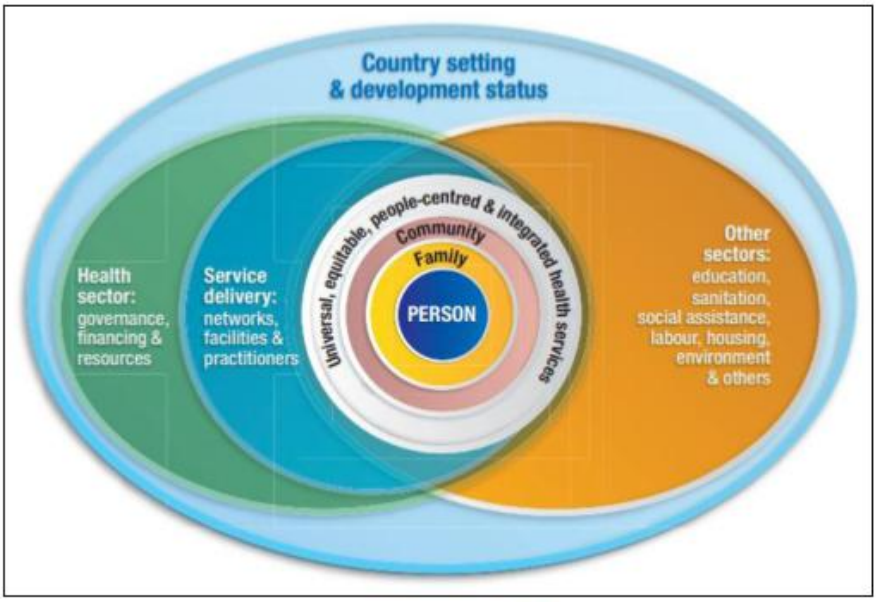

Figure 2 Conceptual framework for integrated people-centred health service [65].

approach to health, with a shift from curative- or treatment-focused healthcare to health prevention, promotion and protection, particularly in the areas of noncommunicable diseases, mental health and injuries [65]. NS was a person-centred initiative, based on the needs of the community, where health services were re-orientated to be delivered at school to improve access to physical health and mental health care.

The importance of the connection between health and education is emphasised in the WHO policy on 'Health Promoting Schools (HPS)' [33]. HPS is a key global standard outlining the potential that embedding healthcare in schools can have across the social determinants of health [33]. Concepts from these standards informed the development of NS, particularly global standard 8 which refers to the comprehensive provision of health and wellbeing services at schools [33].

Locally, the NCMHWS provides an important framework for re-orientating mental health care towards prevention, early intervention, and child-centred practice. The NCMHWS echoes the concepts described by HPS including the importance of equitable access to services and service delivery that utilise integrated family care models [26]. Collaborative and integrated care were an essential element in the design of NS to deliver equitable and accessible healthcare to families with high needs.

When developing NS, cultural knowledge from the local Aboriginal community was drawn upon. For the Aboriginal community, a holistic understanding of the 'Social and Emotional Wellbeing' (SEWB) of a child was important. This concept reverberated in the names gifted to the initiative including 'Ngaramadhi' which means 'deep listening' and 'Wouwanguul Kanja' which combines the concept of health and education [12, 14, 66]. The Aboriginal community voiced their beliefs about the importance of collaborative partnerships between the health and education sectors to understand the 'whole of the child and family' which formed the backbone of the NS model of care [67]. These concepts align with the Australian Government's commitment to drive change in relation to policies and programs affecting Aboriginal people, as highlighted in the Commonwealth 'Closing The Gap Implementation Plan 2023'. This plan outlines four 'Priority Reforms' including formal partnerships and shared decision-making, building the communitycontrolled sector, transforming government organisations, and shared access to data and information at a regional level [68].

The social needs of students were a priority when conceptualising NS. This critical feature was driven by the HHAN framework and aligned with Component 1 of the framework where development of interagency models of care for 'high need' schools was prioritised as well as Component 6 which relates to place-based initiatives. Furthermore, the NS model was associated with Component 7 of the HHAN framework because it required system changes and reorientation of healthcare to where it was needed by the community [62, 63].

In the U.S, the 'Whole School, Whole Child, Whole Community (WSCC)' framework (Figure 3) provides an

Figure 3 The Whole School, Whole Community, Whole Child Framework (WSCC) [69].

important guideline for addressing integration of health within schools [69]. While the health and education sectors differ between Australia and the US, the knowledge underlying frameworks such as the WSCC framework remains relevant locally [70, 71]. While not prescriptive in nature, the framework describes 10 main components for developing SBHC models [56, 70]. The NS model illustrates these key components as well as the underlying concepts of coordinating policy, process and practice (Table 1) [69].

PARTNERS AND INTEGRATING CARE

PARTNERS AND SERVICE DELIVERY

NS was built through, and on, partnerships developed over time involving community paediatrics, the school, allied health, and the social care sector, and was overseen by the Wouwanguul Kanja Committee (Figure 4). Key stakeholders from the education sector included the school director, principal, and a networked specialist facilitator, with each holding a unique strategic role. For instance, the school director provided governance and direction to multiple schools within the community and afforded executive level endorsement of the NS model of care, while the principal provided leadership within the school and played an integral role in embedding NS within the school's existing processes and culture [72, 73]. The networked specialist facilitator was a specific position within the Department of Education (DOE), whose role centred on building connections between the education sector and other agencies, including the health sector [74]. Furthermore, the school, due to its specialised nature, provided the model with teachers and therapists skilled in managing behavioural issues.

From the health sector, a community paediatrician, with support from the Director of Community Paediatrics and the Child and Family Health Management team, was integral in driving the formation of the multidisciplinary clinic, providing paediatric developmental and behavioural expertise, and establishing an evaluation process. The Youthblock Youth Health Service (Youthblock) providing the team with a specialist youth health nurse and pathways to support young people e.g. drug and alcohol counselling, sexual and reproductive health services [75]. A child and adolescent from SLHD was partnered with to establish a system whereby the paediatrician could consult with the psychiatrist for advice and support regarding students [76].

The NS model required the skills of a social worker. Initially a non-governmental organisation called Family Referral Service (FRS), now called 'Family Connect and Support', was partnered with to assist families in connecting with local support services [77]. Later, the school contracted a social worker for this role. Senior clinicians from the HHAN team had a broad understanding and knowledge of the community and provided support to the NS team [78].

Students at the school were identified as requiring trauma-informed speech pathology (SP) and occupational therapy (OT). The school contracted these therapists using a combination of public and school funding.

WOUWANGUUL KANJA COMMITTEE

Since its conceptualisation in 2015/2016, community members and stakeholders played an active role

WSCC COMPONENT	EXAMPLES FROM NGARAMADHI SPACE
Health education	Provision of education by youth nurses
Nutrition environment and services	Nutritional food provided to students Students involved in food preparation
Employee wellness	Multidisciplinary teams fostering connections Professional development sessions Networking Free staff counselling
Social and emotional school climate	Teachers trained in trauma-informed practice
Physical environment	Purpose-built space
Health services	Multidisciplinary holistic assessments
Counselling, psychological and social services	School counsellor Youthblock services External providers
Community involvement	Wouwanguul Kanja committee
Family engagement	Families attended assessments
Physical education and physical activity	Internal and external providers at school

Table 1 Examples of how the Ngaramadhi Space model applies to the WSCC framework [69].

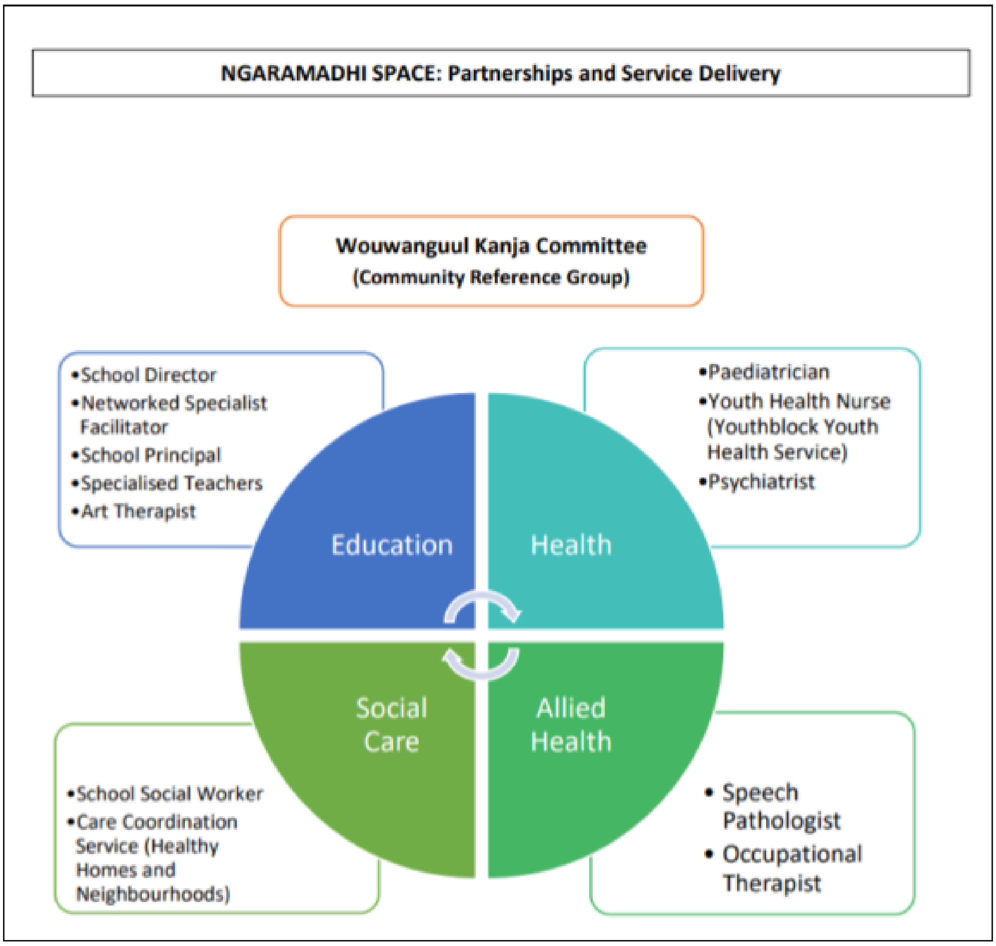

Figure 4 Diagram Illustrating the Partnerships and Service Delivery for Ngaramadhi Space.

in informing the NS model. After the piloting phase (2016–2019), a community reference group called the Wouwanguul Kanja Committee was formally established. The Aboriginal community members decided on the structure of the committee agreeing that it was to be kept small and include representatives from the Aboriginal community and NS team. The Aboriginal members provided insight into culturally safe ways of working including a 'whole of child and family' approach and having services co-located and integrated at the school [67]. The community members communicated the importance of the different sectors working together by not only providing a multidisciplinary assessment but also collaborating after the assessment to ensure that outstanding matters could be discussed.

All members of the committee were actively involved in designing the evaluation process, ethics applications, reporting of results and preparing scholarly articles. The committee met regularly and developed agreed upon terms of reference. The community members expressed a need to scale up the NS model because the holistic approach was seen as an effective way of improving access and engagement with health and education services [67, 79].

MODEL OF CARE

REFERRALS AND PRE-ASSESSMENT INFORMATION GATHERING

YGS is a specialised behavioural school and acceptance is based on a referrals process. Enrolment at the school and participation in NS were voluntary. During the six-week school orientation period, verbal and written information about the NS assessment was provided. Written permission was obtained from parents to attend the assessment and for information sharing across the sectors. To enable provision of family-centred care, when concerns were raised about siblings of students, they were also offered a NS assessment.

Following the pilot phase of the NS assessment, a consistent approach to the pre-assessment phase was established (Figure 5). A 'School Health Team' was developed and included the paediatrician, youth health

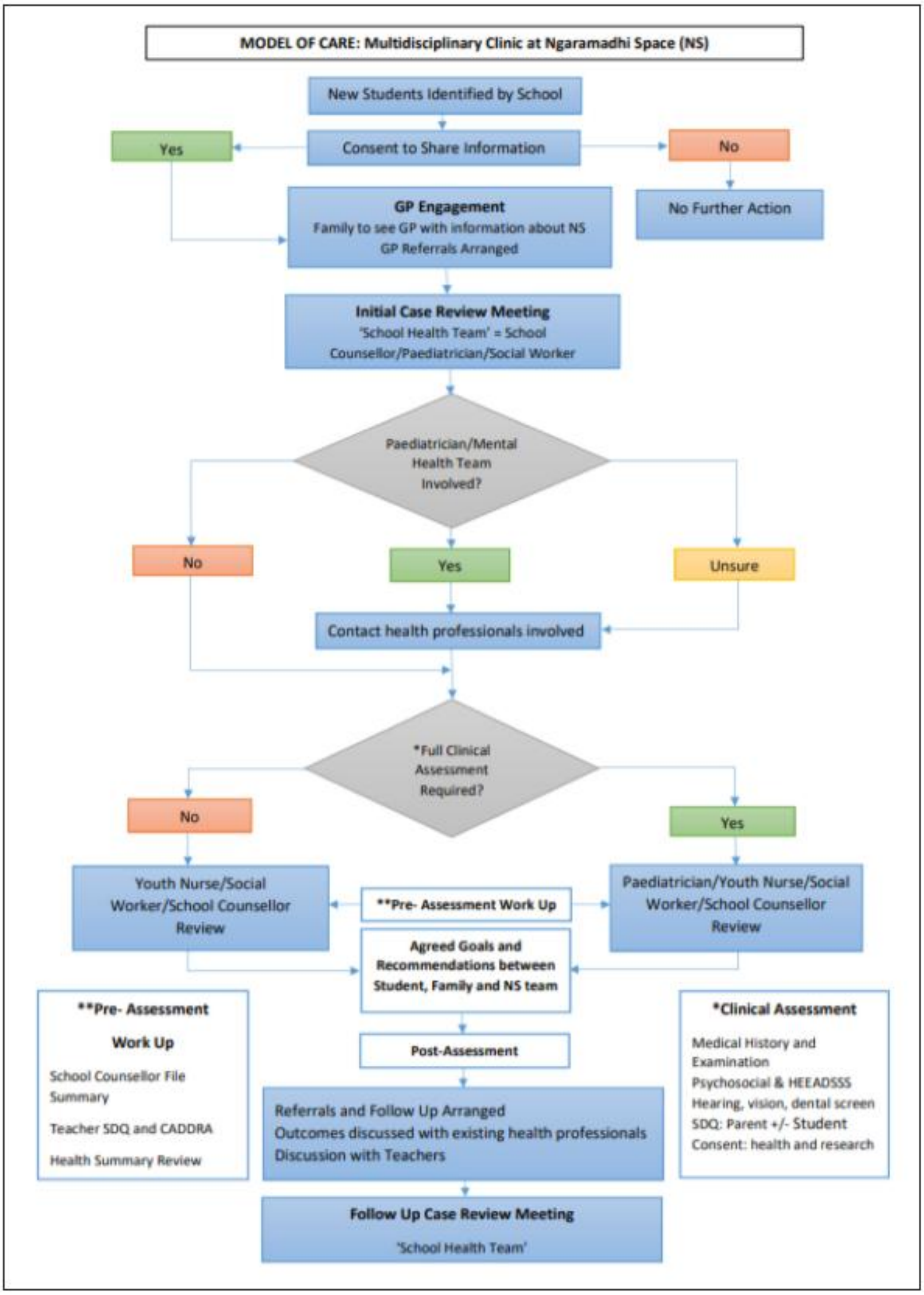

Figure 5 Model of Care for Ngaramadhi Space Multidisciplinary Clinic.

nurse, social worker, and school counsellor. An initial 'Case Review Meeting' was held to discuss referrals and to facilitate information sharing. If a student was engaged with an external paediatrician or psychiatrist this clinician was considered to be the lead clinician. Before proceeding with a full NS assessment, the lead clinician was contacted to see if the assessment would be beneficial. If the lead clinician felt that a full assessment was appropriate, then this would be arranged, and the lead clinician was offered an opportunity to be present for the assessment either in person or using videoconferencing. If the lead clinician did not think a full assessment was necessary, a partial team assessment with a social worker, school counsellor and youth health nurse would be offered to the family. A partial team assessment involved a current psychosocial history without a full medical review.

Collating and sharing information prior to the NS assessment was a key component of the model. Information sharing amongst agencies is necessary when providing high-quality health and social care and the team were guided by NSW privacy-related legislation [80]. The school counsellor summarised information about the family, assessment results, and education support. The class teacher provided current information about the student's academic skills, behaviour and SEWB by completing a Canadian ADHD Resource Alliance (CADDRA) report and a Strengths and Difficulties Questionnaire (SDQ teacher version) [81, 82]. The paediatrician provided a summary of available health information. This preparation led to a better understanding of the student and how to approach the assessment.

Maintaining a 'medical home' with the family general practitioner (GP) was an important consideration in developing the model of care [83]. Parents were asked to share written information about NS with their GP to help build this connection. Families also required GP referrals for the clinic and to see the SP and OT. A letter communicating the assessment findings of the NS assessment was provided to the GP as well.

MULTIDISCIPLINARY ASSESSMENT

The full multidisciplinary assessment was conducted with the student and parent by the School Health Team (Figure 5). After introductions, consent and confidentiality were verbally established. The team approached the student's health and psychosocial history flexibly, taking into account the student's behavioural needs and the family dynamics. During the assessment the student was seen on their own by the youth health nurse or paediatrician to conduct an adolescent psychosocial assessment (HEEADSSS assessment), hearing, vision and dental screening, and complete a physical examination including anthropometric measurements [84]. A parent and student SDQ were also completed.

The team then discussed the presenting issues and formed a joint and holistic understanding of the student in line with the family's priorities. Where possible, students were linked into existing services such as established community paediatric clinics or mental health services. When this was not possible, other avenues within the community were explored. Towards the end of the assessment consent for the separate processes of sharing medical information and participation in the research component was discussed and completed. After the assessment a comprehensive letter was compiled primarily by the paediatrician with input from other team members. Box 1 illustrates a typical patient journey through NS.

Box 1 Patient journey through Ngaramadhi Space.

- CJ: 14-year-old Aboriginal male referred to Yudi Gunyi School (YGS) for significant behavioural issues
- YGS orientation: caregiver provided with information about Ngaramadhi Space (NS). Written permission to attend NS and for information sharing was obtained.
- Family visited General Practitioner (GP):discussed NS assessment; referrals for paediatrician, occupational therapist and speech therapist provided.
- School Health Team: collated information including school counsellor summary, medical records and teacher reports (CADDRA and SDQ).
- Initial Case Review Meeting: CJ's health, education and social information discussed. Issues raised:
    - In kinship foster care since 6 months old
    - Severe meningococcal C meningitis aged 9 months
    - Complex psychosocial trauma.
    - Oppositional defiant disorder (ODD), post-traumatic stress disorder (PTSD), attention-deficit and hyperactivity disorder (ADHD) and depression
    - Intermittent engagement with mental health services
- Mental health team contacted: agreed that a full NS team assessment would be beneficial and to being contacted after the assessment.
- NS assessment: CJ and carer seen by full NS team (Paediatrician, Youth Health Nurse, Social Worker, School Counsellor).
    - Consent and confidentiality discussed
    - Comprehensive medical, education and social history obtained.
    - CJ seen by the youth health nurse: completed HEEADSSS psychosocial assessment; dental, vision and hearing screening.
    - Paediatrician conducted physical examination including growth measurements.
    - School counsellor and social worker completed a parent and student SDQ.
- Multidisciplinary team discussion and findings:
    - Parental substance abuse and domestic violence.
    - Paternal incarceration.
    - CJ attended multiple schools with poor academic achievement
    - CJ's behaviour was impulsive and aggressive.
    - Police involvement.

  - CJ had recently started self-harming.
  - CJ was the victim of bullying.
  - CJ was using alcohol and vapes.
  - Foster placement threatened because CJ's behaviour was having a negative impact on carer's son's mental health.
  - Physical health issues: possible obstructive sleep apnoea (OSA) and teeth grinding.
- Recommendations
  - School counsellor: emotional regulation strategies
  - Speech pathology and occupational therapy.
  - Social worker: linked CJ with youth police liaison officer provide positive life experiences e.g. sports, mentor.
  - Youth health nurse: drug, vaping and alcohol counselling
  - Counselling arranged for carer's son
  - Paediatrician: discussed medication options; referred to Ear, Nose and Throat specialist and dentist.
  - Written medical and research consent received.
- Assessment letters distributed to GP and mental health team.
- CJ discussed at staff meeting with psychiatrist in attendance.
- School Health Team met at subsequent Case Discussion Meeting to review CJ's progress.

AFTER THE ASSESSMENT

Students were discussed at the subsequent Case Review Meeting to consider any outstanding issues. Once in every school term the NS team met with school staff to facilitate communication and to understand the student's progress. The psychiatrist attended these meetings either in person or using videoconferencing to provide insight into further diagnostic or management options.

EMPLOYEE WELLNESS

Working in psychological trauma services can have an impact on staff wellbeing [70]. Participating in a multidisciplinary model helped alleviate individual burden of care. In addition, regular professional development sessions and support networks were established to promote connectedness across the sectors. Staff were also aware of how to access free employee counselling.

EVALUATION METHODS AND INITIAL OUTCOMES

NS is a complex intervention where students have diverse needs and attend a multidisciplinary assessment [85]. NS is being evaluated using a mixed methods design and these results will be reported in later manuscripts using the model of care described in this paper. Preliminary quantitative evaluation has shown that students had multiple unmet physical health, mental health, and social needs. Attendance at the NS was high and there was a statistically significant improvement in teacher reported scores using the SDQ [in print]. A qualitative study examining how the education and health sector can work in partnership including facilitating factors and barriers is currently underway and will be reported in a later manuscript. The authors acknowledge that because this was a pilot study, data on longitudinal outcomes were not evaluated. The research team are designing an implementation study with the following outcome measures:

Access: Proportion that access care prior and after SBHC implemented, number of service encounters and referrals, outcomes of referrals
Health outcomes: Prior and new diagnoses
Socio-Emotional Wellbeing: SDQ at initial visit, 6 months and 12 months.
Education outcomes: School attendance before and after SBHC, suspensions, referrals and supports.
Implementation outcomes: Reach, adoption of service integration of services, implementation in different contexts, implementation barriers and facilitators, acceptability and appropriateness
Economic evaluation

DISCUSSION

The NCMHWS states that 'in an optimal [health and] mental health system, all doors lead to help and services are designed and delivered based on the needs of children and families' [26]. As we head into a post-pandemic era we are confronted with a widening of pre-existing health and socioeconomic disparities [21, 24, 25]. Novel approaches to 'building it back differently' are needed with the unmet needs of young people high on the global agenda [23, 30].

The NS model of care builds on national and international strategies to integrate care. The following section will discuss how effective the model of care was and which areas could be improved through the lens of the IPCHS framework [65].

ENGAGING AND EMPOWERING PEOPLE AND COMMUNITIES

The NS model of care was effective in engaging and empowering people and communities. This was achieved through effective community consultation which led to the development of a culturally-safe and multidisciplinary model. This approach aligns with the Closing The Gap Implementation strategy which emphasises the role of formal partnerships and shared decision-making with the Aboriginal community [68].

YGS is unique and has an important role in the community, acting as an endpoint for students experiencing significant behavioural issues. The trajectory for these students is poor and the community saw a need to change this pathway. A holistic approach was considered important in addressing the multifactorial issues that resulted in the problematic behaviour. For the Aboriginal community it was critical that the SEWB of students was recognised, a term which reflects the important connection between physical, mental and emotional health with social, spiritual and cultural wellbeing [12, 14, 18]. Amongst the Aboriginal community SBHC is an effective way to address inequity with collaborative partnerships between the health and education sector that seek to understand the 'whole of the child and family' valued [67, 79]. NS was governed by a community reference group, Wouwanguul Kanja, that oversaw all aspects of the design and evaluation of the initiative. This active participation from the community led to acceptance of the model along with calls to scale up the model so that other students could benefit from the approach [67, 79]. It is important for this level of community participation to be maintained and improved upon as the model evolves and is scaled up.

COORDINATING SERVICES WITHIN AND ACROSS SECTORS

The NS model achieved coordination within and across sectors through sharing of information, joint assessments and case review meetings. Working across sectors allowed timely and effective management of learning and behavioural difficulties. For example, health staff could directly contact teachers about the effectiveness of medication changes. This level of communication meant that the likelihood of complex students slipping through the system was reduced and allowed staff to present consistent messages to students and families [53].

Collaboration across sectors often presents challenges. Time is required for teams to understand each other's role, work through conflict, develop trust and effective communication [86, 87]. Some issues that arose included an understanding of who the 'leader' was and assigning responsibility for tasks [88–90]. There were matters arising from changes in staffing and changes in stakeholder capacity as well. The impact of these incidents was minimised by taking a stepwise approach to implementing the model and documenting roles and responsibilities [89].

STRENGTHENING GOVERNANCE AND ACCOUNTABILITY

Over many years the NS model was able to strengthen governance and accountability across sectors. The health and education systems are complex and hierachical systems. Navigating these systems and bringing them into alignment required persistence, relationship development and time with decision-making by School Health Teams often requiring endorsement at a high executive level [53].

The direction provided by the Wouwanguul Kanja community group helped embed NS within the school. Through this avenue a MOU was agreed upon. In the context of NS, creating a MOU helped legitimise the way the various sectors worked together in view of setting a precedent for other models when scaling up the initiative. Further to these processes, administrative and educational meetings were set up for the whole team and supervision was strengthened by linking the school social worker with the HHAN care coordination team. These are small steps towards true integration and further high-level executive support is required within the departments of health and education.

REORIENTING THE MODEL OF CARE

Health and education are closely linked across the lifespan. Healthy students are in a better position to learn and students with higher education levels are more likely to engage with healthy behaviours throughout their life [11, 91–93]. The NS model is a school-based, holistic, and integrated care initiative. By reorientating health service delivery to schools access to care is improved thereby providing an opportunity to intervene and interrupt the trajectory of those attending YGS.

Delivering health services at schools is convenient for students and families while allowing health staff to leverage of the trust students have with the school. This approach has been shown to improve engagement, particularly for priority populations such as ethnic minority groups and those from low socioeconomic areas [34, 43, 47].

CREATING AN ENABLING ENVIRONMENT

For the previous four strategies to become operational, it is important to create an enabling environment. NS was embedded within the overall HHAN framework [62, 63]. This strategy helped bring together key stakeholders to undertake transformational change [65]. This was a complex task involving changes to the way staff from the various sectors worked together. The school principal played an important role in establishing a welcoming environment for the different sectors to connect and in embedding the NS processes within the school's workflow and culture. The NS team needed to learn how to adapt to changing circumstances, pivoting to meet the needs of the school and community, particularly during the COVID19 pandemic. The multidisciplinary team shared a common purpose and demonstrated a willingness to work flexibly and come to the school to improve access and engagement of students. The team continued to revise and refine the model of care, a process that occurred over years so that person-centred care could be optimised. The team developed a MOU to provide structure to how the sectors worked together including how the model of care could be sustained. An evaluation process was embedded in the model so that the quality of service delivery could be improved upon, a process which continues to be developed for future studies. NS is a pilot model of care and to ensure that it can be scaled up further commitment at a state-level from health and education is required.

CONCLUSION

Health and education are key social determinants of wellbeing [30, 43, 94]. The high disease burden associated with developmental and behavioural concerns in children, further potentiated by the COVID19 pandemic, has created an urgency for collaborative responses that can be translated into policy and be scaled up [22, 24, 25]. By incorporating health care into education settings children and their families are given access to excellent integrated care [53].

In Australia, there is a need for innovation that is culturally responsive and where community members have a real and tangible role in the co-design of services [12, 18, 26, 79]. Schools are an under-utilised community space within Australia and the health sector can play a pivotal role in improving the wellbeing of children by forming effective partnerships with schools [26, 52]. NS is an example of a model that brings together all these elements and provides an opportunity within the Australian context to address inequitable access to health and mental health care. The model of care has been developed over a decade and has been informed by the community and stakeholders. The Aboriginal community have voiced the need for similar models of care in addressing access issues for Aboriginal families as well as all Australians. The community acceptance of this type of model provides an important first step in addressing inequitable access and can form a base for prevention and early intervention models [26]. Furthermore, the NS model of care is centred on understanding the student in the context of 'people, place and land' thereby recognising the role of culture, society and history on behaviour [79].

KEY POINTS

- Ngaramadhi Space (NS) is a novel and integrated child and family school-based healthcare initiative for students enrolled at a specialised school for problematic externalising behaviour.
- The NS model of care is community-led and accepted as a way to reduce health and education inequities.
- SBHC is a re-emerging area within Australia with a growing interest in scaling up such initiatives.

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COMPETING INTERESTS

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Chapter 7 Quantitative Evaluation

7.1 Introduction

In this chapter the quantitative part of the evaluation is described through a published article (Objective 3).

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ORIGINAL ARTICLE

Retrospective audit of a school-based integrated health-care model in a specialised school for children with externalising behaviour

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Aim: Problematic externalising behaviours in adolescents are associated with high individual and societal burden. A school-based multidisciplinary health clinic, Ngaramadhi Space (NS), was developed at Yudi Gunyi School, a specialised behavioural school in Sydney, Australia, to improve access to holistic health-care and behavioural support. This evaluation aimed to describe the demographics, clinic attendance, health screening, recommendations made, and changes in Strengths and Difficulties Questionnaire (SDQ) scores of students attending the clinic.

Methods: Retrospective evaluation of students including changes in SDQ scores using descriptive statistics (26 July 2016 to 14 May 2019; $n = 79$).

Results: Prior to the assessment, few students engaged with a paediatrician or mental health professional (22.8%; 27.8%, respectively). Child protection services were involved with 76%. NS attendance was high (failure-to-attend = 7.6%; cancellations = 8.9%). New issues found at the assessment included: parental separation (31.6%); trauma history (27.8%); substance use (19%); emotional wellbeing concerns (16.5%), learning difficulties (12.7%), domestic violence (12.7%) and medical conditions (10.1%). SDQ teacher reports showed a significant decrease in total difficulties scores ($M = 6.2$, $SD = 6.165$, $P < 0.05$, eta squared = 1.013 (large effect)) and all subsets. No significant differences in parent and self-reported SDQ.

Conclusions: Students with problematic externalising behaviour have unmet health and social needs. The NS school-based integrated health-care model offers a novel, convenient and innovative way to engage these students. This approach has high initial attendance rates with teacher-reported SDQ results showing some behavioural improvement. Further qualitative studies are required.

Key words: conduct disorder; externalising behaviour; integrated care; multidisciplinary; oppositional defiant disorder; school health.

What is already known on this topic

1. Providing health care at schools improves access to physical health and mental health care for children.

What this paper adds

1. Students with problematic externalising behaviour attending a specialised behavioural school in Sydney have multiple unmet health and social needs.
2. The Ngaramadhi Space school-based integrated health-care model offers a novel, convenient, acceptable and innovative way to engage students and deliver health services.
3. Teacher-reported Strengths and Difficulties Questionnaire results showed behavioural improvement, which allows students to better access the educational curriculum.

Providing health services in schools has been recognised as a means to address common paediatric health challenges.[1–4] Adolescents frequently have unmet physical and mental health needs.[5] An estimated 20% of young people have a diagnosable mental health or behavioural disorder[6] but up to 70% do not receive mental health services.[7] This 'mental health gap' disproportionately affects children belonging to minority racial groups and lower socio-economic status groups,[8] in addition to inequitable access to routine health care[9,10] Adolescents also tend to engage in health behaviours that place them at risk of poor long-term health.[11]

Positioning health care within schools can help to mitigate these risks and promote healthy behaviours going into adulthood.[12] As such, it is important for the health and education sectors to work collaboratively. When done effectively, this can

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have a significant impact on learning and health outcomes while reducing barriers to access and care.[2–4,13–16]

Problematic externalising behaviour in children

Globally, externalising behaviours are the most common mental health disorder of childhood and adolescence and include attention deficit and hyperactivity disorder (ADHD), oppositional defiant disorder (ODD) and conduct disorder (CD).[17–20] CD, for example, is associated with high societal and economic burden including early school dropout, poor marital adjustment, poor job performance, incarceration and physical health problems. This accounts for about 1% of all years lived with disability.[18,19,21–24]

Aboriginal children and access to health care

For Aboriginal people, health is understood from a holistic point of view. It includes the concepts of physical, mental and emotional health as well as social, spiritual and cultural wellbeing, and connection to country.[25] The term 'Social and Emotional Wellbeing' (SEWB) reflects this belief.[26,27] Past and ongoing injustices associated with colonisation and intergenerational psychological trauma have had an impact on the SEWB and education outcomes of Aboriginal people.[26–29] Aboriginal students demonstrate lower pre-school and school attendance, retention and achievement than non-Aboriginal students.[6,26–28,30] Post-school qualifications, labour force participation and employment rates are lower in Aboriginal students[31] as is general socio-economic status, health and wellbeing.[28,32] Aboriginal people are vulnerable in the context of mental health disorders, with higher prevalence rates and lower levels of service use.[25,33–36]

Yudi Gunyi School and Ngaramadhi space

Yudi Gunyi School (YGS) is a 'School for Special Purposes (SSP)' located in inner-city Sydney, Australia, for students aged 10–16 years who need additional support with problematic externalising behaviour and mental health needs. There are about 34 students enrolled at the school at any one point with enrolments occurring throughout the year.[37] The aim of the school is to successfully transition students back into a mainstream school through an individual case-management approach.[37]

YGS in collaboration with the health sector has developed an innovative model of care to improve outcomes for students.[37] The clinical component of the model is built around a multidisciplinary team which provided a comprehensive assessment of a student's health, education and social care needs.[38] The broader health team included a paediatrician, psychiatrist, youth health nurse, trauma-informed occupational therapist and trauma-informed speech pathologist. The education representatives were the school counselling team, art therapist and specialist teaching staff. The social care representative was the school social worker. In order to provide family-centred care, when concerns were raised about siblings of students they were also reviewed by the team. The model of care was in line with the NSW Department of Education's Wellbeing Framework which outlines a commitment towards 'teaching and learning environments that enable the development of healthy, happy, successful and productive individuals'.[39]

The team worked collaboratively through a purpose-built area in the school named 'Ngaramadhi Space' (NS). 'Ngaramadhi' means 'active listening' in the Dharawal language, the name gifted to the school as a result of ongoing collaboration with the local Aboriginal community[37] who also formed part of the Wouwanguul Kanja steering committee that oversaw the initiative and its evaluation. The 'NS assessment' refers to an assessment between the parents and student with representatives from the health and education sector. In most instances, this included the paediatrician, youth health nurse, social worker and school counsellor. This team would then refer or consult with the broader team as needed. For example, some students were referred to the speech pathologist for an assessment and/or therapy while others would be discussed with the psychiatrist for management advice.

The overall model of care at NS and a concurrent qualitative evaluation will be described in a subsequent article. In the interim, we aim here to describe the population assessed at NS in terms of demographics, attendance to the clinic, health and wellbeing screening, recommendations made and changes in behaviour.

Methods

Participants

This was a retrospective evaluation of all students attending NS between 26 July 2016 and 14 May 2019 using de-identified electronic medical record (EMR) data. When students were enrolled at YGS they were offered a voluntary, comprehensive multidisciplinary health assessment at NS.

Pathway through NS

At YGS, students were referred from a mainstream school due to problematic externalising behaviour. In most instances, the problematic behaviour was repeated over a 6–12 month period and had led to suspension from school or resulted in a significant threat to the safety of staff or other students. If assessed as being appropriate for placement at YGS the student proceeded to enrolment when a place became available.

Prior to seeing students information about the student was gathered. The school counsellor provided a file summary for the student which included information about the family, prior assessments and supports provided. The teacher provided a CADDRA report and completed a Strengths and Difficulties Questionnaire (SDQ teacher version).[40,41] The paediatrician provided a summary of available health information.

At the assessment, those present usually included a paediatrician, youth health nurse, social worker and school counsellor. A comprehensive assessment including history-taking, HEEADSSS psychosocial assessment, physical examination, hearing, vision and dental screening, and a parent and student SDQ.[42] The multidisciplinary team then reflected on the assessment and presented the main issues and recommendations to the student and family. Where possible, students would be linked into existing services such as established community paediatric clinics or mental health services. When this was not possible, other avenues would be explored. Written medical and research consent was also completed.

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Instrumentation

Socio-demographic data from the health service EMR was extracted and included age, gender, race, ethnicity, primary language spoken, and interpreter requirement. Other data collected included engagement with a paediatrician or mental health service, previous or current open case with child protection services (Department of Communities and Justice (DCJ)) and prior diagnoses.

The SDQ was used to measure SEWB.[43] The SDQ consists of 25 questions that were scored according to five subscales: conduct problems, emotional problems, hyperactivity/inattention problems, peer relationships and kind and helpful behaviour. An overall score and risk prediction was made for total difficulties and the impact of the behaviours.[43] The SDQ was completed by parents, teachers and students aged 11 years and older. The SDQ was collected at the initial visit and when the student returned to their home school on a full time basis. This was because students returned to their home schools at varying times based on their individual progress, usually between 12 and 18 months after attending YGS. The psychometric properties of the SDQ have satisfactory internal consistency, test–retest stability and validity including[43,44] acceptability among the Aboriginal community.[33–36,40,43,45,46]

Data collection

Physical health data, clinical activities and SDQ results were collected and entered into the electronic database 'Research Electronic Data Capture (REDCap)' tool by NS team members.[47] Critical REDCap security components involve user authentication and role-based security.[47]

Data analysis

Data were exported from REDCap into SPSS Software in a de-identified format for analysis. Analyses were focused on descriptive statistics (proportion, mean, SD and range). Change in SDQ scores were assessed for statistical significance, defined as $P < 0.05$, using a student's t-test after tests of normality were conducted.

Human subjects approval statement

Full ethics applications were received from the Sydney Local Health District Human Research Ethics Committee (SLHD HREC), NSW State Education Research Applications Process (SERAP) and Aboriginal Health and Medical Research Council (AH&MRC).

Results

Demographics

Over the period between 26 July 2016 and 14 May 2019, there were 80 students enrolled at YGS. All students were offered a NS assessment with 79 agreeing to participate. All students who agreed to participate went forward to an assessment where data was collected and then entered into the EMR. The mean age of students was 12.7 years (range 2.8–16.2). The younger students were siblings of students. Males represented 63.3% of the sample and females 35.4%. The majority of students self-identified as being Australian Caucasian (48.1%). Aboriginal children formed 35.4% of the NS population, compared with 2.8% of the general Australian population.[48] English was the predominantly spoken language and no interpreters were required (Table 1).

Involvement of other services

Prior to the assessment, other services were involved with the students. In this cohort, 22.8% of parents reported that their child had a paediatrician. Of these, about a third of parents (33.3%) reported that the student was not seeing the paediatrician regularly. Similarly, 27.8% parents reported that their child was seeing a psychiatrist and/or counsellor but of these 18.2% were not engaged in regular visits with the service. Child protection services (DCJ) had prior but no current involvement with 43% of students and 32.9% had an open case with DCJ.

Attendance

Attendance at the assessment was high with a 7.6% failure to attend rate and 8.9% cancellation rate. The reasons for failure to attend were varied. The reasons for cancellations included clinic variables such as the clinician becoming unavailable (28.6%) or because the parent was unable to take time off work (28.6%). In about a third of cases cancellations were because of the child's behaviour, for example the child was being oppositional, demonstrating aggressive behaviour or had absconded.

Clinical activity

Ideally, all students would have been reviewed by the full multidisciplinary team. For various reasons, including staff availability and changes to staffing, this was often not feasible. Overall, almost all the students were assessed by a paediatrician (97.5%)

Table 1 Demographic information

	Number	Percentage
Age		
Mean	12.7	
Range	13.4	
Minimum	2.8	
Maximum	16.2	
Gender		
Female	28	35.4
Male	50	63.3
Cultural background		
African	1	1.3
Australian Caucasian	38	48.1
Indigenous Australian	28	35.4
Korean	1	1.3
Lebanese	2	2.5
New Zealand Maori	2	2.5
Not recorded	7	8.9
Preferred language		
English	78	98.70

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with most being assessed by a youth health nurse (67.1%), a school counsellor (60.8%) and social worker (49.4%). There was a period of between 12 and 18 months when a social worker was not available, accounting for this lower figure. The majority of students received a medical history review (97.5%), physical examination (88.6%), hearing screening (59.5%), vision screening (63.3%) and dental screening (63.3%).

Diagnostic information

The main reasons for referral were behavioural concerns (84.8%), learning difficulties (24.2%), absenteeism (12.7%), emotional wellbeing concerns (12.7%) and social concerns (12.7%) (Table 2).

Diagnoses recorded prior to the assessment included behavioural concerns (63.3%) and absenteeism (24.1%). A mental health diagnosis was present for many. These included ADHD (39.2%), ODD (21.5%), CD (12.7%) and Autism Spectrum Disorder (ASD, 3.8%). Learning difficulties, a medical diagnosis and a mental health diagnosis were recorded in 20.3%, respectively. In 6.3%, deliberate self-harm or suicidality was identified. Social vulnerabilities included a trauma background (27.8%), domestic violence (26.6%) and experiencing foster care/out-of-home care (12.7%).

At the NS assessment, the following additional diagnoses were made: ADHD in 3.8%, ASD in 1.3%, CD in 1.3% and ODD in 1.3%. More notable increases in diagnoses included eliciting a history of trauma (27.8%), emotional concerns (16.5%), domestic violence (12.7%), learning difficulties (12.7%), medical diagnoses (10.1%) and out-of-home care (7.6%). A further 3.6% students were identified as experiencing deliberate self-harm/suicidality.

The clinical assessment added to a holistic understanding of the social factors and trauma experienced by the children. These included parental separation 31.6% (previously identified in 5.1%), substance use 19% (previously 7.6%) and the death or loss of a close relative or friend 8.9% (previously 1.3%). New medical diagnoses were also made including obesity 13.9% (previously 5.1%), sleep difficulties 8.9% (previously 3.8%) and sexual health concerns 2.5% (previously 0%).

Recommendations from the assessment

Health

The most common health recommendations were referrals to a youth health service (43%), dental services (36.7%), ongoing paediatrician review (20.5%), drug and alcohol services (16.5%), nutrition services (17.7%) and disability services (5.1%). Medication management was required in 13% (Table 3).

Mental health

Common mental health recommendations were counselling (82.3%) and art/music/play therapy (44.3%), which were often accessed at YGS.

Table 2 Summary of referral reasons, previous diagnoses and new diagnoses

Referral reason			Previous diagnosis		New diagnosis	
	n	%	*n*	%	*n*	%
Absenteeism	10	12.7	19	24.1	1	1.3
ADHD	13	16.5	31	39.2	3	3.8
ASD	1	1.3	3	3.8	1	1.3
Behavioural concerns	67	84.8	50	63.3	3	3.8
Conduct disorder	2	2.5	10	12.7	1	1.3
Death or loss of close relative or friend	0	0	1	1.3	7	8.9
Deliberate self-harm/suicidality	0	0	5	6.3	3	3.8
Dental concerns	0	0	4	5.1	6	7.6
Domestic violence	0	0	18	22.8	10	12.7
Emotional concerns	10	12.7	21	26.6	13	16.5
Hearing concerns	0	0	1	1.3	0	0
Injury	0	0	3	3.8	2	2.5
Learning difficulties	19	24.1	16	20.3	10	12.7
Medical diagnosis	2	2.5	16	20.3	8	10.1
Mental health diagnosis	6	7.6	16	20.3	0	0
Obesity	0	0	4	5.1	11	13.9
Oppositional defiant disorder	5	6.3	17	21.5	1	1.3
Out-of-home care	0	0	10	12.7	6	7.6
Parental separation	0	0	4	5.1	25	31.6
School refusal	3	3.8	0	0	0	0
Sexual health concerns	0	0	0	0	2	2.5
Sleep difficulties	0	0	3	3.8	7	8.9
Social concerns	10	12.7	10	12.7	11	13.9
Substance use	3	3.8	6	7.6	15	19
Trauma background	0	0	22	27.8	17	21.5
Vision concerns	0	0	6	7.6	4	5.1

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Table 3 Recommendations

Recommendations	Number	Percentage
Audiology	9	11.4
Art/Music/Play therapy	35	44.3
Case management agency	19	24.1
Cognitive/Developmental/Behavioural assessment	34	43.0
Continue with current mental health service	10	12.7
Counselling	65	82.3
Dental services	29	36.7
Department of communities and justice	3	3.8
Domestic violence services	9	11.4
Drug and alcohol services	13	16.5
Extracurricular activities	39	49.4
Housing support	17	21.5
Immunisations	2	2.5
Investigations	4	5.1
Learning support	52	65.8
Medication	9	13.0
National disability insurance scheme	4	5.1
Nutrition support	14	17.7
Occupational therapy	58	73.4
Optometrist	14	17.7
Paediatrician review	22	27.8
Parenting course	16	20.3
Referral to a mental health service	3	3.8
Referral to a medical service	6	7.6
School/Work transition programme	19	24.1
Sexual health management	7	8.9
Sibling review	4	5.063291139
Smoking cessation advice/programme	4	5.1
Speech therapy	55	69.6
Stable environment	16	20.3
Strengths-based approach to learning	29	36.7
Youth health service	36	43

Education

Education-based recommendations included trauma-informed occupational therapy (73.4%), trauma-informed speech therapy (69.6%) and extracurricular activities (49.4%). Recommendations were also made for a strengths-based learning approach (36.7%) and learning support (6.5%) particularly to assist students to access support on return to mainstream schooling.

Social care

Social care recommendations included referral to a case management service (24.1%), parenting course (20.3%), domestic violence service (11.4%) and child protection service (3.8%). Provision of housing support was made in 21.5%.

Strengths and Difficulties Questionnaire

SDQ teacher reports were provided for most students before the initial NS assessment. It was more difficult to obtain follow-up SDQ teacher reports when a student returned to their home school. As a result of this completed data sets from before the student attended the clinic and after a student left the school was small ($n = 33$). Analysis of the available paired data sets showed a statistically significant decrease in total difficulties scores (M = 6.2, SD = 6.165, $P < 0.05$, eta squared = 1.013 (large effect)) and all subsets including behavioural/conduct difficulties (M = 1.8, SD = 2.4, $P < 0.05$, eta squared = 0.741 (medium effect)) and hyperactivity and concentration difficulties (M = 2.8, SD = 2.4, $P < 0.05$, eta squared 1.15 (large effect)). There was also a significant decrease in impact scores (M = 1.636, SD = 1.8, $P < 0.05$, eta squared = 0.909 (large effect)) (Table 4).

There were no significant differences in the parent ($n = 12$) and self-reported SDQ ($n = 12$).

Discussion

For students attending YGS, problematic externalising behaviour prohibited their ability to attend mainstream schooling and placed them at risk of negative social and life-course outcomes. Unsurprisingly, many of the students had a pre-existing mental health diagnosis with ADHD, ODD and CD being common findings.[10,12] The finding that child protection services were involved with 75% of students further points to the increased risk of psychological trauma experienced by this population. Despite these risk factors only about a third of students were being seen by paediatric or mental health services and of these students about 20–30% were not regularly engaged with the named services reflecting the difficulty these students have in accessing and engaging with traditional health services.[1,5,10]

By partnering with YGS, high initial attendance rates at the NS assessment were achieved. This was indicative of improved access to care and acceptability of school-based health-care models. The literature supports this finding with other studies showing that schools provide an accessible and convenient opportunity to provide health services.[7,16,49–51] Some of the reasons for non-attendance were elucidated in this evaluation. An important reason included the student's behaviour. So, not only did these children require support with their behaviour but it was that very behaviour that prevented them from accessing traditional health services. Parents being unable to take time off work was another key reason for non-attendance, indicating that flexibility in service delivery was required.[5]

The integrated approach at NS allowed for a more holistic understanding of students and families to be gained, in line with Aboriginal concepts of SEWB. This included the impact of experiencing trauma as well as identifying untreated medical and mental health concerns. Additionally, health concerns that typically arise in adolescence were identified including obesity, sexual health and reproductive health, drug and alcohol issues and sleep difficulties.[5,10,11] The multidisciplinary team were able to meet those needs by assisting with referrals and recommendations.

The SDQ was used to assess changes in behaviour. There was a statistically significant decrease in all the domains of the teacher-reported SDQ. These results are likely to be a reflection of the overall integrated partnership between health and education across the school rather than NS alone. The multidisciplinary assessment allowed a student's individual needs in the context of their family and social circumstances to be understood which informed the strategies used by the education team and therapists. The SDQ finding was promising because improvements in

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Table 4 Strengths and Difficulties Questionnaire (SDQ) pre- and post-teacher 11–17 years ($n = 33$)

Paired samples test

	Paired differences								
				95% Confidence interval of the difference					
SDQ teacher 11–17 years old	Mean	Standard deviation	Standard error mean	Lower	Upper	*t*	*df*	Sig. (two-tailed)	Eta squared statistic (Cohen)
Total difficulties	6.242	6.165	1.073	4.057	8.428	5.817	32	0.000002	1.013 (large effect)
Emotional distress	0.970	2.365	0.412	0.131	1.808	2.355	32	0.025	0.450 (small effect)
Behavioural/Conduct difficulties	1.758	2.372	0.413	0.916	2.599	4.256	32	0.0002	0.741 (medium effect)
Hyperactivity and concentration difficulties	2.758	2.398	0.417	1.907	3.608	6.605	32	0.0000002	1.15 (large effect)
Difficulties getting along with others (peers)	0.758	1.985	0.346	0.054	1.461	2.193	32	0.036	0.382 (small effect)
Kind and helpful behaviour (prosocial)	−0.697	1.630	0.284	−1.275	−0.119	−2.457	32	0.200	0.428 (small effect)
Impact	1.636	1.800	0.313	0.998	2.274	5.223	32	0.00001	0.909 (large effect)

behaviour created opportunities for students to better access the education curriculum.[37]

The need to achieve health equity necessitates community and institutional frameworks that understand and embrace the vital connection between health and education.[4,6,52] Collaboration between these two sectors is mutually beneficial and demands sustainable and productive partnerships.[52–54] School-based integrated health care offer opportunities to address the shortcomings of health delivery systems. It allows health providers to leverage the trust students and families have with the school while also providing familiarity and a sense of safety.[3,5,7,13] It allows students to miss less time from class and parents less time off work.[55,56] Additionally, the Aboriginal community value a 'whole of the child' approach[57] which maximises limited resources and increases health service utilisation.[30,58]

Limitations

One of the limitations of this study was the small sample size. This reflects the size of the school whereby about 34 students are enrolled at any point. While we were able complete initial SDQ questionnaires it was more challenging to complete the follow-up questionnaires. For example, only 33 follow-up teacher SDQ questionnaires were completed and 12 follow-up parent SDQ questionnaires were completed. This was due to resource constraints which restricted the ability of clinicians to contact teachers, parents and students. Furthermore, the decision to transfer students back to their home schools was often made within a short timeframe and this process created competing priorities for all involved.

Furthermore, the researchers decided to complete the final SDQ when students had successfully transitioned back to their mainstream school rather than at a specific time period. This was because progress to this point varied considerably for each child. It was recognised that behavioural change is an individual journey that differed between children depending on their personal, family and social circumstances. While this could lead to inconsistencies in measurement, it was appropriate in this context.

Another important limitation in this study was the lack of a comparison group. Ideally, students at the school could have been randomised to either receive a NS assessment or not receive a NS assessment. This approach was ethically challenging though given the high needs of the students attending the school and was equally unacceptable by the community-governed Wouwanguul Kanja steering committee. To understand how the NS assessment in conjunction with the approach of the school as a whole, a qualitative study taking into account the multiple perspectives of students, parents and staff is required.

Conclusions

Children and families experiencing problematic externalising behaviour at YGS often have unmet health and socio-emotional wellbeing needs. The multidisciplinary NS model offered mechanisms to reduce barriers to care with high attendance rates suggestive of the acceptability of this model. Teacher SDQ results showed improved behaviour and thus an opportunity for students to engage with the education curriculum. Further qualitative research is required to understand the model from the perspective of students, parents/caregivers, staff and the community.

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Chapter 8 Qualitative Evaluation

8.1 Introduction

In this chapter the findings from the qualitative study are described (Objectives 4 and 5).

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RESEARCH AND THEORY

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ABSTRACT

Introduction: The unmet physical and mental health needs of school-aged children (5–18 years) in New South Wales (NSW), stemming from poor access and engagement with healthcare, can be addressed by school-based integrated care (SBIC) models.

This research aims to understand why and how partnerships between the health and education sector, in SBIC models, are important in providing care for children, and to identify the facilitating factors and barriers for implementation.

Methods: A qualitative study was conducted using semi-structured interviews and thematic analysis. The principles of the 'Integrated People-Centred Health Service (IPCHS)' framework and Looman et al's (2021) implementation strategies for integrated care were considered.

Results: Themes within IPCHS framework: Strategy 1: Engaging and empowering people and communities – community-driven models, improved access to healthcare, positive outcomes for children and families, 'connection', and service provision for marginalised populations; Strategy 2: Strengthening governance and accountability – system integration and developing evidence base; Strategy 3: Reorienting the model of care – shifting healthcare to schools reduces inequity and provides culturally safe practice; Strategy 4: Coordinating services within and across sectors – integrating care and stable workforce; Strategy 5: Creating an enabling environment: leadership, stakeholder commitment, and adequate resourcing.

Discussion: Potential strategies for implementing SBIC models across NSW include community consultation and co-design; building multidisciplinary teams with new competencies and roles e.g. linkers and coordinators; collaborative and shared leadership; and alignment of operational systems while maintaining a balance between structure and flexibility.

Conclusion: SBIC models require high-level collaboration across sectors and with communities to provide a shift towards child and family centred care that improves engagement, access and outcomes in health delivery.

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School-based integrated care; Integrated People-Centred Health Service (IPCHS) framework; implementation of integrated care

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INTRODUCTION

School-aged children (5–18 years) frequently have unmet physical and mental health needs due to poor access and engagement with health services [1–3]. This issue disproportionately affects Aboriginal children and children living in rural New South Wales (NSW) [4–6]. School-based healthcare (SBHC) has re-emerged in Australia as a mechanism of integrating education, health and wellbeing services [7, 8]. Internationally, similar models show improved health outcomes, education outcomes, access to healthcare, high acceptability, and favourable cost-benefit ratios [9–11].

In Sydney Local Health District (SLHD), an integrated model of care has been established with schools and the community [12]. Integrated care can be described as the bringing together of the fragmented parts of a health system to optimise care [13, 14]. The SLHD model provides comprehensive and holistic health and wellbeing assessments for children delivered at local schools by a multidisciplinary team with representatives from the health, education and social work sector [12]. The value of integrating care by collaboration across sectors has led to the model being called 'school-based integrated care (SBIC)'. The pilot for the initiative, Ngaramadhi Space (NS), was established at a school for students experiencing problematic behaviour (Yudi Gunyi School (YGS)) [12]. A quantitative evaluation of NS showed improved access to healthcare for students with high attendance rates and significant improvements in teacher reported behavioural scores [15].

The NS model of care has been replicated in four schools within SLHD under the name 'Kalgal Burnbona', meaning 'to surround family' in the Dharawal language of the local Aboriginal community. Other SBIC models have independently emerged across NSW [7]. The ground swell of interest in implementing SBIC has led to the formation of a community of practice (COP).

The aim of this qualitative research study was to understand why and how partnerships between the health and education sector, in SBIC models of care such as NS, were important in providing care for children, and to identify the facilitating factors and barriers to this process. To assist with this understanding, the principles of the 'Integrated People-Centred Health Service (IPCHS)' framework (Figure 1) and Looman et al's (2021) underlying implementation strategies for integrated care (Figure 2) were considered [16]. The IPCHS framework proposes five strategies to transform health service delivery so that it is more responsive to people's needs [14]. Looman proposed ten implementation strategies for scaling up integrated care initiatives (Figure 2) [16]. The IPCHS framework was used to contextualise the main themes from the data analysis while Looman's implementation strategies were used to derive mechanisms for broader scaling up of the SBIC model [14].

RESEARCH METHODS

STUDY DESIGN AND METHODOLOGY

A critical realist-informed three-phase, sequential mixed method study was designed (Figure 3). Critical realism is a philosophical system where 'realism' describes a natural world that exists outside of our interpretations of it, and 'critical' refers to the study of science through the

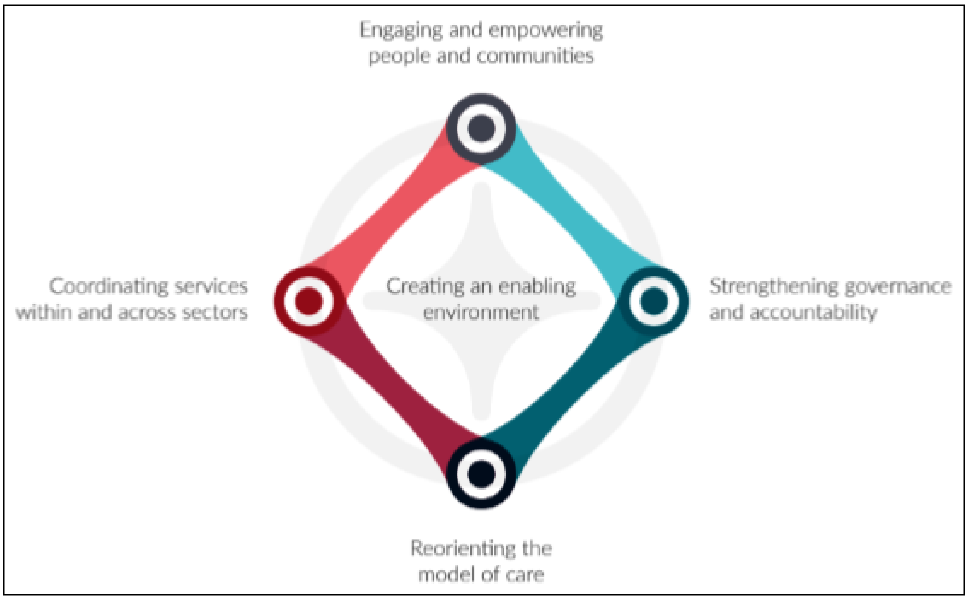

Figure 1 The five interdependent strategies of the WHO Framework on integrated people-centred health services (IPCHS) [14].

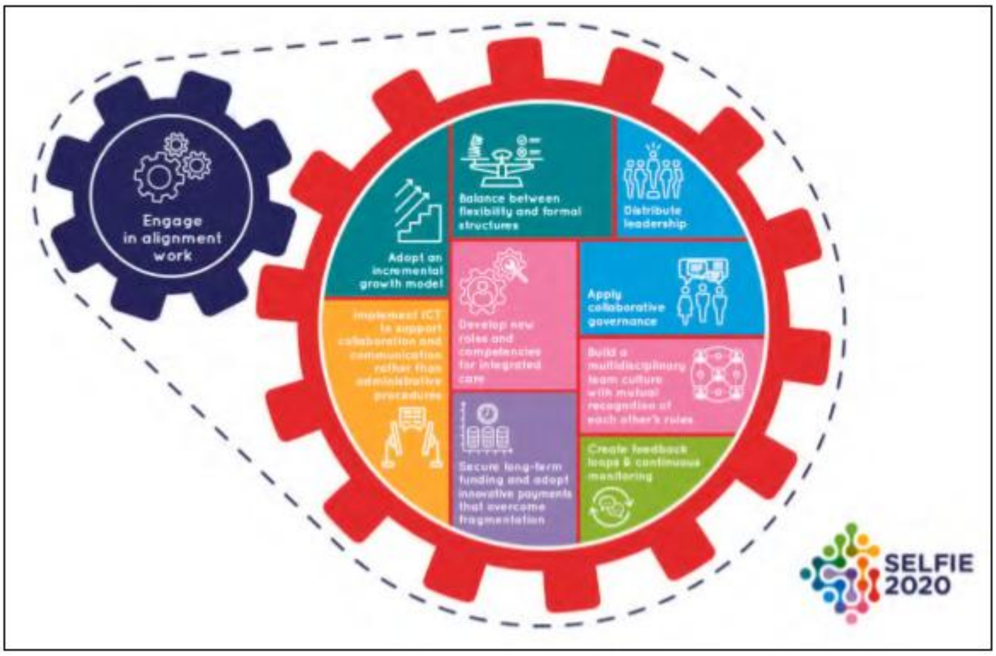

Figure 2 The 10 implementation mechanisms for integrated care for multi-morbidity [16].

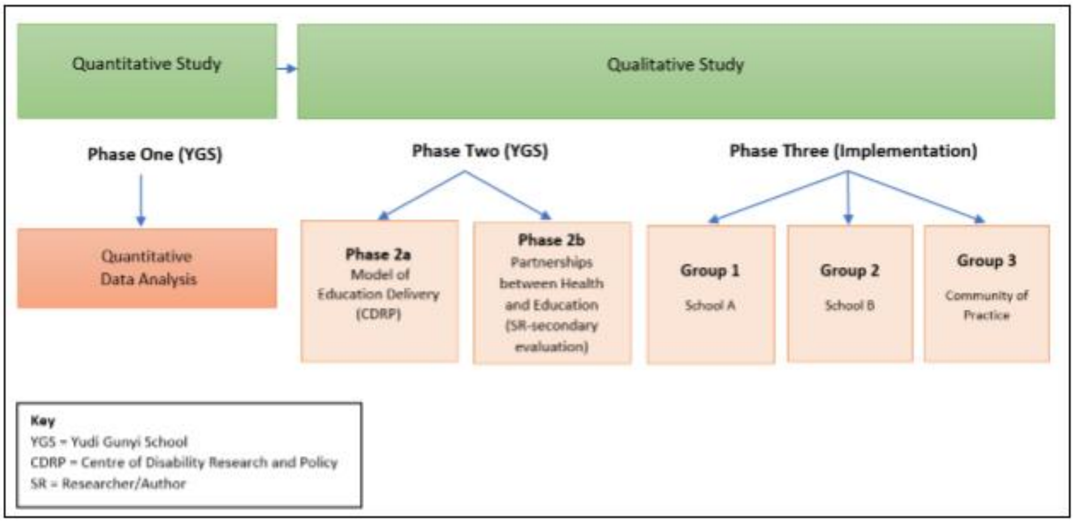

Figure 3 Diagram showing the design of the research study.

interactions of human language and social powers over time [17, 18]. Critical realism is relevant to this research because SBIC has emerged as a potential solution for inequitable health, education and social outcomes observed within local communities. This study aims to understand the 'nature' or mechanisms behind SBIC models, particularly the facilitating factors and barriers to this process.

Phase 1 was a quantitative study of NS that has been described previously [15]. The qualitative research was conducted in two phases using the COREQ checklist [19]. Phase 2 involved YGS and was undertaken in two parts with a focus on the model of education delivery, and partnerships between the health and education sector. Phase 3 studied how the SBIC model had been replicated at other sites and focused on understanding the barriers and facilitators to successful implementation.

SETTING AND PARTICIPANTS

Phase 2 was conducted at YGS by two researchers from the Centre of Disability Research and Policy (CDRP), including an Aboriginal researcher (August–

September 2022). Participants included Aboriginal community members, education leaders, teachers, NS team members, students and parents. Phase 3 was conducted by SR with two of the four SLHD sites that had implemented the NS model, and the COP (November 2022–February 2023). Participants included paediatricians, school counsellors, school principals, social workers and other stakeholders.

RECRUITMENT, INTERVIEWS AND DATA MANAGEMENT

Phase 2 participants were contacted by the YGS social worker. Phase 3 participants were contacted by a research assistant with the first two schools to agree to participate included. After written consent was received, semi-structured interviews were conducted in person or via videoconferencing using audio recording and an interview guide (Appendix A and B). Support people were permitted, and participants could review and edit their interview transcript prior to analysis. All participant information sheets clearly stated confidentiality and voluntary participation. Table 1 summarises the anticipated and actual number of participants.

DATA ANALYSIS

De-identified data was analysed using Braun and Clarke's Thematic Analysis Framework where the methodological study of patterns within qualitative data to uncover meaning are described [20]. A reflective process was undertaken after each interview through note-taking or debriefing to identify emerging themes [21]. Data was manually 'coded' using Nvivo qualitative data analysis software [22]. SR and HML held in-depth discussions after the initial thematic analysis to triangulate and reach agreement on emerging findings. SR is a dual-trained general paediatrician and community paediatrician with a Master of Public Health and Tropical Medicine. HML is public health physician with a Master of Public Health and a PhD.

The ontological and epistemological views of both researchers were positioned in the middle with the importance of both objective and subjective information being recognised. Utilising a critical realist approach, abductive reasoning, meaning the application of logical inference to seek the simplest and most likely conclusions, and retroductive reasoning, meaning to use prior knowledge and available evidence to explain an observation, was used to then identify themes within the

SITE	PARTICIPANT GROUP (ABBREVIATION)	ACTUAL PARTICIPANTS/ANTICIPATED PARTICIPANTS
Ngaramadhi Space (NS)	School Principal (SP)	1/1
	School Executive (SE)	2/2
	School Teacher (ST)	6/7
	Social Worker (SW)	1/1
	Occupational Therapist (OT)	1/1
	Speech Pathologist (SP)	1/1
	Paediatrician (PD)	1/1
	Aboriginal Community Member (ACM)	2/3
	School Student (SS)	3/5
	Parents/Caregiver (PC)	0/4
School A	School Counsellor (SC)	2/2
	Social Worker (SW)	2/2
School B	School Principal (SP)	1/1
	School Counsellor (SC)	1/1
	Paediatrician (PD)	1/1
Community of Practice (COP)	Director of Community Paediatrics (DCP)	1/2
	Rural General Practitioner (RGP)	1/1
	Director of Non-Governmental Organisation (DNG)	1/1
	Researcher (RES)	1/2
	Total	**29/39**

Table 1 Table showing the anticipated and actual number of study participants.

WHO's five strategies and emerging strategies around implementation [23]. The next stage of analysis involved further triangulation, abductive and retroductive reasoning to align these themes with Looman's implementation strategies. Care and a reflexive approach were taken to avoid over-interpretation of quotes and themes that would lead to a bias where data was made to 'fit' into the frameworks described [21].

ETHICAL CONSIDERATIONS

To ensure the safety and comfort of the students involved, support persons were permitted during interviews, and the researchers were experienced in working with students.

As a clinician researcher, SR mitigated the risk of coercion by having a research assistant contact potential participants. Deidentified data was provided to SR for Phase 2 to reduce the risk of identifying participants. Furthermore, school names have been de-identified with the exception of YGS/NS because this school has appeared in earlier publications. For NS, the persons in each role have changed many times, which reduced the risk of identifying individuals. Additionally, all participants could review and edit their transcripts. Ethics approvals were received from SLHD Human Research Ethics Committee (SLHD HREC), Aboriginal Health and Medical Research Council (AH&MRC) and State Education Research Applications Process (SERAP).

RESULTS

PARTICIPANTS

De-identified data from all 18 participants from NS (Phase 1) was included in the analysis. In Phase 2, there were 4 and 3 participants from School A and School B respectively. There were 4 participants from the COP who discussed SBIC models in Southwestern Sydney Local Health District (SWSLHD), Illawarra Shoalhaven Local Health District (ISLHD) and Southern NSW Local Health District (SNSWLHD). The characteristics of the SBIC programs are described in Table 2.

ANALYSIS

Strategy 1: Engaging and Empowering People and Communities

Engaging and empowering people and communities relates to providing the opportunity, skills and resources for people and communities to make effective decisions about their own health and their role in producing health-promoting environments. This strategy speaks to the ability to reach and co-design health services for marginalised populations [14]. The following themes relating to this strategy were derived from the data.

Theme 1: Community-Driven Models of Care

Participants described the community-driven development of SBIC models across NSW. Although the models were developed independently of each other, they all involved collaboration between the health, education, and social care sectors with input from the community. For example, the ISLHD model was driven by the community because of concerns that students were missing school to attend medical appointments, *"So the solution then was to have a physical hub within the school"* [RES]. In SWSLHD, a NGO developed a SBIC to foster community connections in an area experiencing high social disadvantage:

> *"Belonging to community, belonging to school… trying to create that sense of connectivity in the community."* [DNG]

SNSWLHD is a rural area where a GP-led SBIC was developed to improve access to paediatric care in the context of *"a very traumatised community with multi-generational trauma, people from the stolen generation… quite high rates of domestic violence, crime and social housing"* [RGP] as well as geographic isolation and being impacted by bush fires, flooding and the Covid pandemic.

Theme 2. Improved Access to Healthcare

Across all sites, participants described how SBIC programs addressed the challenges of engaging and navigating mainstream health pathways which included waiting lists, fee-for-service models, complex processes, and inflexible eligibility criteria. Positioning health services at schools helped remove these barriers with schools perceived as being familiar, convenient, and trusted. Families seen at SBIC sites were described as experiencing *"a sense of relief at finally being able to access care."* [RES] This was particularly noticeable for priority populations who would have otherwise *"slipped through the gaps"* [SW1] or those who were reluctant to access healthcare in a mainstream setting:

> *"An example would be a victim of the stolen generation. They're not gonna want to go into a big, scary hospital to try and access care for their child, whereas they're used to taking their kid to the school. You know it's much less threatening."* [RGP]

Theme 3. Positive Outcomes for Children and Families

Children benefited from accessing health services at school. This included receiving diagnostic and therapeutic support for behavioural, developmental and physical health concerns. For example, one student received treatment for a recurrent sexually transmitted infection, while the multidisciplinary approach prevented another

SCHOOL CHARACTERISTICS	SYDNEY LOCAL HEALTH DISTRICT			SOUTHWESTERN SYDNEY LOCAL HEALTH DISTRICT	ILLAWARRA SHOALHAVEN LOCAL HEALTH DISTRICT	SOUTHERN NSW LOCAL HEALTH DISTRICT
	SCHOOL A	SCHOOL B	YUDI GUNYI SCHOOL			
Type of School	Government	Government SSP*	Government SSP*	Government	Government	Government
Year Group (K-12)**	K-12	K-6	6–12	K-6	K-6	7–12
Location	Major Cities NSW	Major Cities NSW	Major Cities NSW	Major Cities NSW	Inner Regional NSW	Outer Regional NSW
Number of students (n)	1034	34	27	287	454	563
Female (n %)	448 (43%)	6 (18%)	6 (22%)	138 (48%)	223 (49%)	253 (45%)
Male (n %)	586 (57%)	28 (82%)	21 (78%)	149 (52%)	231 (51%)	310 (55%)
Indigenous students (%)	17%	24%	52%	13%	51%	12%
CALD background*(%)**	57%	43%	25%	75%	4%	5%
ICSEA score and centile^	1037 (64th)	934 (18th)	851 (4th)	880 (7th)	783 (2%)	946 (23rd)
SEA Distribution^^						
- **Bottom quartile (25%)**	19%	46%	63%	71%	80%	48%
- **Middle quartile (25%)**	19%	23%	24%	20%	14%	31%
- **Middle quartile (25%)**	28%	16%	9%	8%	5%	14%
- **Top quartile (25%)**	34%	16%	4%	1%	1%	6%
IRSD^^^ **1 = most disadvantaged** **5 = least disadvantaged**	5	3	4	1	1	1

Table 2 Characteristics of schools included in this study.

*SSP = School for Special Purposes.

**K-12 = Kindergarten to Year 12.

***CALD = Culturally and linguistically diverse.

^ ICSEA = Index of Community Socio-Emotional Advantage. The Australian average is 1000 [24].

^^ SEA = Socioeconomic Advantage. The Australian average is 25% for each quartile [24].

^^^IRSD = Index of Relative Socio-Economic Disadvantage (IRSD) ranking for surrounding suburbs to school [25].

child from being referred to a specialised behavioural school. The following quotation explains these types of benefits:

> *"We found improvements in the [Strengths and Difficulties Questionnaires] of kids [that] were maintained…and in quality of life… The mental health of the parents and their self-efficacy also improved. We saw a protective effect in terms of behaviour[al] incidents in schools."* [RES1]

Theme 4: Connection

A sense of connection was facilitated by SBIC. Health and education staff recognised the importance of building relationships with children to help with engagement, while acknowledging that relationships between the health and education sectors helped foster a better understanding of students. The importance of building connections is illustrated below:

> *"I see part of my role as trying to understand the child's story"* [PD2]

> *"I say that to our staff, you've got to make connection to the kids – It's just about having conversations and yarns… just those simple little things can change a kid's life."* [AC2]

> *"Just to give them the best opportunities and also a bit of care, that care and kindness… It takes a long time to build that trust and … then you can actually start moving to those next steps."* [ST3]

Connection included engaging the *"whole of family"* [DNG] by providing better support to students in the context of their family and social circumstances. One participant believed that schools were a place that students could belong to, describing how allowing students to name a school allowed for this:

> *"You take the name; the kids pick the name. Yudi Gunyi means 'place of learning', they chose that. That gave them a sense of real responsibility ... Before it was [called] Yudi Gunyi, ...it was called Green Square Behaviour School. That's like saying a prison straight up."* [AC1]

Theme 5. Marginalised Population

Those seen at the various SBIC programs were described as underserved or marginalised because of the nature of their externalising behaviours and experiences of adverse childhood events. This made it difficult for them to engage with traditional health care services as exemplified in this quote:

> *"They're so complex and there's so much going on in their lives that they shouldn't be managing at that age or dealing with. Then they've got school on top of that...I like the fact that we've created this environment where these kids that just would fall through the cracks or whatever, they feel safe enough to come to a school setting."* [ST2]

At times, the level of challenging behaviour experienced in the school seemed to have an impact on staff wellbeing:

> *"Well [this] is definitely the most challenging school I've ever worked in...Here's the hardest, the most violent, without a doubt, externalising violent behaviours."* [ST3]

At times, the level of challenging behaviour experienced in the school setting led to medical staff feeling pressured to make immediate changes to a child's medication regime in response to problematic behaviour. Similarly, social workers felt that in advocating for the needs of children, staff did not always recognise the boundaries of the social worker's role. This created tensions around expectations from those involved.

Strategy 2: Strengthening Governance and Accountability

Strategy 2 of IPCHS framework discusses the importance of strengthening governance across all levels of the health system. Good governance is described as transparent and inclusive with efficient use of resources reinforced by a system for accountability. For SBIC, governance and accountability involved both the health and education sector and the complexities of this partnership are described under the following themes [14].

Theme 1. Integration of Systems

The health and education sectors were described as complex entities which made integration of systems for the purposes of governance challenging. Each sector had their own values and perceptions while operating within different hierarchical processes and systems. This led to lengthy processes in receiving approval to share information and to sign off documents e.g. Memorandum of Understanding (MOU) and contracts. Participants spoke of a 'silo' effect where each sector worked independently of each other with a paucity of understanding about what other sectors did.

Theme 2. Developing a Robust Evidence Base

For SBIC models to flourish and to build transparency and accountability, participants agreed that a robust evidence base was needed. To do so, clinically relevant indicators were required, and evaluation processes had to be embedded in the model. The challenges of evaluating SBIC was elaborated on and included agreement on outcome measurements and stable resourcing. Participants described challenges in defining 'success' because positive gains would not necessarily translate into better academic achievement:

> *"Because it's not students reaching these major academic goals or what have you. Success would be –it's very individualised. Would be just them having confidence in themselves."*[ST3]

> *"It's important they can come here and have wins, and even if those wins are tiny little incremental wins- it's taken a year for a girl to take off her double hoody... So, they're little, tiny wins that are huge."* [ST2]

Participants spoke about the difficulties associated with obtaining research consent in a clinical setting:

> *"It feels like in clinic that you're on a tightrope of sitting okay with the family ... but you can read the body language if it's becoming uncomfortable. And that's sort of where I feel like consent around research gets you to."* [PD1]

Strategy 3: Reorienting the Model of Care

Reorienting the model of care refers to a shift away from hospital-based healthcare to community-based healthcare by designing comprehensive and innovative models of care. In this section a shift towards basing healthcare at schools is highlighted as is the importance of 'one-stop shops' to the Aboriginal community.

Theme 1. Shifting Healthcare to Schools

SBIC models were seen as a mechanism to deliver a comprehensive lifespan approach to health and wellbeing that *"pivots and bends"* [RGP] to the changing needs of individuals. Basing health services at schools allowed more readily available access to care, creating an avenue to reduce inequity, *"A service delivered where it needs to be delivered for vulnerable children and families"* [RGP].

Participants, particularly Aboriginal community members, highlighted the value of having *"one stop shops"* [AC2]. This meant having all the services required by families located in the one place. Co-location though was not enough, and it was important for those services to work together to develop a holistic understanding of the child and family. Participants spoke about the importance of building a collaborative multidisciplinary culture, *"as [the team has] evolved, yeah, rehashing those conversations and re-establishing those expectations of each other"* [SW1]. The concept of a core multidisciplinary team that worked together was discussed along with the possibility of one group working across several schools:

> *"To scale it up…there needs to be a social worker, perhaps a mental health professional …and occupational therapist and speech [pathology] and the paediatrician…We would have one worker across multiple schools, and just doing those paediatric assessments with health and with education [and] we've got all of those insights as part of that assessment…"* [SW1]

Theme 2. Cultural Safety

The SBIC models were co-designed with local Aboriginal communities and described as improving access to healthcare for Aboriginal children. AC2 discussed how it could be difficult for Aboriginal families to engage with services:

> *"If it's speech or hearing, vision, whatever. We try to make sure that that happens, but that's not always easy… I'm always about connecting with the families, you know, those services are out there, but they need to make a connection with the families."* [AC2]

Some culturally-safe practices included displaying Aboriginal artwork or signage and employing Aboriginal staff. Participants spoke about how important it was for Aboriginal families to see familiar faces, and for professionals to take the time to build trust, communicate, and help individuals feel comfortable with a service. The following quote describes these features:

> *"[Aboriginal] people that live in the community, they are here for years, whichever medical centre they use, they go back because they feel comfortable and they can see your face. That they know there's not gonna be made judgment upon them or anything"* [AC2]

Strategy 4: Coordinating Services Within and Across Sectors

In Strategy 4 the importance of coordination within and across services to meet the needs of people are highlighted. This requires integration of systems including referral pathways and linkages across sectors to optimise resources and align processes [14]. In this section themes relating to how care was integrated within the SBIC models is elaborated on including barriers to this process.

Theme 1: Integrating Care

In a SBIC setting, participants unanimously valued the range of expertise and skill sets provided by a multidisciplinary approach including accessing diagnoses, treatment, referral pathways and social support. SBIC teams worked collaboratively by a process of sharing information and joint assessments. This allowed for a holistic understanding of families, as exemplified in the following quote:

> *"The Ngaramadhi Space is the health program that's part of the school which has the school counsellor, …paediatrician, nurse, social workers, OT and speech and art therapy and it works in conjunction with the school to support the kids in all of their needs. So it's really holistic so that [students] are able to flourish and ideally transition back to mainstream [schooling]."* [SE2]

Integrating care was seen as a more efficient way of working and allowed for timely transfer of information and a sense that *"we're covering all bases to support the students to learn and engage most effectively…"* [ST3].

One participant discussed how the multidisciplinary approach helped support students while *"building parents' and community members' confidence in the education system"* [ST2]. Teachers felt that the clinical assessments provided them with *"a snapshot of what's happened to this child. Understanding their triggers; understanding their point of view"* [ST2].

Participants described professional benefits from an integrated approach which included sharing of responsibilities and workload as well as knowledge exchange. For example, school counsellors valued having access to a paediatrician to discuss complex needs with and drew upon the paediatrician's knowledge to use new tools. Paediatricians described collaboration with schools as a powerful tool for diagnostic and therapeutic purposes:

> *"…the teachers see a lot of the features that [we] don't hear about … And these kids are really complicated…And I [make observations] on the playground …And that's an opportunity that we don't normally get, which is really fantastic."* [PD1]

Teachers and health staff described the pivotal roles played by school counsellors and social workers within SBIC models. School counsellors were able to bridge the gap between the health and education sector, in part because they understood the 'language' spoken by each sector but also because of their communication and relationship-building skills. The social worker and school counsellor were seen as playing essential roles in coordinating care as exemplified in this quote:

> *"In schools with children who are this complex, there is a need to link in with health…And I think a school counsellor could be [in that role]."* [SP2]

Education staff were admired by the various sectors for their ability to build trust and facilitate engagement with families as well as to anticipate emerging issues, as shown in the following quotation:

> *"[The] line of sight that the school has cannot be underestimated. They can anticipate months before [child protection services] that a child's wellbeing is on the downhill."* [DNG]

A key feature associated with integrating care was building on existing partnerships within the community to utilise resources more efficiently. For example, where available Wellbeing Health In-Reach Nurse (WHIN) coordinators and youth workers were integrated into SBIC models.

Challenges associated with cross-sector work were identified. Each sector had their own language and often worked independently of each other. The following quotes illustrate this finding:

> *"We've all got different lenses. So, you've got health models, social web models, school and education model… so I think that's where it can get complicated." [SW1]*

> *"Then siloing I reckon is probably one of the challenges… So, the way that health handles information is very different to the way that Department of Education handles information. So, getting all of those people to talk to each other and share information appropriately is hard… there are siloes everywhere." [SW4]*

Theme 2. Coordination and Stability of the Workforce

Coordination of services within the SBIC model was seen to be dependent on the people who staffed them. Changes in staff was described as a critical factor to the success of implementation with the model being vulnerable when "*charismatic people*" [DNG] or 'champions' left to pursue other opportunities. In two schools, the principal changed. The time required to recruit to this role lent fewer opportunities for a warm handover, which led to differences in expectations from the outset. One participant reflected on a need to prepare schools for what the SBIC would involve including a shared understanding about the purpose of the clinic and what outcomes could be expected. In addition, the participant believed that professional development sessions about trauma-informed practice would be a beneficial part of this preparation.

Primary healthcare services played an integral role in SBIC models with GPs and WHIN coordinators providing stability and an important connection to the health system particularly in rural communities where access to specialists could be limited.

Strategy 5: Creating an Enabling Environment

An enabling environment is required for all the four previous strategies to become operational. This strategy refers to an environment that brings stakeholders together to undertake transformational change and includes changes in workforce duties, management structures, information systems, funding platforms and policy [14]. In the following section the themes related to creating and enabling environment are discussed.

Theme 1: Leadership

Ongoing cross-sector leadership, persistence, and excellent communication skills were considered necessary for the health and education sectors to collaborate. The characteristics described were of "*stubborn determination*" [RGP1] and "*sheer perseverance*" [DCP]. Participants spoke of a sense of "*duty to the community*" [RGP] to "*improve and protect the health and development of children*" [DCP].

Most participants felt that schools went beyond expectations in creating a welcoming environment for the different sectors to work collaboratively. Schools often provided administrative support and were key to engaging families to attend appointments.

The Aboriginal community described their vision of the importance of shared leadership for SBIC models:

> *"That's with the health department and education coming together, my original [idea] of that was, no one had ownership. It was shared. [Education] is not totally responsible for the program and neither is health; it's a shared program."* [AC1]

Theme 2. Commitment of Stakeholders and Staff

Commitment from stakeholders and staff were a cornerstone for successful SBIC implementation. This included agreement from school principals to release social workers, school counsellors or WHIN coordinators to participate in clinical work. Stakeholders cast a broad net to form cross-sector partnerships. For example, in School A an NGO was partnered with to provide social work support. At YGS, a private paediatrician, occupational therapist and speech pathologist were contracted to the SBIC.

Participants described the passionate characteristics of SBIC staff and how they went beyond their roles to achieve positive outcomes for families.

> *"So I actually drive them to the service. Umm, I know it's outside my role, but I tend to do it."* [AEO]

> *"I've met with [other medical staff] and they are all donating extraordinary amounts of [their] time into this work to set this system up."* [DNG]

Theme 3. Operational Processes and Resourcing

Embedding processes within school policy was seen as a key operational mechanism in sustaining SBIC models. There was discussion about modernising how teams work together using data management tools or digital technology across the sectors to improve accountability and governance, *"having systems in place that are not dependent on one person remembering to collect the data"*[RES].

Some of the SBIC programs had developed MOUs to clarify roles and responsibilities as well as funding agreements. Most SBIC programs had developed written documents outlining processes. Evaluation processes were variable across sites mainly due to resource constraints. Each SBIC did however demonstrate a willingness to share data collection and evaluation systems with other sites.

MAPPING OF THEMATIC ANALYSIS TO LOOMAN'S IMPLEMENTATION STRATEGY

After the analysis based on the IPCHS framework, each theme was matched to Looman's implementation strategies. An inductive process was then used to draw out strategies that would be useful when implementing SBIC models. This information is summarised in Table 3.

DISCUSSION

The IPCHS framework encourages a lifespan approach to health with a shift from curative or treatment focused healthcare to health prevention, promotion and protection [14]. This framework was used to understand why and how SBIC models could improve access and engagement with health services for children experiencing physical health, developmental and behavioural concerns. Looman's implementation strategies was used to contextualise the facilitating factors and barriers identified from the thematic analysis to ascertain strategies for scaling up the model of care within NSW. These findings have been summarised in Table 3 and will be elaborated on here.

Strategy 1 of the IPCHS framework is about engaging and empowering people and communities to make effective decisions about their own health [14]. The SBIC models described in this research were effective in improving access to healthcare due to the convenience and familiarity afforded to families by delivering services at schools while fostering a sense of connection within communities [26, 27]. If we consider Looman's implementation strategies, these findings point to the relevance of applying collaborative governance by engaging all stakeholders through community consultation and co-design [16]. The Aboriginal community were closely involved with the design of the SBIC programs, liked the collaborative nature of the model and believed that it was a more efficient way to utilise existing resources [28, 29].

Strategy 2 of the IPCHS strategy relates to strengthening governance and accountability through a participatory approach in decision-making and evaluation. This research showed that working across sectors presented challenges around system harmonisation. Implementation strategies to address these challenges include prioritising extensive and continuous alignment work at a macro (system) level, meso (organisational) level and micro (clinical) level [16, 30, 31]. At the macro level cross-sector collaboration and alignment through leadership, policy and governance is required [32, 33]. At a meso and micro level, applying collaborative governance and distributing responsibility across sectors from the outset lays the groundwork for shared responsibility and sustainability of the model [16, 34]. Shared responsibility can be facilitated through two types of committees. At a meso level, a committee of leaders representing each sector can ensure that the purpose of the SBIC is clear and oversee operational processes, readiness for implementation, documentation, and navigate roadblocks [35]. At a micro level, a community reference group can oversee and guide local implementation [36, 37]. It is essential that these two committees communicate with each other [37].

The success of SBIC programs in reorienting health delivery to schools, so that access to services is improved, relies on developing a strong multidisciplinary team culture (IPCHS Strategy 3: Reorienting the model of care) [37]. Participants proposed a core multidisciplinary team or a 'School Health Team', which included Aboriginal staff ,who worked to create a 'collaborative space' within schools [38–41]. Over time, understanding and integration grows within teams but tensions that arise can threaten the stability of the partnership [37]. An implementation strategy to shape a positive team culture incudes joint case discussions and professional development sessions, which facilitate communication and an understanding each other's role [16]. Co-location of professionals can additionally enhance team integration through improved frequency and quality of communication [42].

In attempting to reorientate traditional healthcare models (Strategy 3), an incremental growth model

IPCHS FRAMEWORK	THEMES FROM ANALYSIS	LOOMAN'S IMPLEMENTATION STRATEGIES	SBIC IMPLEMENTATION ACTIONS
Strategy 1: Engaging and Empowering People and Communities	Theme 1: Community-Driven Models of Care Theme 2. Improved Access to Healthcare Theme 3. Positive outcomes for children and families Theme 4: Connection Theme 5. Marginalised Population	1. Leadership and governance: Applying collaborative governance by engaging all stakeholders	Community consultation and co-design
Strategy 2: Strengthening governance and accounatbility	Theme 1: Integration of Systems Theme 2. Developing a Robust Evidence Base	1. Leadership and governance: Applying collaborative governance by engaging all stakeholders	Policy and governance alignment Develop committee of leaders and community reference group
Strategy 3: Reorienting the model of care	Theme 1. Shifting Healthcare to Schools Theme 2: Cultural Safety	1. Workforce: Build a multidisciplinary team culture with mutual recognition of each other's roles	Develop a 'School Health Team' within each school Understanding each other's role Joint clinical meetings and professional development sessions Co-location
		2. Service delivery: Incremental growth model	Stepwise implementation with regular review process
		3. Service delivery: Balance between flexibility and formal structures of integration	Flexible approach with structure around roles and responsibilities
Strategy 4: Coordinating services within and across sectors	Theme 1: Integrated care Theme 2. Coordination and Stability of the Workforce	1. Workforce: Stimulate the development of new roles and competencies for integrated care	Develop new 'integrator' roles Develop skills for working in SBIC
Strategy 5: Creating an enabling environment	Theme 1: Leadership Theme 2. Commitment of stakeholders and staff Theme 3. Operational processes and resourcing	1. Leadership and governance: Distributed leadership throughout the system	Shared leadership across sectors
		2. Financing: Securing long-term funding and innovative payments	Leaders to work collaboratively to ensure sustainability
		3. Overarching mechanism: Alignment work across the different sectors	Formalising roles and responsibilities e.g. MOU Policy and process alignment
		4. Information and Communications Technology (ICT): Developed to support collaboration and communication	2a. Adopt integrated digital systems
		5. Information and Research: Feedback loops and a continuous monitoring system	3a. Resourcing for evaluation and research

Table 3 Summary of themes mapped to IPCHS framework and Looman's implementation strategies with implementation actions for SBIC models.

where changes occur in a stepwise fashion, leaving time for processes to be reviewed and modified, is a more successful approach to implementation [37]. Furthermore, a balance between flexibility and formal structures is required as a degree of structure is required to outline the division of tasks, and roles and responsibilities within teams [27].

Coordinating services within and across sectors is an important strategy within the IPCHS framework (Strategy 4). To coordinate the complex needs of those seen in SBIC settings, the development of new roles and competencies requires consideration. A theme that emerged was the importance of 'integrators', which was often an extension of existing roles [16, 43]. For example, social workers and school counsellors often extended their skills to coordinate the SBIC program and provide service navigation, consistent with evidence from other such models which demonstrate that such integrators are central to the effectiveness of integrated care models [43].

Depending on a community, when scaling up, it may be that one SBIC coordinator or one SBIC team works across several schools. In this research, the skill set required of a service navigator was thought to belong to a number of professional roles [43]. As such, and in line with the concept of utilising existing resources within a community, various professionals could act as a service navigator e.g. school counsellor, WHIN coordinator, social worker, GP or community workers. Those working within SBIC could also be encouraged to seek specific training in paediatrics and youth health [44].

In the IPCHS framework, Strategy 5: creating an enabling environment, refers to the overarching factors necessary for the previous four strategies to become operational. Strong leadership and governance are important facets of this strategy [45, 46]. For successful implementation of SBIC, leadership has to be distributed throughout the system [41, 45]. This can be promoted through the formation of 'leaders committees' and 'community reference committees', as described for Strategy 2. In addition, sector leaders can provide governance structures and seek shared funding models to ensure sustainability through reliable funding streams [16, 40, 46]. Integration can be further enabled by preparing manuals and MOUs which create clarity about goals, outcomes, roles and responsibilities [40, 46]. Other ways to create enabling environments includes resourcing the development of ICT and research capacity to support data sharing, collaboration, communication and evaluation [47].

Overall, this research shows that SBIC programs within NSW can improve access and engagement for with health services. The IPCHS framework and Looman's implementation strategies were used to understand how partnerships between the health and education sectors could make significant contributions to how people experience health and care while reorienting health services based on the needs of communities [14, 16]. SBIC models are valued by communities, creating impetus to scale up the initiative:

> *"If you use Aboriginal culture, spread the sunshine; you spread it, you don't keep it to yourself."* [AC1]

LIMITATIONS

SBIC programs within NSW have formed independently of each other and are small in number. This produces limitations in terms of the breadth of this research, which was optimised by including a COP in the study.

CONCLUSIONS

Strategies for implementing SBIC models across NSW have been identified and include community consultation and co-design to create a program that is effective, culturally-safe and durable in engaging children and their families and providing improved access to healthcare. Multidisciplinary team culture needs to be actively and continuously built through avenues such as meetings and shared professional development sessions. The skill set and make-up of the multidisciplinary requires consideration, particularly as new competencies and roles may be required e.g. linkers and coordinators. Collaborative and shared leadership across sectors is particularly important in providing guidance and direction while securing stable funding streams. Overarching mechanisms for SBIC implementation include alignment of operational systems through protocols and policies while maintaining a balance between structure and flexibility.

APPENDIX A: INTERVIEW GUIDE FOR PHASE 2

Generally, the primary questions analysed were, with slight variation, to all participants.

1. *What has been your involvement in Yudi Gunyi School (YGS) or Ngaramadhi Space (NS)?*
2. *What is your understanding of the YGS/NS model?*
3. *Can you describe how the multi-disciplinary (education & health) team works together?*
4. *What are the benefits and/or challenges of the YGS/NS model?*
5. *What changes or developments have led to the current model?*
6. *What has been the experience of the students and families of YGS/NS?*
7. *What are the critical or key elements of the YGS/NS model?*
8. *How do you think these critical elements could be adopted or adapted for use in other school settings?*

APPENDIX B: INTERVIEW GUIDE FOR PHASE 3

Generally, the primary questions analysed were, with slight variation, to all participants.

1. *What has been your involvement in the school clinic?*
2. *Can you chart a timeline of how the school clinic was established?*
3. *What facilitated the establishment of the clinic?*
4. *What barriers did you come across when establishing the clinic?*
5. *How were barriers overcome?*
6. *What were your expectations when setting up a school clinic?*

7. *Have these expectations been met or not met? Why do you think this is the case?*
8. *Who accesses the clinic at the moment? Could anyone else access the clinic?*
9. *What have been the benefits of forming a multidisciplinary clinic?*
10. *What could be done better?*
11. *Overall, do you think that the school clinics are worthwhile?*
12. *Do you think the school clinics should be replicated in other settings?*
13. *What would be needed to replicate the model?*

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COMPETING INTERESTS

Dr Rungan is a clinician researcher conducting a PhD titled 'Childhood Behavioural Disorders: Partnerships between the Health and Education Sector'. This article is part of her PhD studies. Her supervisors for the PhD include other authors involved with this paper, namely Prof Eastwood, Prof Smith-Merry and Dr Liu.

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PART C: KNOWLEDGE TRANSLATION AND CONCLUSION

In Part C, the knowledge acquired from Part A: Foundational Concepts and Part B: Research Findings is used to propose how the NS model could be translated to other educational settings. This is through a published article in Chapter 9 in which an integrated care framework called Kalgal Burnbona is described. In Chapter 10, the implications of this research on clinical practice, research and policy as well as limitations are discussed. This is followed by a concluding statement.

Chapter 9 Kalgal Burnbona Framework

9.1 Introduction

The integrated model of care piloted at NS improved access to health care for students, most of whom had multiple unmet physical health, mental health and social needs. Attendance at NS was high and after the model of care was delivered, behavioural improvements were noted. In addition, a qualitative evaluation of the model of care showed that it was effective in engaging and empowering people and communities, was community driven and delivered in a culturally safe manner, improved access and outcomes for students and families, created connection between students and the community, and had beneficial effects on staff wellbeing.

The evaluation of NS has led to statewide interest in scaling up the model of care. In this chapter, a published manuscript proposing a framework called Kalgal Burnbona for implementing SBIC within SLHD is described. The term SBIC has been adopted for this framework to highlight the importance of cross-sector collaboration and partnerships.

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Kalgal Burnbona: An Integrated Model of Care Between the Health and Education Sector

RESEARCH & THEORY

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ABSTRACT

Introduction: Kalgal Burnbona is a framework developed for applying school-based integrated care (SBIC) across Sydney Local Health District (SLHD).

Description: Kalgal Burnbona is an innovative and integrative framework developed to provide holistic, integrated, multidisciplinary child and family centred care to school-aged children from priority populations within SLHD, such as those belonging to the Aboriginal community. The expected outcomes include improved health, behavioural, education and social outcomes. This article contextualises the development of the Kalgal Burnbona framework from its beginnings as a pilot site called Ngaramadhi Space (NS) within the Healthy Homes and Neighbourhoods (HHAN) initiative, through to its evolution to an integrated partnership between the New South Wales (NSW) health and education sector. An example of how the framework can be implemented in other settings within SLHD is described.

Discussion: A tiered approach to integrated care across SLHD is postulated based on evidence from a mixed methods evaluation of NS and in line with the Rainbow Model of Integrated Care (RMIC). Kalgal Burnbona is an example of a community-driven response through collaborative partnerships to improve health, education and social outcomes. The framework described provides structure for multisector teams to work within, recognising that each community and school has its own history and needs.

Conclusion: The Kalgal Burnbona model can be scaled up to serve a wider network of students across SLHD. The initial successes of the model, which include improving access and engagement for children with unmet physical health, mental health and social needs while being accepted by communities provide evidence for policy changes and advocacy that centre on collaborative cross-sector partnerships.

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INTRODUCTION

The intertwined relationship between health and education has been well documented [1–6]. Schools are an under-utilised community resource and are an important and convenient way for children to access health services [2, 7, 8].

School-aged children (5–18 years) frequently have unmet physical health and mental health needs due to poor access to health services with a plateauing of global health outcomes in this age group [9–11]. Herein lies a need to develop novel, innovative and integrative strategies to improve the health and wellbeing of these children [10]. The international literature shows that school-based healthcare (SBHC) models have been widely adopted, presenting a potential solution for improving access and engagement with health services [2, 12–16]. While such models vary considerably across different sites, in general most provide services based on the needs of the community and can include medical assessments, immunisations, counselling and chronic disease management [13, 17, 18]. Although evaluating these models of care is difficult, due to inherent heterogeneity, they have demonstrated increased access to care, improved health and education outcomes, high levels of student and parent satisfaction, and cost effectiveness [8, 12, 13, 18].

In Australia, children experience poor access to healthcare [11, 19, 20]. These disparities are more marked in Aboriginal children who experience inequitable education, socio-economic status, physical health, mental health and wellbeing outcomes [21–26]. As our understanding of the impact of the Covid 19 pandemic on the widening of these disparities grows, so too has interest in partnering with schools to deliver healthcare across Australia [7, 27–31]. While there are several SBHC models across Australia, these have been developed independently of each other without clear frameworks for implementation in different settings or guidelines to inform scaling up [27, 32, 33].

In this article we describe Kalgal Burnbona. Kalgal Burnbona is a framework developed for applying school-based integrated care (SBIC) across Sydney Local Health District (SLHD). The term SBIC has been adopted for this framework, rather than SBHC, to emphasise the importance of cross-sector collaboration and partnerships in developing 'integrated care'. Integrated care refers to the joining together of the various parts of a health system to optimise care with a strong focus on community empowerment [34–36]. These underlying principles have been described in the Alma Ata Declaration on Primary Health Care (1978) and the framework for 'Integrated People-Centred Health Services (IPCHS)' (Figure 1) [37, 38]. Over time there have been inconsistencies and overlap with the definition of 'integrated care' with other terms such as 'patient-centred care', and 'coordinated care' [39]. With integrated care, the emphasis is on patient involvement and collaboration with healthcare providers, as well as meaningful and lasting partnerships across sectors [40]. The Rainbow Model of Integrated Care (RMIC) was developed to describe and evaluate the overarching and multidimensional concepts that inform integrated care [40]. As such, we have attempted to align the Kalgal Burnbona framework with the principles of the RMIC.

Overall, the purpose of Kalgal Burnbona is to provide holistic, integrated, multidisciplinary child and family centred care to school-aged children from priority populations such as Aboriginal children. The expected outcomes of this intervention are to improve health, behavioural, education and social outcomes. This article will contextualise the development of the Kalgal Burnbona framework from its beginnings as a pilot site called Ngaramadhi Space (NS) through to its evolution to an integrated partnership between the New South Wales (NSW) health and education sector that aligns with the RMIC [2, 41, 42]. Furthermore, we present a case study to exemplify how the framework can be adapted in a new setting within SLHD.

HISTORICAL AND SOCIAL CONTEXT

SLHD is characterised by a diverse and growing population. In 2016 the population of SLHD was 640,000, a 21% increase from 2006. The expected growth rate between 2016–2036 is 40% with an expected population of almost 1 million people by 2036 (43). Children aged 0–17 years (2016) form around 32% of SLHD's population. Around 1.1% of the population identify as being Aboriginal while 45% were born overseas and 58% speak a non-English language at home [43]. With an 11% prevalence of mental health problems in preadolescent Australian children it can be expected that with this population growth there will be an increase in paediatric-related mental health concerns [44]. Furthermore, mental health issues in children have been compounded by the Covid 19 pandemic with negative impacts emerging on learning, friendships and family relationships, and mental health [28, 29, 45, 46].

Amongst the Aboriginal community, health is connected to 'Social and Emotional Wellbeing' (SEWB) [26, 47, 48]. This is a holistic term that incorporates the significance of physical, mental and emotional health to social, spiritual and cultural wellbeing [24]. To understand the higher prevalence of childhood behavioural disorders in Aboriginal children there is a need to understand how historical, social and cultural factors influence the diagnosis of such disorders [21, 49]. Western ideology remains the predominant landscape for describing childhood behaviour and related disorders thereof. Aboriginal life ways and beliefs about the role of children

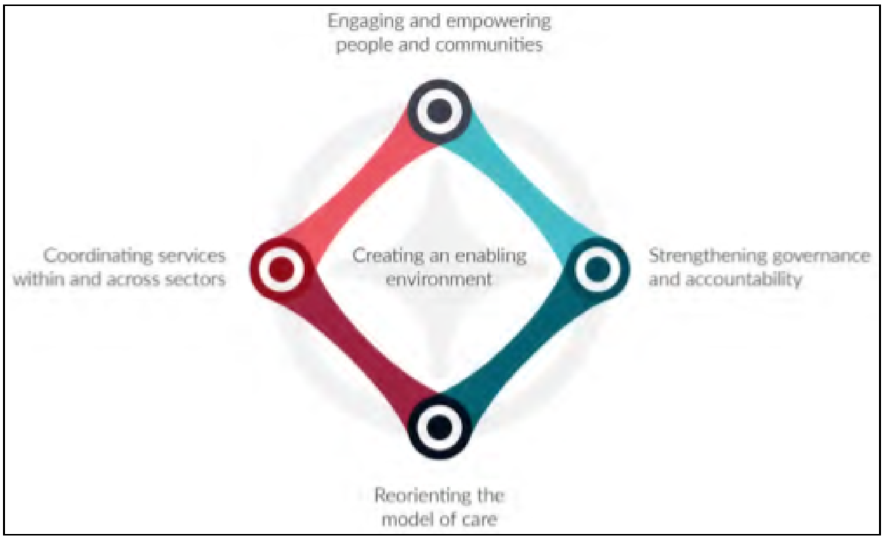

Figure 1 The five interdependent strategies of the WHO Framework on integrated people-centred health services (IPCHS) [37].

within communities differs from Western culture. For Aboriginal communities, children are active participants in community life and learn through experiences and developing a spiritual connection to the land [50–52]. Colonisation disrupted these life ways leading to disconnection from people, place and land [24, 50, 52]. Western beliefs around behavioural norms were imposed upon Aboriginal people with divergence from these norms considered to be a deviance or a disorder [53, 54]. Ongoing and systemic injustices as well as psychological trauma have perpetuated the high incidence of childhood behavioural disorders diagnosed in Aboriginal children and young people [24, 55]. For the Aboriginal community, a holistic approach to understanding a child is needed where a 'whole of child' and 'whole of family' approach is taken [47, 56]. The SBIC approach of co-location and integration of health, education and social services is valued by the Aboriginal community with partnerships among services seen as an effective way to maximise limited resources [57, 58].

KALGAL BURNBONA

EARLY BEGINNINGS

Kalgal Burnbona means 'to surround family' in the Dharawal language of the local Aboriginal community. The integrated model of care that informs the framework was co-designed with schools, community paediatrics and the Aboriginal community. The model of care involves a multidisciplinary team made up of members from the health, education and social care sector. The aim of the model is to improve access and engagement to health services for school-aged children and their families by providing comprehensive and holistic assessments and follow up of students [4, 12, 59]. The Kalgal Burnbona framework has grown out of the Healthy Homes and Neighbourhoods (HHAN) integrated care initiative, where priority schools were strategically identified as potential sites for multiple services to be co-located [60, 61]. Out of this process Yudi Gunyi School (YGS), which is a 'School for Special Purposes' (SSP) catering for students experiencing problematic externalising behaviour in a mainstream school setting, was identified as a priority school [62, 63]. It was at this school that an initial pilot site called Ngaramadhi Space (NS) was established in 2016 [63].

A quantitative evaluation of NS showed that the model of care improved access to healthcare with students having multiple unmet physical health, mental health and social needs. After the multidisciplinary model of care was delivered, behavioural improvements as measured by pre- and post- Strengths and Difficulties Questionnaire (SDQ) teacher reports were noted [64]. A qualitative evaluation of NS and how it could be implemented at other sites showed that SBIC models were effective in engaging and empowering people and communities. The model of care was community-driven and delivered in a culturally-safe manner. Participants identified SBIC as improving access to health care which led to positive outcomes for students and families. SBIC was described as creating 'connection' between students and the community with beneficial effects on staff wellbeing (in print (IJIC)). Potential strategies that were identified for implementing SBIC models included community consultation and co-design, building multidisciplinary teams with new competencies and roles e.g. linkers and coordinators, collaborative and shared leadership, and alignment of operational systems while maintaining a balance between structure and flexibility. Furthermore, the need for high-level and ongoing collaboration across sectors and with communities was highlighted (in print (IJIC)).

INTEGRATED SYSTEMS APPROACH

Statewide interest in the NS model of care and the evaluation findings led us to consider what scaling up would look like. Here, we propose a framework called 'Kalgal Burnbona' for implementing SBIC within SLHD.

The Kalgal Burnbona framework was developed with consideration of the RMIC (Figure 2) [40]. The RMIC presents a holistic vision of person-focused and population-based care alongside the dimensions of integrated care [65]. Person-focused care relates to a biopsychosocial perspective of health with a shift from clinician-centred preferences to those of individuals [37, 66]. This concept aligns with Aboriginal concepts of SEWB and the importance of taking a holistic approach to health [24, 57]. Population-based care considers the wider social determinants of health such as political and economic factors [39]. In developing the Kalgal Burnbona framework, integration of care was considered at the macro (system) level, the meso (organisational) level and the micro (clinical) level [65]. In practice, the pilot site for Kalgal Burnbona, NS, was built from the ground-up mainly utilising meso and micro level partnerships so these aspects will be described first in the following sections.

Meso Level: Professional Integration and Organisational Integration

At a meso level two levels of integration are described in the RMIC framework [65]. These include professional integration and organisational integration [39, 67]. Professional integration refers to partnerships between professionals within (intra) and between (inter) organisations [39]. Organisational integration refers to how well services are produced and delivered in a linked-up fashion [67].

Professional integration requires a collective belief by various professionals to work in a coordinated way and to share the responsibility for successful implementation of the model including accountability, problem solving and decision-making [68, 69]. In developing NS, key stakeholders from the school (school principal, school director, networked specialist facilitator, school counsellor), health (director of community paediatrics, paediatrician, youth health manager, youth health nurse, psychiatrist), social sector (HHAN project manager, director of social work, social worker) and Aboriginal community formed a 'leaders committee' to discuss the aims of the model and how it would be delivered [63, 70]. Roles and responsibilities were later formalised in a Memorandum of Understanding (MOU). The Aboriginal community were integral in providing cultural input, ongoing direction and governance over the initiative. This led to the formation of a separate 'community reference committee' called the Wouwanguul Kanja committee [63, 70, 71]. The Wouwanguul Kanja committee developed a 'terms of reference' that detailed the committee's role, frequency of meetings and decision-making processes. In forming these two committees, oversight over the program was provided, which in turn formed the basis of professional and organisational integration.

To scale up the SBIC model to other sites, community consultation and collaboration is required to improve the

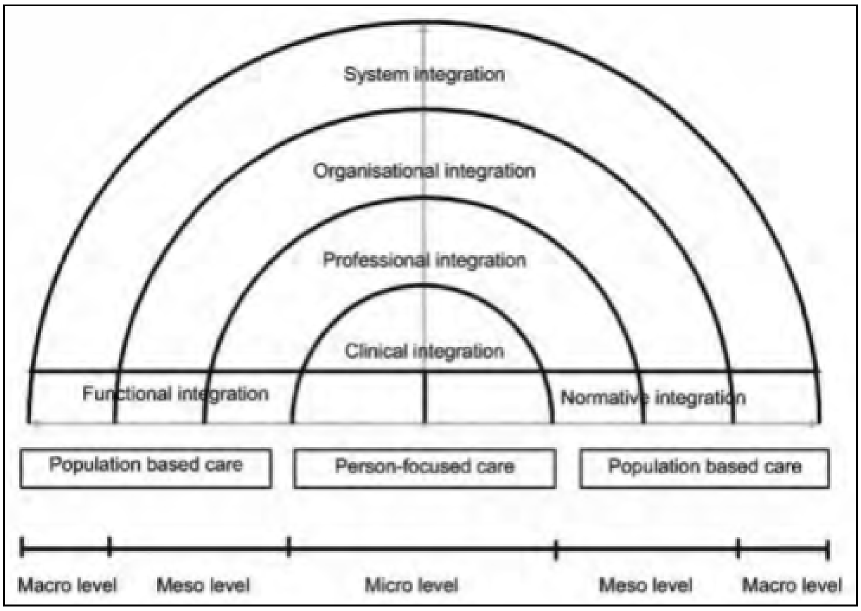

Figure 2 Conceptual framework for integrated care based on the integrative functions of primary care [65].

quality and efficiency of service delivery. We propose that two types of committees are required to provide organisational structure and service integration. The first is a an overarching 'leaders committee' to align the vision and goals of the initiative with processes, oversee its evaluation, secure financing, provide governance, and manage problems as they arise [69]. In addition, a second 'community reference committee' is required for each cluster of schools to manage community-level issues.

Professional integration can be promoted by forming professional networks where knowledge is shared [72]. In scaling up Kalgal Burnbona, regular professional development sessions that include all team members will be developed. When new schools enter the program, staff from all the sectors involved could participate in a program about trauma-informed practice that has already been developed for other purposes by the Department of Education and Training (DET). Where required, medical staff could access additional training to allow for the confident assessment and management of paediatric and youth health issues. Additionally, regular professional development sessions have already been initiated to allow the expertise and challenges faced by the different sectors to be highlighted. These type of sessions are described in the literature as being a mechanism for promoting respectful and supportive relationships within multidisciplinary teams while helping the team develop a common language [68, 73]. Furthermore, an incremental approach is required when scaling up. This allows processes to be reviewed and improved upon, which is a more acceptable approach to most multidisciplinary teams [68, 70, 74].

Professional integration can be stimulated by financial incentives [39, 75]. The Kalgal Burnbona team have developed novel co-funding options with schools. For example, at NS, the school had funded a community paediatrician, social worker, speech pathologist and occupational therapist through individual contracts. This created an exemplar for the processes required to form contracts and accounts between schools and SLHD for future replication.

Micro Level: Clinical Integration

At the micro level of integrated care is clinical integration. Clinical integration refers to how well the process of delivering care to individual patients works [65]. For NS, and when scaling up, to provide holistic child and family centred care the model requires representation from the health, education and social care sector. For NS this was provided by a paediatrician, social worker, youth nurse and school counsellor. The team worked closely together to establish processes and to develop an understanding of workflow. For example, during the multidisciplinary clinical assessments the youth nurse often saw the student separately to establish rapport and assess for psychosocial factors. Simultaneously, the paediatrician and social worker would take a medical and social history from the family [76]. The team would then summate findings with the student and family, taking a partnership approach to prioritising needs and developing recommendations [78]. This type of practice differs to mainstream clinical services which tend to be disease-focused rather than person-focused [65]. SBIC provides innovation in this aspect, which is particularly relevant for socially disadvantaged populations who often have needs that span across multiple services. A person-focused approach to clinical integration can improve wellbeing and facilitate the continuous, comprehensive, and coordinated delivery of services at an individual level [65, 77].

Macro Level: System Integration

At the macro level of integrated care, the guiding principles behind an initiative are used to drive the structures, processes and techniques that transect multiple sectors and contribute to health and wellbeing across the life-course. For the Kalgal Burnbona framework, the model of care which was designed in collaboration with schools and the community, steered health services away from mainstream settings to schools, where they were more accessible to those who needed them. As a result of this community ownership, SLHD have since partnered with the Student Wellbeing Unit within the DET to work towards aligning processes and to collaborate so that the model can be scaled up. Furthermore, a community of practice across New South Wales (NSW) is being led by the Kalgal Burnbona team to facilitate cross-sector partnerships.

Functional integration and normative integration

Finally, functional and normative integration spans the micro, meso and macro level and ensures connectivity within a system [65]. Functional integration relates to the key mechanisms involved in financing, information, and management systems e.g. human resources, strategic planning, and quality improvement [68, 75]. In developing a framework for Kalgal Burnbona, MOUs across sectors as well as procedural documents to guide multidisciplinary teams at individual schools have been formed. These documents provide structure but are not prescriptive in nature because a degree of flexibility is required to meet the needs of individuals and communities [68]. The Kalgal Burnbona team have produced a logic model and manualised how to set up and evaluate SBIC to support and coordinate service delivery, accountability and decision-making between organisations and professionals [65].

Normative integration is another dimension that connects the micro, meso and macro levels of integrated care systems. This is a less tangible element of integrated care and refers to the underlying values and beliefs that are shared across the system and which allow cohesion and consistency [39, 40]. The Kalgal Burbona framework is in the early stages of formation. As such, normative integration is being developed at a micro and meso level by the community and cross-sector teams involved in shaping the model. This includes regular meetings to develop the model and its evaluation as well as case discussion meetings [63]. Teams also develop close working relationships during the process of clinical assessment itself [78]. Furthermore, the 'leaders committee' is responsible for developing and maintaining the mission and vision of the program, which is filtered into the culture of each organisation [65].

KALGAL BURNBONA FRAMEWORK

Considering the above frameworks and knowledge derived from the mixed methods evaluation of NS, a proposed framework called Kalgal Burnbona will be described. Kalgal Burnbona is a framework that provides structure for SBIC but builds in flexibility so that the model can be adapted to the needs and resources available within a community. Focusing on SLHD, the framework firstly categorises schools by priority levels i.e. low priority, medium priority, high priority, and special education tiers. This is visually represented in Figure 3 where schools are represented by a sail of a boat. Moving from the base of the sail to the top, as the priority level of schools increase so does the level of support required. The main body of the boat represents the importance of multidisciplinary case reviews held by the health, education and social care sectors. These joint and collaborative sessions allow for information to be shared across sectors, for responsibilities to be assigned to individuals, and opportunities to discuss outstanding or new issues for families. The waves underneath the boat represent the need for the model to adapt to the natural ebbs and flows inherent of working with individuals, families and communities as well as across sectors. The model is 'anchored' by the concept of integrated care, policy and systems.

Categorisation of schools into priority levels was based on a combination of community knowledge and national indexes of socioeconomic advantage [79]. More specifically, schools within SLHD can be stratified according to risk by using the following information: Index of Community Socio-Emotional Advantage value (ICSEA), Index of Relative Socio-Economic Disadvantage (IRSD) ranking for surrounding suburbs to school, intentional self-harm hospital presentation within the local government area (LGA), interpersonal violence-related hospital presentation within the LGA, percentage of Aboriginal students and percentage of culturally and linguistically diverse (CALD) students. Community knowledge was drawn upon to see if there was agreement regarding how each school was prioritised. This included discussions with senior team members from community paediatrics, the HHAN integrated care team and youth health services. This additional information was valuable because many areas within central Sydney have undergone redevelopment. So, while these areas would rate as being economically 'advantaged', there were certain populations and schools within those areas which experience high levels of disadvantage (Table 1).

By categorising schools using priority levels, we have established a system for understanding what type of multidisciplinary team will be needed by each school.

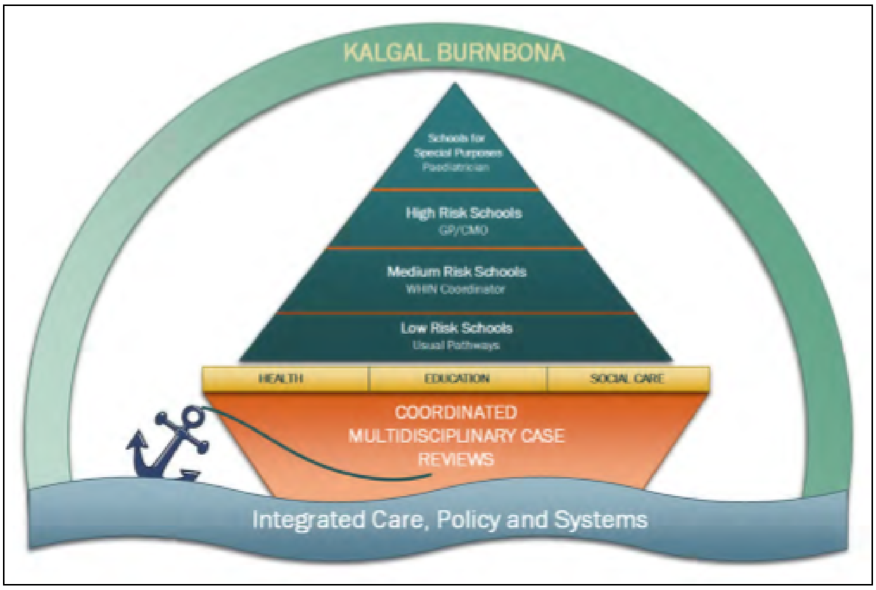

Figure 3 Kalgal Burnbona Model of Care.

Schools for Special Purposes (SSPs) 'provide specialist and intensive support in a dedicated setting for students with moderate to high learning and support needs' [80]. SSPs specifically cater for students with intellectual disability, mental health issues, autism, physical disability, sensory impairment, learning difficulties or behaviour disorders [80]. At the time of describing this model, only SSPs for students experiencing externalising behavioural issues were included. The nature and complexity of students attending these SSPs will mean that a paediatrician skilled in these areas will be needed to form the health arm of the team.

High priority schools require medical staff with specialised skills in managing paediatric behavioural and developmental skills. These skills can be provided for by paediatricians, general practitioners (GPs) and Career Medical Officers (CMOs), with the provision of additional training or upskilling where required. The health arm for medium priority schools can be provided by other health staff. For example, in NSW a Wellbeing and Health In-Reach Nurse (WHIN) coordinator program was established in 2021. The WHIN program is a partnership between NSW Health and DET whereby a WHIN coordinator is positioned at selected schools across the state. Within SLHD there are four WHIN coordinators situated across 16 primary and secondary schools. The WHIN coordinators work closely with the school's wellbeing, learning and support teams as well as local health and social services to support students and their families on a wide range of health and wellbeing issues [81]. Potentially, WHIN coordinators could work within the Kalgal Burnbona framework and be supported by community paediatricians. All low priority schools can access existing health and social care pathways within SLHD. Table 1 describes the characteristics of de-identified schools within the SLHD community paediatrics team.

In addition to a health arm, all levels within the Kalgal Burnbona priority system require an education arm and a social care arm. The education arm will generally be represented by a school's learning support team (LST) which typically consists of the school counsellor and assistant principal. Provision of social care will vary across schools and will be based on availability of resources and collaborating with partnering services such as youth services and NGOs.

To strengthen the model, all staff will participate in regular professional development sessions. Furthermore, the social workers involved in Kalgal Burnbona will form a clinical supervision group with senior clinicians from HHAN.

AN EXAMPLE OF SCALING UP: ALEXANDRIA PARK COMMUNITY SCHOOL (APCS)

APCS will be used to describe how the original NS model can be adapted to meet the needs of individual schools and communities (Figure 4). We propose that at each SBIC there is a dedicated 'School Health Team' consisting of representatives from the health, education and social sector. For APCS, the health sector will be represented by a community paediatrician, while the education representatives will include the school counselling team, the deputy principal and an Aboriginal Education Officer (AEO). Social care will be provided by The Benevolent Society (TBS), which is a NGO providing integrated support services for children, young people, families, people with disability, older Australians and carers [85].

The School Health Team will receive referrals from the LST. At the time of referral, a named representative from the education team will obtain consent from the student's parent/caregiver for information to be shared by the services involved. A list of referrals will be reviewed at a 'Case Review Meeting'. When a child is already known to a health or social service, they will be connected with or discussed with that existing service to see if an assessment at the SBIC is required.

If the child does require a multidisciplinary SBIC assessment, information will be gathered prior to the assessment. This includes a health summary, school counselling file summary and a teacher report consisting of a Canadian ADHD Resource Alliance (CADDRA) report and a SDQ [86, 87]. The child will then be seen by a health professional and a TBS social worker. Where possible a member from the education team will also be present. After the assessment, the primary concerns will be discussed within the team and recommendations actioned by the appropriate team member. Families will be supported by the social worker to navigate referral pathways or to help meet other outstanding issues.

At the following Case Review Meeting, the student's progress and any outstanding matters will be discussed. This process will be ongoing and documented. When a student no longer needs review at this meeting they will be taken off the list for discussion.

DISCUSSION

Integrating care for local implementation of novel strategies such as SBIC is complex and involves overcoming many barriers in the health and social care systems [65, 68, 88]. Kalgal Burnbona is a hypothetical framework for scaling up SBIC across NSW based on a pilot site called NS. SBIC has been shown to improve access and engagement with health services in a culturally-safe manner that is acceptable to schools, communities and professionals [64].

We propose a tiered approach to the equitable delivery of services by developing a prioritisation system for schools. Depending on the priority level, representatives from the health, education and

STUDENT CHARACTERISTICS	SCHOOL						
	SCHOOL A	SCHOOL B	SCHOOL C	SCHOOL D	SCHOOL E	SCHOOL F	SCHOOL G
Number of students (n)	1034	34	282	412	27	288	514
Female (n %)	448 (43%)	6 (18%)	147 (52%)	194 (47%)	6 (22%)	116 (40%)	261 (51%)
Male (n %)	586 (57%)	28 (82%)	135 (48%)	218 (53%)	21 (78%)	172 (60%)	253 (49%)
Aboriginal students (%)	17%	24%	18%	9%	52%	4%	0%
CALD background*(%)	57%	43%	54%	55%	25%	81%	97%
ICSEA score and centile**	1037 (64th)	934 (18th)	1018 (55th)	1051 (70th)	851 (4th)	985 (39th)	1094 (84th)
SEA Distribution***							
– **Bottom quartile**	19% (25%)	46%	25%	15%	63%	42%	8%
– **Middle quartile**	19% (25%)	23%	17%	22%	24%	27%	16%
– **Middle quartile**	28% (25%)	16%	26%	31%	9%	24%	37%
– **Top quartile**	34% (25%)	16%	32%	32%	4%	7%	38%
IRSD^	10	9	6	5	6	3	6
1 = lowest							
10 = highest							
Intentional self-harm within LGA (per 100,000)	82.4	82.4	82.4	88	82.4	51.8	51.8
NSW Average 83 per 100,000^^	Lower than state average	Lower than state average	Lower than state average	Higher than state average	Lower than state average	Lower than state average	Lower than state average
Interpersonal violence with LGA	51.6	51.6	51.6	45.2	51.6	53	53
NSW Average 58.2 per 100,000^^^	Lower than state average	Lower than state average	Lower than state average	Lower than state average	Lower than state average	Lower than state average	Lower than state average
Agreed Vulnerability	Yes	Yes	Yes	Yes	Yes	Yes	No
Overall Priority Level	High Risk	School for Special Purposes	High Risk	High Risk	School for Special Purposes	Medium Risk	Low Risk

Table 1 Characteristics of Schools within the SLHD Community Paediatrics Team.

*CALD = culturally and linguistically diverse.

** ICSEA = Index of Community Socio-Emotional Advantage. The Australian average is 1000 [79].

*** SEA = Socioeconomic Advantage. The Australian average is 25% for each quartile [79].

^IRSD = Index of Relative Socio-Economic Disadvantage (IRSD) ranking for surrounding suburbs to school [82].

^^Data from 2019/2020 [83].

^^^Data from 2019/2020 [84].

social sectors will form a School Health Team that assesses and manages the needs of children and their families. At this micro level, schools and stakeholders need a degree of preparation before moving towards implementation of the model of care. This involves an understanding of the goals, processes and resources required as well as a practical understanding of the roles of each sector and what outcomes can be expected [71]. For multidisciplinary teams to build cohesion, creating guidelines does provide structure to govern roles and responsibilities. Such guidelines do however need to be managed flexibly to avoid creating further barriers to accessing care [68, 70]. Communication between the teams and interprofessional interactions are important in developing effective teams [70, 89]. Within each school, it is proposed that the School Health Team meet regularly to discuss cases and processes. Amongst the wider Kalgal Burnbona team, regular professional development sessions will be established to facilitate knowledge sharing and to provide networking opportunities [90, 91].

At a meso level, an overarching 'leaders team' will provide oversight of the initiative while local clusters of schools will form community reference groups. These teams will consist of stakeholders from each sector and the community, promoting shared responsibility

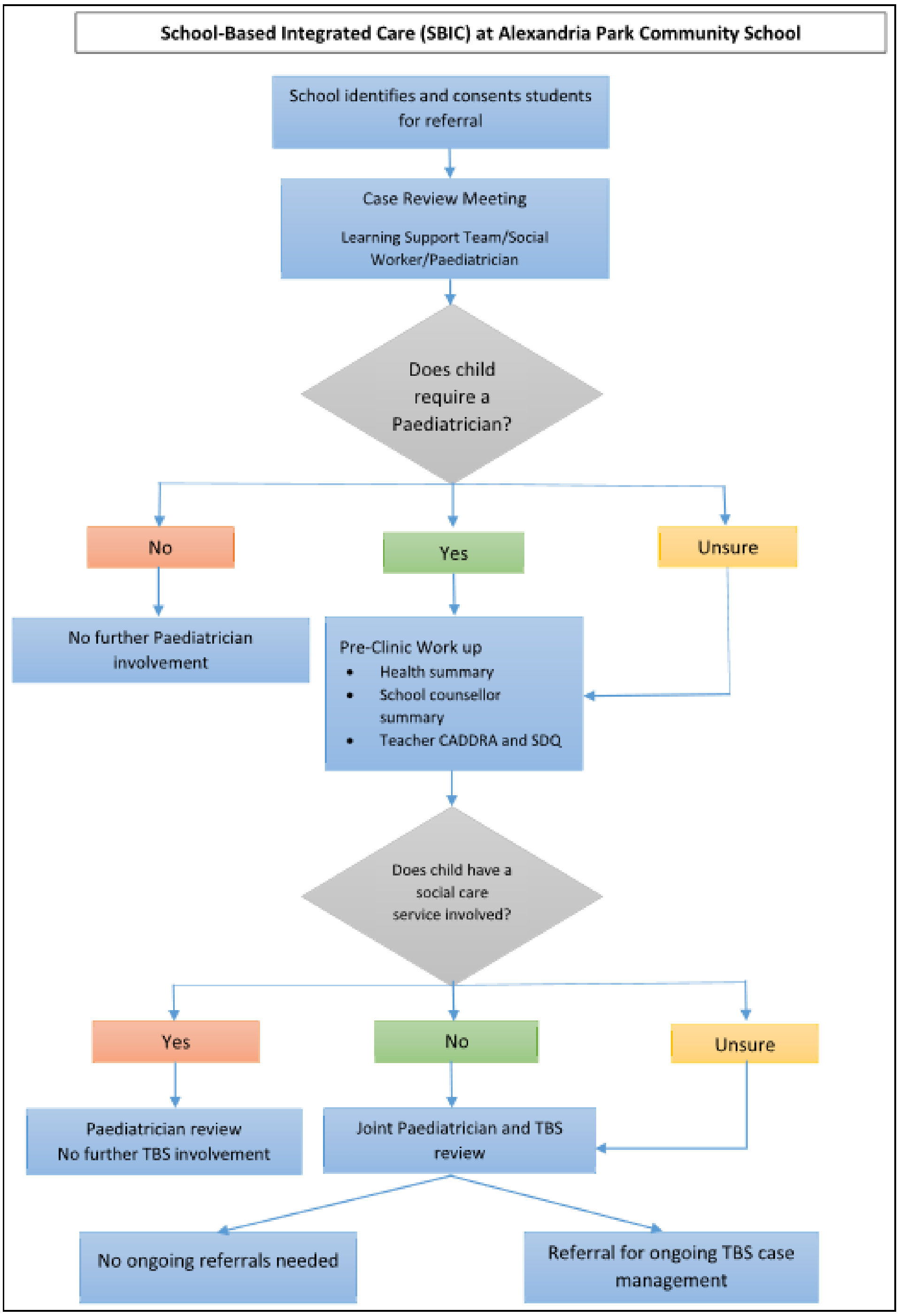

Figure 4 Flowchart showing the model of care adapted for Alexandria Park Community School.
TBS = The Benevolent Society social worker.

for the program. Policy and guidelines will provide further integration at a meso level e.g. MOUs, procedural documents. Consistent evaluation measures will be developed in consultation with community and stakeholders with the aim of embedding accountability across all the postulated sites.

At a macro level, the principles of community empowerment and co-design, culturally-safe, holistic, child-and family centred and accessible care are the underlying drivers of the Kalgal Burnbona framework. These beliefs have and will continue to influence decisions and processes developed to produce lasting functional and normative integration as exemplified through ongoing partnerships with DET, forming a community of practice, manualising SBIC, a logic model and an evaluation.

CONCLUSION

Kalgal Burnbona serves as an example of a community-driven response to inequitable health, education and social outcomes for children and families experiencing developmental, behavioural and mental health concerns. By collaborating and building partnerships that align with the model of care consistency and transparency can be achieved. The framework described provides structure for multisector teams to work within but allows for flexibility, recognising that each community and school had its own history and needs. Resourcing the model requires creative solutions and active formation of partnerships. To bring together the various teams and schools within the model, support networks and joint professional development sessions are necessary. The Kalgal Burnbona model can be scaled up to serve a wider network of students across the state if not nationally. The initial successes of the model provide evidence for policy changes and advocacy and allows knowledge and resources to be shared.

KEY POINTS

- School-based integrated care (SBIC) provides a potential solution for improving access and engagement to healthcare for priority populations across New South Wales (NSW).
- Kalgal Burnbona provides a theoretical tiered approach to provide SBIC across Sydney Local Health District (SLHD) according to need.
- The Kalgal Burnbona framework aligns with Aboriginal concepts of Social and Emotional Wellbeing (SEWB) and the importance of taking a holistic approach to health.

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REVIEWERS

Two anonymous reviewers.

COMPETING INTERESTS

Dr Rungan is a PhD students and the other authors on this submission are part of her PhD supervision team.

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Chapter 10 Conclusion, Limitations and Implications

NS is a practice-based example of an SBHC program that was co-designed with schools and the community. The preceding chapter (Chapter 9) proposed a shift towards the concept of school-based ‘integrated care’ (SBIC) with a framework for scaling up the model across SLHD called Kalgal Burnbona. In this final chapter, a thesis overview is provided. Thereafter, the key findings of the evaluation and how these relate to the available literature are summarised. The clinical, research and policy implications of this research are then outlined. Lastly, the strengths and limitations of this body of work are considered.

10.1 Chapter Overview

Part A of this thesis consists of four chapters that focus on the foundational concepts underpinning this research. Chapter 1 introduces the burden of disease and future risks associated with mental health and behavioural disorders in young people aged between 10 and 24, an issue that has an inequitable effect on Aboriginal children in Australia (Doyle and Hill, 2008; Edwige and Gray, 2021; Patton et al., 2016; Salmon et al., 2018; Shultz et al., 2018; Strong et al., 2021). Additionally, young people experience poor access to assessment and treatment modalities, which creates a need for innovative solutions to address this national and global issue (Bruns et al., 2016; McGorry et al., 2024; National Mental Health Commission, 2021). SBHC programs are positioned as a potential solution to this problem (Allensworth and Kolbe, 1987; Arenson et al., 2019; Keeton et al., 2012; Larson et al., 2017; World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021).

Chapter 2 provides a literature review of CD as an example of a CBD to illustrate the wide-ranging and negative impact of this complex diagnosis on individuals and society. In Chapter 3, the literature on partnerships between the education and health sectors is reviewed through a social determinants lens to understand how collaborative and integrated cross-sector partnerships can be successful in improving the physical health, mental health, education and social outcomes of children. Moreover, examples from global SBHC models and frameworks are drawn upon. These review chapters provide the background for why and how the NS model of care was developed.

The research methodology and methods are in Chapter 4. The ontological and epistemological perspective are positioned in the middle, in recognition of the value that both objective and subjective views bring to the subject matter. The research was grounded in critical realism so that the underlying mechanisms related to why and how the NS model of care worked and how it could be implemented in other settings could be understood (Gorski, 2013; Groff, 2008). These methodological underpinnings led to the development and conducting of a sequential three-phase mixed-methods approach.

In Part B, the research findings are described. This begins with Chapter 5, where, using a critical realist approach, CBDs were situated within the unique cultural, social and historical identity of Australia through two published articles co-written with Aboriginal community members (Objective 1). This includes a yarn or conversation with Aboriginal elders and a literature review on how the concept of childhood and the field of psychiatry has changed over time.

In Chapter 6, a detailed description of how the NS model of care was co-designed and implemented over almost a decade is provided through a published article (Objective 2). In Chapter 7, the results of the quantitative study are presented through a published article (Objective 3), and in Chapter 8, the qualitative results are described through another published article (Objectives 4 and 5).

The knowledge gained from Part A and Part B are then synthesised into Part C, where a tiered integrated care framework, called Kalgal Burnbona, for scaling up the model is proposed through a published article (Chapter 9).

10.2 Key Research Findings

The overall goal of this thesis was to describe the need for and the co-design, evaluation and potential for scale-up of a school-based healthcare program (NS) developed with the Aboriginal community to provide holistic care for students attending a specialist behavioural secondary school in Sydney. The research findings in relation to the objectives stipulated at the beginning of this thesis are discussed here.

Objective 1. To explore the cultural, social and historical factors associated with CBD within Australia.

In line with a critical realist approach, the importance of CBDs within the unique cultural, social and historical identity of Australia has been explored through two published articles (Chapter 5). The literature shows that the concept of childhood has evolved over time, and its meaning is rooted in societal expectations (Mason, 2020; Mook, 1999; Norberg, 2010). Over the past century, industrialisation has led to the need for a workforce skilled in numeracy and literacy. This became the basis of compulsory schooling and of those who deviated from behavioural norms being seen as problematic to society (Laurence and McCallum, 2003).

Furthermore, the field of psychiatry rapidly developed over the same period, with advances in the understanding and treatment of many mental health disorders. However, this process also had implications, particularly in relation to how diagnostic criteria were used to provide access to treatment and how diagnoses were made in different cultural contexts. Gradually, it became clear that holistic and flexible approaches to diagnoses were required (Clark et al., 2017).

Within Australia, these changes occurred alongside colonisation, which had a detrimental effect on Aboriginal communities. Aboriginal life ways are centred around connections with family, community and land (Lohoar et al., 2014; Salmon et al., 2018). Disruptions and disconnection compounded by deficit thinking and lack of respect for the cultural identity of the Aboriginal people created a legacy whereby Aboriginal children continue to be over-represented in statistics describing CBDs (Edwige and Gray, 2021).

It thus becomes apparent that in Australia diagnoses of CBDs are closely intertwined with its history of colonisation and the impact this has had on Aboriginal communities (Tribe, 2014). In developing effective strategies to prevent or improve the outcomes related to CBDs, there is a need to build on the strengths of Aboriginal culture and the resiliency of its people through a deep commitment to healing, genuine partnerships and holistic care (Edwige and Gray, 2021; National Aboriginal Health Strategy Working Party, 1989).

Objective 2. To describe how the NS model of care was co-designed with the health sector, schools and the Aboriginal community.

The school and Aboriginal community had identified that students attending YGS had complex needs due to social marginalisation and social issues. They believed that a holistic and integrated model in which professionals from the health, education and social care sectors worked collaboratively was required to meet the needs of these students (Gonski Institute for Education, 2020). The development of the NS model of care in partnership with the health sector, education sector and Aboriginal community has been described through a published article (Chapter 6). The model of care was developed over almost a decade to address inequitable health, education and social outcomes for students attending YGS with oversight provided by the Wouwanguul Kanja community reference group. The model of care was child-and-family centred and based at the school. There was a focus on taking a holistic approach to the needs of children. Key professionals from the health, education and social sectors worked collaboratively to gather information, conduct assessments with families and follow up on recommendations. A memorandum of understanding (MOU) was prepared to formalise roles and responsibilities. An evaluation plan was also embedded within the model. Community acceptance of the model provided impetus to consider what scaling up would look like.

Objective 3: To evaluate existing data on students attending NS between 2016 and 2019 to inform ongoing implementation efforts and scaling up of the model of care.

The NS model of care was unique in that it was delivered to students attending a specialised behavioural school. The quantitative evaluation of students attending NS between 2016 and 2019 provided an understanding of the types of concerns experienced by students. In line with the local and international literature, students had multiple unmet physical health, mental health and social needs (Gore et al., 2011; Hetrick et al., 2017; McGorry et al., 2024; National Research Council et al., 2009). The qualitative evaluation provided more information about these students, describing the degree of marginalisation they had experienced because of socially determined factors that often manifested as problematic behaviour. The quantitative study showed that students at the school were at high risk of social disadvantage, with 76% known to child protection services (Baidawi et al., 2020; Baidawi and Sheehan, 2019; Leckning et al., 2023; Mendes et al., 2014). Despite having high health and wellbeing needs, few students accessed paediatric or mental health services (22.8%; 27.8%, respectively) and engagement with services was low (33.3%). In contrast, attendance at NS was high (failure-to-attend rate = 7.6%; cancellations = 8.9%) with reasons for non-attendance inclusive of the behavioural issues experienced by the student and parents having inflexible work commitments. These findings indicate that the model was successful in engaging students and was an acceptable way to deliver health services.

After the multidisciplinary team model of care was delivered, behavioural improvements as measured by pre- and post-SDQ teacher reports were noted. These showed a significant decrease in total difficulties scores ($M = 6.2$, $SD = 6.165$, $p < 0.05$, eta squared = 1.013 [large effect]) and all subsets. These behavioural improvements were promising because they indicated a better likelihood of engagement with the educational curriculum (Gonski Institute for Education, 2020) and reflected the positive impact made through a collaborative cross-sector approach, which allowed the holistic needs of students to be addressed.

Objective 4: To understand the facilitators and challenges of developing and operating a multidisciplinary school-based model of care for CBDs.

NS was a pilot site developed from the ground up in partnership with the education sector and the Aboriginal community over almost a decade. The goal of the model was to provide child-and-family-centred care to students attending the school. In the qualitative evaluation, an understanding of the facilitators and challenges of forming a working relationship between the health and education sectors was developed through the lens of the IPCHS framework, and is summarised here (World Health Organization, 2016).

Strategy 1: Engaging and empowering people and communities

In the IPCHS framework, Strategy 1 refers to engaging and empowering people and communities to make effective decisions about their own health (World Health Organization, 2016). The qualitative study demonstrated the close involvement of the Aboriginal community in designing the NS model, as well as other models across NSW, as a strong facilitating factor. The Aboriginal community was integral in developing the whole-of-child model and voiced a need for partnerships across sectors, seeing this as a more efficient way of delivering services and as promoting a sense of community connectedness (Kilian et al., 2019; Mental Health Commission of NSW, 2020). The literature identifies these features as key to providing culturally safe practice (Carrigan et al., 2023; Thomas et al., 2011). Further exploration of this finding through the qualitative study, and supported by the literature, showed that schools were an appropriate setting for the delivery of health services because of the convenience and trust they afforded to families (Keeton et al., 2012; World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021).

Strategy 2: Strengthening of governance and accountability

In Strategy 2 of the IPCHS framework, the importance of governance and accountability through a participatory approach in decision-making and evaluation is described. NS required cross-sector governance. Similarly to previous studies, this process was challenging to establish

(Ling et al., 2012; Looman et al., 2021). However, facilitators included collaborative governance whereby processes around roles and responsibilities were discussed and then formalised through an MOU. Teams also met regularly to develop a shared understanding of clinical issues and to develop cohesive workflow practices. The literature demonstrates that these avenues are important in creating a respectful and cohesive multidisciplinary culture (Ling et al., 2012; Looman et al., 2021; Petch, 2014).

For NS, one of the key mechanisms for strengthening governance and accountability was through the formation of a community reference group called Wouwanguul Kanja. This reference group guided local implementation by emphasising the need for sectors to work collaboratively at the school, and in a holistic manner to provide a one-stop shop for students. The group assisted in designing and interpreting the evaluation process as well (Ling et al., 2012; Sydow et al., 2011).

Strategy 3: Reorienting models of care

The NS model allowed healthcare delivery to be shifted from traditional health settings to schools. The concept of a school health team, which consisted of a core set of professionals from the health, allied health, education and social sectors as well as Aboriginal community workers, who worked within a school or across a group of schools, was described by participants (Evans et al., 2016; Hole et al., 2015; Taylor and Guerin, 2019). Mechanisms for building positive team culture included working through complex cases together and shared professional development sessions (Lara Montero et al., 2016; Looman et al., 2021). To assist teams when scaling up, incremental growth models were preferred (Borgermans et al., 2017; Ling et al., 2012), as was a balance between flexible and formal structures that outlined roles and responsibilities within teams (Carrigan et al., 2023).

Strategy 4: Coordination of services

Coordination of services was an essential part of the model of care. The multidisciplinary approach to assessment and follow-up was valued by staff, stakeholders and the community and facilitated normative integration of the model. In addition, ‘integrators’ who connected families with services and helped coordinate different organisations were seen as playing a pivotal role (Fraser et al., 2018; Looman et al., 2021). A barrier to coordination of services included staff turnover or changes to how services were delivered. For NS, there were periods when staffing was unstable. This created difficulty when consolidating processes and managing expectations. Funding for resources was also a challenge for partners. Similarly to other integrated care initiatives, stakeholders needed to explore various avenues for resourcing, including grants and private contracts (Cheng and Catallo, 2020; Looman et al., 2021; Petch, 2014). In other circumstances, creative solutions such as re-imagining how available resources could be utilised was required (Hunt et al., 2015).

Strategy 5: Creating an enabling environment

Strategy 5 of the IPCHS framework refers to creating an enabling environment for the previous four strategies to become operational. Schools were seen as exemplary in accommodating the model of care and the multidisciplinary teams. Shared or collaborative leadership across the sectors, which are further discussed under Objective 5, was also fundamental for effective implementation (Evans et al., 2016; Johri et al., 2003; Kirst et al., 2017; Petch, 2014). Other enablers included preparing manuals and MOUs that outlined procedures and protocols (Angus and Valentijn, 2018; Cameron et al., 2014; Johri et al., 2003; Kirst et al., 2017).

Objective 5: To understand how the NS model could be implemented in other education settings, as well as the related facilitating factors and challenges.

The themes derived from the IPCHS framework (World Health Organization, 2016) were aligned with Looman's implementation strategies to understand the facilitators and challenges of scaling up the NS model to other education settings (Looman et al., 2021).

Collaborative governance

The qualitative evaluation revealed that one critical implementation strategy for scaling up the integrated care model is collaborative governance. This requires the engagement of a broad range of stakeholders through community consultation and co-design so that there is shared responsibility over the model (Evans et al., 2016; Johri et al., 2003; Kirst et al., 2017; Petch, 2014). The literature shows that leadership is important in applying collaborative governance effectively (Blank, 2015; Looman et al., 2021). When working across sectors, at times it can be unclear who the leader is, which can lead to confusion and loss of direction (Blank et al., 2012). In many respects, leadership in cross-sector initiatives is about identifying key partners. For SBHC programs, key partners include members from the health and education sectors as well as social care professionals, managers and key administrators. These partners need to communicate clearly with each other as well as with other team members. They are responsible for ensuring that a common vision and common goals are formed and that a respectful culture is created (Blank et al., 2012; Ling et al., 2012; Looman et al., 2021). Key partners are fundamental for building an infrastructure that facilitates achievement of that shared vision, including the development, management and evaluation of local care pathways (Cheng and Catallo, 2020; Evans et al., 2016; Johri et al., 2003; Kirst et al., 2017; Petch, 2014). These partners are also responsible for developing clear policies and protocols for operations and delivering training and evaluation goals (Blank et al., 2012; Eastwood and Miller, 2021; National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013)

Collaborative governance crucially depends on relationships between sector partners. These relationships need to be fostered in a proactive and continuous manner. Building trusting partnerships requires time and effort, the value of which is often underestimated in time-pressured and outcome-driven work settings (Kimberlee, 2001). Strong partnerships are beneficial for many reasons, including consistency, governance, sustainability, scaling up and advocacy (Blank, 2015; Hunt et al., 2015; National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013). When scaling up, collaborative governance can be facilitated through two types of committees. The first is a committee of leaders at a meso level whose role is to ensure that the purpose of the initiative is clear and to oversee operational processes (Blank, 2015; Ling et al., 2012; Sebastian et al., 2023; Sydow et al., 2011). The second is a community reference group at a micro level, such as the Wouwanguul Kanja community reference group, who provide knowledge and an understanding of the needs and resources within a community (Ling et al., 2012; Sydow et al., 2011).

Multidisciplinary teams and team culture

Another key implementation strategy proposed by participants was the concept of a school health team. Central to this concept was having a core set of professionals with representatives from each sector. This team could work across a cluster of schools to deliver the model of care and develop expertise about available services, referral processes and the model itself such that, over time, the team could also cultivate more robust clinical and governance processes (Evans et al., 2016; Hole et al., 2015; Taylor and Guerin, 2019).

For multidisciplinary teams to be effective, an important facilitator is building a respectful culture, the basis of which is trusting relationships. Through this research, the mechanisms identified for enabling this included communication, working through complex cases together and shared professional development sessions (Haynes et al., 1999; Johri et al., 2003; Ling et al., 2012) because these situations provided opportunities to understand the skills and expertise of others in the team (Lara Montero et al., 2016; Looman et al., 2021). The literature adds that for respectful and effective communication to occur, members need to feel encouraged to participate in an open dialogue about challenges and solutions while feeling confident to make midcourse corrections (Blank, 2015; Lemkin et al., 2019; Ling et al., 2012; Looman et al., 2021).

Coordination of services

Coordination of services was a key part of the model and was seen as a significant component for its success. Participants described the need for an integrator. An integrator possessed the skills to assist with engagement, bridge communication with families and other sectors, navigate care pathways, and maintain team cohesion (Fraser et al., 2018; Looman et al., 2021). These essential skills were held by various professionals, including school counsellors, Wellbeing and Health In-reach Nurse Coordinators, social workers, general practitioners and community workers, meaning that when scaling up there was flexibility about who could assume this role depending on the resources available in a community (Carrigan et al., 2023).

The literature describes a further avenue for coordination using intermediary partnerships. This can involve other agencies, including non-governmental organisations or higher education institutions. The role of such partnerships would be to actively facilitate evaluation processes and work towards aligning and integrating programs and services while supporting financing and resource development, policy development, professional development and engaging with the broader community (Blank et al., 2012; Ling et al., 2012; Looman et al., 2021).

Other implementation strategies

Additional facilitating factors for scaling up included using incremental growth models (Borgermans et al., 2017; Ling et al., 2012) and providing a balance between flexible and formal governance structures (Carrigan et al., 2023). Other enablers included preparing manuals and MOUs to create clarity about roles, responsibilities, funding allocation and contributions, shared goals and intended outcomes. Resourcing the development of data systems and research capacity to support collaboration was also considered important (Angus and Valentijn, 2018; Cameron et al., 2014; Johri et al., 2003; Kirst et al., 2017).

10.3 The Kalgal Burnbona School-based Integrated Care Framework

The implications of the NS mixed-methods evaluation and statewide interest in scaling up the model of care led to the development of a framework for implementation. The Kalgal Burnbona framework proposes a shift from SBHC to SBIC, highlighting the significance of cross-sector partnerships. SBIC is thereby defined as deeply embedded partnerships between the health and education sectors to provide health, education and social support to children and their families by working collaboratively and collectively with each other, the community and other key stakeholders while endeavouring to integrate care at a systems level.

Kalgal Burnbona is a framework developed for implementing the concept of SBIC within SLHD that aligns with the Rainbow Model of Integrated Care (Valentijn et al., 2019). The Rainbow Model's vision of person-focused and holistic health care sits well with Aboriginal concepts of SEWB and whole-of-child approaches to wellbeing (Kilian et al., 2019; Mental Health Commission of NSW, 2020). The Kalgal Burnbona approach is tiered, according to a prioritisation system involving a combination of national indexes of socio-economic advantage and community knowledge. At a micro level, schools at each tier level would form a school health team consisting of health, allied health, education and social care professionals, depending on the needs and available resources within a community. It is envisioned that this group of professionals could work across several schools to implement the model and to share resources. This team would meet regularly to form a system for referrals, clinical assessments and follow-up as well as evaluation of the program.

To assist with integration, two committees would be formed. The first would be an overarching Kalgal Burnbona team (i.e. meso level), who would provide oversight of the initiative, while a second local community steering group (i.e. micro level) would be formed to represent clusters of schools. These committees would consist of stakeholders from each sector and the community to promote shared responsibility and collaborative governance over the program. Policies and guidelines would be developed with these committees to promote integration at a meso level, such as MOUs, procedural documents and evaluation processes. At a macro level, key partnerships between the different sectors involved in child health and wellbeing would be built in a continuous manner so that goals and outcomes could be aligned. To achieve functional and normative integration of the Kalgal Burnbona framework, MOUs across sectors as well as procedural documents to guide multidisciplinary teams at individual schools are required. Since beginning this research, a logic model and a start-up manual have been produced to assist other sites with service delivery, governance and evaluation processes (Valentijn et al., 2013). Since it is in the early stages of formation, normative integration of the Kalgal Burbona framework is being developed through cross-sector meetings for shared professional development, case discussions and review of processes, and to develop an ongoing evaluation plan.

10.4 Clinical, Research and Policy Implications

Despite the strong association between health and education outcomes, these two sectors have often grown and developed without interacting with each other. The two sectors rarely share information and data, and often develop interventions without cross-sector collaboration and partnerships (Chiang et al., 2015; Eastwood and Miller, 2021). This leads to missed opportunities to actively collaborate for a more integrated, long-term approach (Baciu et al., 2015). This thesis presents implications for clinical practice, research and policy.

10.4.1 Clinical Implications

CBDs are complex entities that are multifactorial in nature. The effects of CBDs pervade the health and education sectors, affecting student and staff wellbeing (Giles-Kaye et al., 2023). Therefore, fundamental shifts in clinical practice are required. First, the link between health and education outcomes needs to be clearly articulated. This includes recognising that one is dependent on the other and that treating each domain as mutually exclusive perpetuates a cycle of inequity that permeates into adulthood (World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021). Second, a balanced understanding of CBDs is needed. This involves an appreciation of the strengths and limitations of diagnostic criteria, awareness that children move in and out of diagnostic criteria over time, and that they may not fit cleanly into any set of criteria (Clark et al., 2017). Furthermore, the diagnostic criteria for CBDs have been developed from a Westernised or Eurocentric position, which can negate the values and beliefs of other cultures. Therefore, it is important to value how behaviour is understood within different cultural contexts and to recognise the impact of behavioural diagnoses on communities (Cauce et al., 2002; Clark et al., 2017). In this thesis, Aboriginal cultural concepts regarding the strength of connections with family, community and country are described (Featherstone, 2016; Houston, 1989; Kelaher et al., 2018). These life ways were disrupted by colonisation, the impact of which continues to have an intergenerational effect whereby behaviour that does not fit within Western norms are often labelled as a disorder (Edwige and Gray, 2021; Featherstone, 2016). Third, the complexity inherent in CBDs, in which there is an interplay between physical health, mental health and social factors, means that new approaches to the assessment and management process needs consideration (Fairchild et al., 2019; National Collaborating Centre for Mental Health [UK], Social Care Institute for Excellence [UK], 2013). In line with Aboriginal concepts of SEWB, a holistic approach using models that wrap around the child and family are a more successful and culturally safe way of practising than current models (Eastwood et al., 2020; Mental Health Commission of NSW, 2020; Newman et al., 2022). To operationalise such models, from the perspective of the health sector, healthcare professionals need to reorientate the way that they work. This involves sectors working collaboratively, recognising the knowledge and experience of teachers and schools, thus shifting away from the 'clinician as expert' model (King et al., 2014; Rothì et al., 2008). This approach allows a better understanding of the child to be gained while promoting a shared and integrated approach to management (Eastwood and Miller, 2021). A key mechanism for integrating care in this way is co-location, in which healthcare professionals position themselves at schools to deliver health care and participate in multidisciplinary meetings and case discussions (Platt et al., 2018; Spencer et al., 2019). This way of working is valued by families and communities because it lends a sense of connection while protecting families from having to retell psychologically traumatic stories (Bateman et al., 2014). In this thesis, while partnerships between the health and education sectors are explored, it is easy to see how other sectors could play a role in the model, including the child protection sector, mental health sector, housing sector and justice sector (Fraser et al., 2018). In real time, the NS model of care has continued to evolve, and other services are now attending the school, including drug and alcohol services, youth justice officers and Aboriginal community workers. Finally, any changes to clinical practice would not be possible without community and stakeholder buy-in. It is thus imperative that communities and stakeholders be engaged from the outset in co-designing the model. This would promote shared ownership over the model and act as a mechanism for facilitating governance, normative integration, sustainability and scaling up (Looman et al., 2021).

The research findings indicate strong practice support for school-based integrated programs and potential useful strategies for implementation and scaling up (Shaw et al., 2022). These strategies include community consultation and co-design to create locally effective and culturally safe cross-sector models that improve access and engagement with health care. Another implication for practice is the need to actively build the culture of multidisciplinary teams through collaborative practices and respectful interactions. Moving forward, new skills need recognition, including the pivotal role of integrators or coordinators. Furthermore, collaborative and shared leadership across sectors is particularly important in providing guidance and direction while securing stable funding streams. Overarching mechanisms for implementation include alignment of operational systems through protocols and policies while maintaining a balance between structure and flexibility.

10.4.2 Research Implications

While there is research on different elements of SBHC programs, the lack of uniformity across different models of care and how outcomes are measured makes conclusive evidence difficult to draw upon (Arenson et al., 2019; MacArthur et al., 2018; Willgerodt et al., 2021). In itself, the NS model of care is unique in that it was co-designed for students attending a highly specialised behavioural school, which makes it difficult to compare across other settings. Arguably, such programs are complex community interventions (Skivington et al., 2021). Evaluation of such interventions requires an understanding of the complexity that arises from the various components of the intervention and from the way the model interacts within the context in which it is being implemented. This represents a shift from traditional evaluation models in which the focus is usually on the effectiveness of an intervention, a view that can negate important learnings regarding how interventions can become implemented in real-world settings (Skivington et al., 2021). Yet future research pathways do require robust design and adequate resources. This requires the commitment of stakeholders and the community to co-design and clearly articulate the goals of the research and what ‘effective’ means using standardised language (Argall and Allemano, 2012). Potential outcomes of interest include the impact of the model on schools, including staff satisfaction with the model, costs associated with participating in the model, teacher wellbeing and retention, and routinely collected education outcomes, such as literacy and numeracy data, behavioural incidents data, changes in attendance and suspension data (NSW Department of Education and Communities, 2015). The perspectives of students and families are also important to explore in future studies that are funded to adequately reimburse participants for their time.

Although this research has shown acceptability and feasibility on a small scale, further larger scaled studies at sites across rural and urban NSW are required to understand the adaptability, effectiveness and scalability of the model. In addition, useful implementation measures may include outcomes such as the number of multidisciplinary meetings held, service encounters and outcomes of referrals. Such studies could involve a quasi-experimental design in which clusters of schools receive the model or parts of the model at different time points to compare the real-world effectiveness of the intervention (Maciejewski, 2020). From a longitudinal perspective, emergency department presentations, hospital admissions and encounters with the child protection system and justice system could be evaluated using data linkage. This process would allow data from one source to be paired with data from other existing data sources, such as hospital or police databases, to extrapolate the long-term impact of the model on a range of health, education and social outcomes (Bohensky et al., 2010).

Furthermore, as momentum for implementing SBHC programs across Australia has grown, so has a need to understand what other models are being developed (Australasian School-Based Health Alliance, n.d.). This would require a statewide census in which the similarities and differences between rural and urban models, including cultural contexts, workforce limitations and funding paradigms, are elucidated. A comprehensive cost analysis is also required to assist with scaling up, while an economic evaluation would be useful for informing policy recommendations.

Another consideration for future research is the role of family-based therapies such as MST and FFT to reduce child abuse and neglect among high-risk families and to increase the number of children who remain safely with their families (Economidis, 2023). It has been recommended that further consultation with the Aboriginal community be conducted to understand whether these programs can be adapted so that they are more acceptable to the Aboriginal community (Economidis, 2023; Audit Office of New South Wales, 2020).

10.4.3 Policy Implications

The international evidence is now clear: there is a mental health crisis among children and young people, and action is required urgently (Kieling et al., 2024; Maslowski, 2021; McGorry et al., 2024). Failure to do so is essentially a violation of the rights of children. Access to adequate mental health services is limited, even in high-resource settings (Signorini et al., 2017), and existing services often fail to engage young people (McGorry et al., 2024). This leads to missed opportunities to provide developmentally appropriate early intervention for a group that often has limited agency to act on their own behalf (Heimer and Palme, 2016; Seidler et al., 2020). Furthermore, the strong association between health, education and social outcomes needs to be asserted in all policy. With the global cost of all mental disorders estimated to range from USD2.5 to USD8.5 trillion in 2010 and projected to double by 2030, the economic case for innovative approaches is pressing (Bloom et al., 2012). Modelling has shown investing in the prevention of depression or anxiety at school or university leads to a return from that investment in terms of healthcare service savings and increased productivity (McDaid et al., 2019).

The economic argument for policy reform is strong and so is the moral one (National Mental Health Commission, 2021). For the rights of children to be fully realised, the principles of the UN Convention on the Rights of the Child need to be comprehensively expressed throughout all policies (Heimer and Palme, 2016). An example of comprehensive policy reform can be drawn from the National Framework for Protecting Australia's Children within Australia, in which policies relating to child protection were reviewed with the notion that 'child protection is everyone's business' (McDougall and Gibson, 2014, p. 22). This led to a focus on prevention both in adult and in child and family services rather than a siloed approach (McDougall and Gibson, 2014). For the reform to become operational, the authors recognised that systematic organisational commitment was necessary, and they identified collaboration, capacity building, training of staff and normative integration as facilitators (Maybery and Reupert, 2009). This research has shown that the NS model of care, similarly to other SBHC initiatives, is acceptable to students, parents, schools and communities while improving access and engagement to culturally safe health care (Arenson et al., 2019; Keeton et al., 2012; World Health Organisation, 2021). Scaling up the model requires macro-level policy to guide alignment, governance and sustainability of services, but in doing so, a degree of flexibility is required to reflect the needs and voices of diverse communities (de Mello-Sampayo, 2024).

Reflecting on a 'whole-of-government' reform, it becomes clear that for any improvements in the wellbeing of children, policy integration and coordination across, but not limited to, the education and health sectors is required. Other sectors include social services, child protection, justice and housing (Eastwood and Miller, 2021). Siloed approaches to policy and to health care are no longer valid or helpful, and efforts need to be focused on culturally safe, child-and-family-centred and integrated approaches, preferably from a single location such as those provided by schools (Cleveland et al., 2020; McGorry et al., 2024).

Within Australian policy is another issue of contention. This pertains to the inequitable gap between the outcomes of Aboriginal and non-Aboriginal children (Arnold and Arisara, 2019; Australian Government, 2023). For Aboriginal communities, inaccuracies and challenges around data collection have impeded decision-making processes and reduced the visibility of

Aboriginal people in policy. Additionally, from a historical perspective, data relating to Aboriginal people have been used to create policy that has been damaging to Aboriginal communities (Murrup-Stewart et al., 2021; Riley, 2021). To address these issues, the Aboriginal community needs to be respectfully and genuinely included in all aspects of governance and policy development. In doing so, policymakers will gain a better understanding of what Aboriginal communities want while allowing them to have control and self-determination over their health and SEWB (Griffiths, 2023).

From an education policy perspective, formal diagnoses for CBDs are often required for schools to access support for students (Prykanowski et al., 2015; Wodrich et al., 2008). This is problematic given the limitations of the diagnostic process as outlined earlier. The literature shows that an understanding of functional impairments is a more appropriate measure of need rather than diagnoses alone. For example, the inability to attend school or maintain positive social relationships can have a significant impact on wellbeing (Andrews and Schweizer, 2023). Therefore, alignment work between health and education policy is required to identify how children can be better supported to meet their needs.

The rights of children delineated in the UN Convention on the Rights of the Child include the rights to health and education (United Nations, 1989). Equally, the voice of children in matters that affect them needs to be listened to. Despite this, children and youth are often not visible in societal discourses or public policy (Equit et al., 2024). While there have been advances in children having representation in policy development, this has been criticised for being tokenistic because the balance of power inevitably favours adults and policymakers (Tisdall and Davis, 2004). A policy implication that lies within this finding is the need to invest in the agency of children. This means accounting for how children can play a tangible role in policy and what outcomes of engagement could look like (Heimer and Palme, 2016).

The Kalgal Burnbona integrated framework described in this thesis postulates a vision of integrated care that aligns with existing national and statewide policies (see Table 10.1). In particular, the Brighter Beginnings—First 2000 Days policy and the Wellbeing and Health In-reach Nurse Coordinator Program have recently been established in recognition of the importance of the early years in child development and behaviour as well as the powerful effect that collaboration between the health and education sectors can have (Diaz et al., 2023; NSW Health, 2022; NSW Ministry of Health, 2019). The Kalgal Burnbona SBIC framework provides a mechanism for continuation of these policies by reaching school-aged children.

Table 10.1: School-based Integrated Care Alignment with Policy

Government/Entity	Policy Alignment
NSW Government	Brighter Beginnings: First 2000 Days Framework The Henry Review NSW Their Future Matters Future Health Strategic Framework 2022–2032 NSW Regional Health Strategic Plan 2022–2032 NSW Youth Health Framework NSW Integrated Care Strategy Our Plan for NSW Public Education 2024–2027 NSW Department of Education’s Wellbeing Framework
Australian Government	National Disability Insurance Scheme Review The Closing the Gap Implementation Plan National Children’s Mental Health and Wellbeing Strategy Primary Health Care 10 Year Plan 2022–2032 Australia’s Disability Strategy 2021–2031
World Health Organization	Health Promoting Schools Framework

10.5 Strengths and Limitations of Research Design

A strength of this thesis is its grounding in critical realism, through which the multiple layers or strata underlying reality were intentionally uncovered (see Figure 10.1). However, critical realism along with other worldviews described in the literature are subject to being Eurocentric, thereby excluding the viewpoints of other cultures. From an Aboriginal research perspective, research about Aboriginal people has been used to influence the development of policies and practices that have contributed to ongoing marginalisation. More appropriate ways of conducting research in Aboriginal communities have been described in the literature (Murrup-Stewart et al., 2021; Riley, 2021). These include taking a more critical and reflective position by the provision of longer time frames to allow relationship building, a deep understanding about the purpose of the research and genuine community consent (Riley, 2021). The NS model of care has evolved over a period of almost 10 years and was developed after a need was voiced by the Aboriginal community. This degree of prolonged engagement and consistency has led to frequent formal and informal discourses with the community and the building of trusting relationships (Riley, 2021). This is exemplified in the naming of the Ngaramadhi Space program by the Aboriginal community, articles written with the community in which the impact of CBDs from a cultural lens is explored (see Chapter 5), and the clinical and research governance provided by the Wouwanguul Kanja community reference group.

Furthermore, in this body of work, the complexities associated with a diagnosis of a CBD in the setting of culture, history and society have been explored rather than minimalised. A discourse on how the definition and expectations of childhood has evolved over time and how Western and Aboriginal concepts of behaviour differ has been elucidated while an in-depth understanding of how the field of psychiatry developed alongside these societal changes has been provided. This includes how diagnostic criteria were adapted to provide guidance on the diagnosis and management of various disorders, including CBDs, as well as the limitations of these approaches, particularly across different cultural settings. Through these viewpoints, this thesis provides a nuanced understanding of the diagnosis and management of CBD.

Building on these concepts, the strong relationship between health and education outcomes across the life span and from a social determinants' perspective has been explained. This provided a platform for considering how concepts from integrated care models could offer a solution for the physical health, mental health and educational needs of children and young people. The role of SBHC programs across the world were explored to understand how similar programs could play a role within Australia.

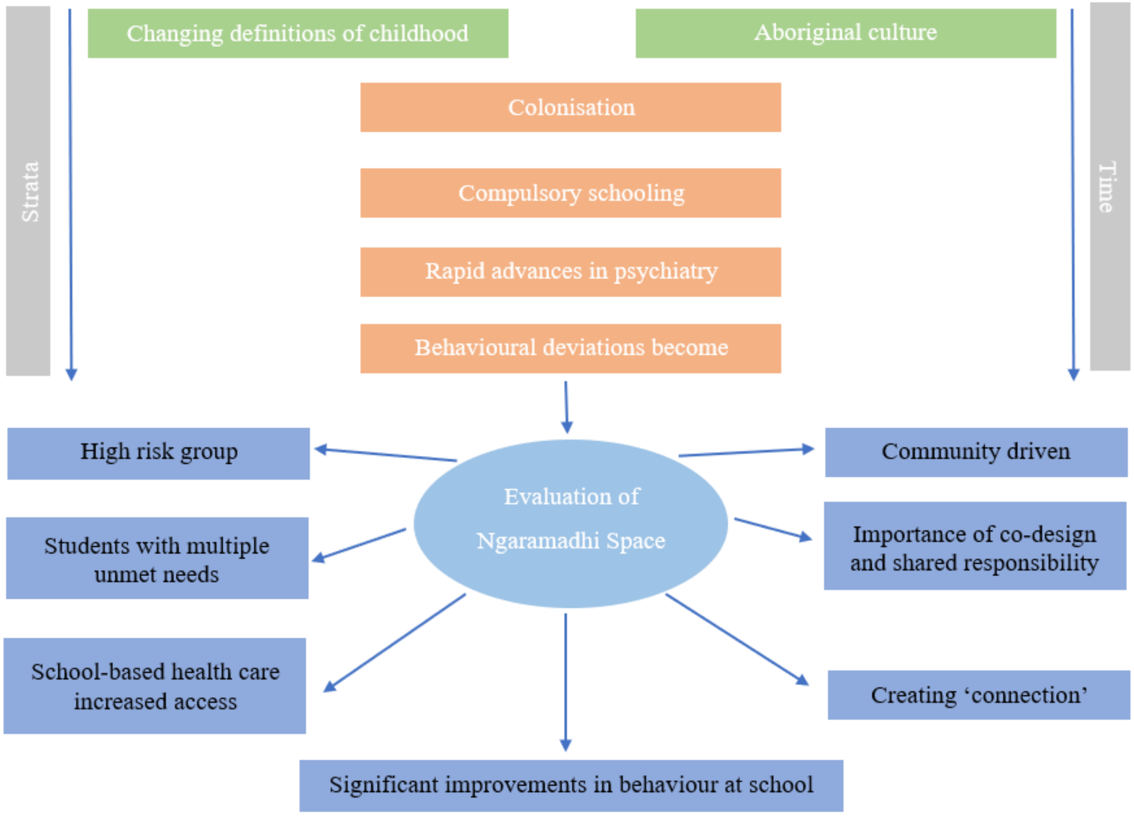

Figure 10.1: Strata Identified through Critical Realist–Informed Evaluation of Ngaramadhi Space

The knowledge derived from the above literature reviews was further informed by the Aboriginal community through the Wouwanguul Kanja community reference group. The impetus for the intervention was driven by the community to meet the needs of students attending YGS. The integrated and multidisciplinary nature of the model of care was developed in partnership with the health sector, the education sector and the community reference group. The NS model thereby provided a unique solution to the complex needs of students attending YGS. The community reference group provided deep and ongoing insights and direction into developing a culturally safe model that would benefit students at the school. This relationship was fostered by consistency and leadership. The group oversaw the design of the mixed-methods evaluation and interpretation of findings.

An added strength of the research design was understanding the facilitators and barriers to SBHC implementation in different education settings by interviewing a range of stakeholders from other schools and a CoP. The thematic analysis of the qualitative data was then aligned with the IPCHS framework and Looman's implementation strategies to provide a pragmatic understanding of how the model could be scaled up. From a position of strength and using the KTA Framework (Field et al., 2014), the results of the mixed-methods evaluation were used to design the Kalgal Burnbona framework, which can be utilised to benefit the greater community.

One limitation of this research was using the term CBD, which often encompasses both ADHD and CD. For ease of understanding and to highlight the impact that such diagnoses have on individuals and society, CD was elaborated on with the recognition that CD and ADHD are diagnoses that often interact with each other and may occur as comorbidities.

Another limitation of this community-based study related to the small sample, which reflected the size of the school. This is due to the distinct nature of the school, which is specialised for children with significant CBD. Furthermore, it was not possible to include a comparison group because it was difficult to find a similar group to draw comparisons with. As well as this, the students inherently had high needs and so it was not ethical to randomly allocate the intervention to some students and not to others. This approach was not acceptable to the Wouwanguul Kanja community reference group either. While this limits its generalisability, this evaluation provided a voice for a marginalised group of young people.

For the qualitative component of this study, while the sample size was also small, it did allow for in-depth discussions to be had with stakeholders who were closely involved with the subject matter. To broaden the scope of the study and to understand how the model could be implemented in other settings, stakeholders from two other schools and a CoP were included in the study. This allowed sampling for expertise so that the broader content could be deliberated on, aspects that then informed the Kalgal Burnbona framework for scaling up. Furthermore, the qualitative study was limited in its ability to recruit students and parents. This was in part due to the nature of those attending the school, which predicated a higher degree of social marginalisation from the outset. Future studies should aim to improve recruitment in this group by providing reimbursement through grant funding.

Insider research played a role in this research (Sikes and Potts, 2008). As the lead researcher and a clinician, I was simultaneously the researcher and a subject being researched. Care was taken to ensure that the trustworthiness of the data was maintained and that potential bias was minimised. These measures included reflexivity, prolonged engagement with the research topic, triangulation, referential adequacy and allowing participants to verify their interviews (Greene, 2014).

10.6 Conclusion

Young people often have multiple unmet physical and mental health needs (Arenson et al., 2019; Clark et al., 2017; Juszczak et al., 2003; Kjolhede et al., 2021; Love et al., 2019). Mental health disorders are common in this group, affecting up to 20%, but only 30% of those affected are able to access mental health services (Clark et al., 2017; Merikangas et al., 2011). This mental health gap has a disproportionate effect on minority racial groups and those of lower socio-economic status (Clark et al., 2017; Keeton et al., 2012; Kilian et al., 2019). The substantial future costs associated with mental health issues, which have been exacerbated by the COVID-19 pandemic, have created a sense of urgency for finding novel approaches towards the prevention and management of such issues (Czeisler et al., 2020; Daniel, 2020; Fairchild et al., 2019). Schools play an important role in this process and in reorientating health services to where they can be more readily accessed by children and families (Ali et al., 2019; Kazdin, 2018; Lewallen et al., 2015; United Nations, 1989).

Administering health care in schools began in the early 1900s, when schools employed nurses to address increased student absences due to infectious diseases (Keeton et al., 2012a). Over the past century, SBHC has undergone transformative changes, evolving into a successful and holistic global strategy to address two major social determinants of wellbeing, namely, health and education (Dunfee, 2020; Keeton et al., 2012b; Love et al., 2019; World Health Organization, 2021).

In this research, the concept of CD as an example of a CBD has been explored as an issue that transects multiple sectors, including the health, education and social sectors (Fairchild et al., 2019). CD is a complex mental health disorder with a heterogeneous aetiology stemming from inherited factors, structural neural pathways and environmental legacies. Comorbidity is common with CD, as are differences in clinical manifestations, all of which create challenges when studying the effectiveness of various treatment modalities for the disorder. Despite this, there is evidence for early childhood interventions and preventive models in CD, but much less is known about effective treatment modalities for adolescents (Freitag et al., 2018a). This is made more complicated by the very nature of CD, which makes engaging and ensuring access to physical health and mental health care for young people difficult (Freitag et al., 2018a). It is for these reasons that a culturally safe, multidisciplinary and integrated care approach is required to improve outcomes for those experiencing CBDs (Norberg, 2010).

The concept of CBD has evolved over time and its meaning is embedded in historical proceedings and societal expectations. In Australia, the impact of European colonisation on the SEWB of Aboriginal communities cannot be underestimated. Aboriginal culture is deep and vast, beginning over 65,000 years prior to colonisation (Salmon et al., 2018). Aboriginal culture centres on connections with family, community and country (National Aboriginal Health Strategy Working Party, 1989). These connections were disrupted by colonisation and have greatly contributed to intergenerational health, education and social inequities (Featherstone, 2016; Kilian et al., 2019). In contrast to this, the field of mental health is young, developing most rapidly in the past century. In this short period, knowledge about mental health has changed and shifted. Classification systems such as DSM and ICD were developed to assist with diagnosis and treatment but they had limitations, especially across cultural settings (Clark et al., 2017). Gradually, a need for flexibility and holistic approaches to diagnostic processes has become more evident (Clark et al., 2017).

From a social determinants’ perspective, health and wellbeing are affected by various factors, including education and social issues (Chiang et al., 2015; Eastwood and Miller, 2021; Newman et al., 2022). Healthy students are in a better position to learn, and educated students are more likely to have good health throughout their lifespan (Blank, 2015; Chiang et al., 2015). Children and adolescents experiencing low socio-economic status or belonging to minority racial groups are at an increased risk of inequity (Larson et al., 2017; Turner et al., 2010), which places them at risk of developing behavioural or mental health disorders (Larson et al., 2017; Turner et al., 2010). Within Australia, Aboriginal children experience such inequities in the domains of education, health and socio-economic status (Doyle and Hill, 2008; Edwige and Gray, 2021; Salmon et al., 2018; Shultz et al., 2018). For children, the strong link between health and education means that partnerships across these disciplines is not simply desirable but essential in achieving equity (Allensworth and Kolbe, 1987; World Health Organization and United Nations Educational, United Nations Educational, Scientific and Cultural Organization, 2021).

Schools provide a universal platform to support students and communities (Cleveland et al., 2020). The international literature shows that SBHC models are acceptable to students, parents and stakeholders, and that resourcing and sustainability form the main limiting factors to implementation (Mason-Jones et al., 2012; Settipani et al., 2019; Spencer et al., 2019). There is evidence that use of SBHC models by children leads to improved physical health, mental health and education outcomes (Asarnow et al., 2015; Bains and Diallo, 2016; Francis et al., 2021; Leroy et al., 2017; Levinson et al., 2019; MacArthur et al., 2018; Mason-Jones et al., 2012; Settipani et al., 2019). SBHC has been shown to advance social equity (Knopf et al., 2016) and be economically beneficial (Ran et al., 2016). An Australian rapid review of SBHC showed that it promoted healthy eating, physical activity and mental health improvements in adolescents while being acceptable, accessible and affordable (Sanci et al., 2015). A recent report on school health partnerships within Australia estimated the social return on investment as being AUD3.5 for every AUD1 spent, with an estimated social benefit of approximately AUD65.7 million (Deloitte, 2024).

NS is a holistic child-and-family-centred model of care. Using a critical realist–informed, mixed-methods design, the model demonstrated improved access to health care and was acceptable to students, families and staff. There were promising trends towards improved teacher-reported behavioural scores after they received the multidisciplinary model of care. The NS school-based integrated healthcare model offered a novel, convenient and innovative way to engage students. Participants described the model as effective in engaging and empowering people and communities. The model of care was community driven, was delivered in a culturally safe manner and created connection between students and the community with beneficial effects on staff wellbeing. Potential strategies for implementing such models across NSW include community consultation and co-design; building multidisciplinary teams with new competencies and roles, such as integrators and coordinators; collaborative and shared leadership; and alignment of operational systems while maintaining a balance between structure and flexibility.

Overall, this research has shown that the model is feasible, acceptable and efficacious. It does, however, require high-level collaboration across sectors and at a micro, meso and macro system level. The value of doing so has infinite possibilities for communities by providing a shift towards child-and-family-centred care that improves engagement, access and outcomes for health delivery. With this in mind, an integrated framework called Kalgal Burnbona is proposed for scaling up across SLHD. This would allow holistic care to be provided at local schools, particularly as we navigate a post-pandemic era. Future research that aligns education, health and social goals is required to understand the replicability, adaptability, effectiveness, cost-effectiveness and scalability of the model in different settings.

In Australia, schools are an underutilised resource for the delivery of health and support alongside education. Collaboration between sectors can be challenging, but it allows a more coordinated and efficient approach to the management of complex social and health issues. The health sector can play a pivotal role in improving the wellbeing of children by forming effective partnerships with schools and communities. The NS model is a practice-based example of this and is in line with national and international frameworks for improving health service delivery and addressing inequity. SBIC models are valued by communities, creating impetus to scale up the initiative.

> It’s the way you treat people. It might be in the short term, but you’ve got to be able to do that. And I think that if we have a one-stop shop where the people recognise the people all the time, it makes them feel more comfortable. And we’re on a pathway to fixing some of the problems.
>
> —Uncle Terry

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Appendices

Appendix A: Participant Information Sheets

Phase 2

Yudi Gunyi School Evaluation

INFORMATION SHEET for Yudi Gunyi Students

Hello! We are from the University of Sydney. We are doing an evaluation of the Yudi Gunyi school. We are writing up a description of the school education model, including the Ngaramadhi Space This description will make it easier to share the Yudi Gunyi education model with others.

You are invited to be part of the evaluation because you are, or were, a student at the school. We would like to talk with you about your experience of Yudi Gunyi and the Ngaramadhi Space, including what you think is good and not so good about it, and any suggestions you might have. This will help the NSW Department of Education plan future programs. The NSW Department of Education is paying for the study.

This Information Statement tells you more about the evaluation. Please read it to help you decide if you want to take part. You can choose if you want to participate in this study. No-one at Yudi Gunyi school will know if you participate or not. If you have any questions about the evaluation, you can email Ally Drinkwater at alison.drinkwater@sydney.edu.au

If you sign the consent form, it means that you agree to take part in this evaluation , and that you:

✓ Understand what you have read in this statement

✓ Agree to your personal information being used in the ways talked about in this sheet.

What is this study about?

The aim is to develop a description of the Yudi Gunyi school 'wrap-around' model.

We want to understand how the teachers and the health professionals work together to support the students at Yudi Gunyi.

What will participation involve?

You will be asked to talk with someone from our team. We will ask you about your experience of being a student at Yudi Gunyi school.

We will talk either on the phone or in person. If you want to talk in person, one of us will meet you in the Ngaramadhi Space. You can choose to yarn with an Aboriginal person from our team, or have a friend or family member with you. We will work out a time and day that works for you.

If you agree, we will record the talk and have it typed up by a transcription service that follows the Australian privacy laws. We will read the typed-up information (transcript) to remember what we talked about.

You will need to sign the consent form before we talk. If you are under 18 years, you will need to have a parent or family member sign the consent form as well. If you need an interpreter, we will arrange one.

If you want to, you can read through the transcript. If you want to do this, tick the box on the consent form. If you want to make changes to the transcript, you will need to send it back within 2 weeks.

How long will it take?

We will talk with you for about 30 minutes. If you want to read the transcript later, that will take some of your time too.

Do I have to be in the study?

You do not have to take part. It is your choice and whatever you choose is fine. No-one except the team at Sydney University will know what you choose.

If you decide to take part, and then change your mind, you can tell us to delete the recording of our talk, as long as it is within two weeks of the interview, or up to two weeks after you get the transcript to read. If you do change your mind, just let one of us know.

You can also stop the talk at any time. If this happens, we will delete the recording and the information you have provided unless you say we can keep them. You can also choose not to answer any questions you do not want to answer.

Are there any risks or costs from being in the study?

We don’t think that you will feel upset by what we talk about, but you may feel uncomfortable if you want to talk about some of the challenges you have experienced. If you do feel upset, you can talk to the Yudi Gunyi staff or contact Lifeline on 13 11 14.

Are there any benefits for me being in the study?

It is not likely that you will get any direct benefits from being in the study. You will be given a $20 Coles/Myer voucher to cover any costs related to taking part.

What happens with the information I give?

When you agree to take part, it means that you are agreeing to us using the information you have provided for the purposes of this study.

Your information will only be used for the reasons we have told you about in this Participant Information Statement, unless you agree to other uses.

All of the information you give will be kept confidential and only we will have access to that information, except if you share information about crimes you haven’t told the police. The information from the talk will be kept safely on computers at the University of Sydney. Only the team named in this statement can listen to or look at them.

We may use information you share with us, in reports and other academic papers, and/or at conferences, but we will make sure no-one will know the information was from you. We will only use the information you give in a general way—we will not use any personal stories or situations you tell us.

There is a second part to the study as well. This part is to understand more about how the health sector and education sector work together. This part will be done by Dr Santuri Rungan. Dr Rungan used to be a paediatrician working at Ngaramadhi Space. Dr Rungan will be given data that is collected during your interview. There will be no information about who you are (de-identified) in this data so Dr Rungan will not be able to identify who you are.

Who is running the study?

The study is being run by:

- Associate Professor Jennifer Smith-Merry, Director, Centre for Disability Research and Policy, the University of Sydney.
- Ally Drinkwater, Research Officer, Centre for Disability Research and Policy, the University of Sydney.
- Joanne Hinitt, Research Officer, Centre for Disability Research and Policy, the University of Sydney.

Staff from the Department of Education may help contact some people for the study, but they will not know who is participating and they will not see the information collected from when we talk.

Complaints

This study has been approved by the HREC of the Aboriginal Health and Medical Research Committee *[INSERT* protocol number once approval is obtained*].* We have agreed to carry out the study according to the *National Statement on Ethical Conduct in Human Research (2007)*

If you are worried about this study or you want to make a complaint, you can contact the Aboriginal Health and Medical Research Committee using the details below:

The Chairperson
AH&MRC Ethics Committee
35 Harvey Street Little Bay
NSW 2036 Australia
Email: ethics@ahmrc.org.au

Further information and who to contact

If you wish to participate in this evaluation , please contact Ally Drinkwater by xx(date 2 weeks after the date of the invitation). You can email Ally Alison.Drinkwater@sydney.edu.au or phone 02 9351 9060.
If you have any questions about this study, please contact Ally Drinkwater or Jennifer Smith-Merry. If you would like to know more at any stage during the study, please feel free to contact us on 02 9351 9060, or email:

Ally Drinkwater: Alison.Drinkwater@sydney.edu.au

Jennifer Smith-Merry jennifer.smith-merry@sydney.edu.au

Phase 3

Participant Information Sheet

Implementation Study about School-Based Health Care for Children Experiencing Problematic Externalising Behaviour

Dr Santuri Rungan (Responsible Researcher)
Faculty of Medical Research, University Of Sydney
Email: SLHD-ComPaedsSchoolClinics@health.nsw.gov.au

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1. What is this study about?

We are conducting a research study about school-based health care. We are interested in finding out about your experiences with this approach including some of the benefits and challenges encountered. Taking part in this study is voluntary.

Please read this sheet carefully and ask questions about anything that you don't understand or want to know more about.

2. Who is running the study?

The study is being carried out by the following researchers:

RESEARCHER	DEPARTMENT	ROLE
DR SANTURI RUNGAN	HEALTH AND MEDICAL RESEARCH, UNIVERISTY OF SYDNEY	PHD STUDENT
PROF JOHN EASTWOOD	HEALTH AND MEDICAL RESEARCH, UNIVERISTY OF SYDNEY	PHD SUPERVISOR
PROF JENNIFER SMITH-MERRY	CENTRE FOR DISABILITY RESEARCH AND POLICY, UNIVERISTY OF SYDNEY	PHD CO-SUPERVISOR

DR HUEI MING LIU	HEALTH AND MEDICAL RESEARCH, UNIVERISTY OF SYDNEY	PHD CO-SUPERVISOR
DR AMBER TICKLE	UNIVERSITY OF SYDNEY	PUBLIC HEALTH TRAINEE

Dr Santuri Rungan is conducting this study as the basis for a Doctorate of Philosophy (PhD) at The University of Sydney.

Conflicts of interest

Dr Rungan is a paediatrician at Sydney Local Health District. Dr Rungan is involved in setting up multidisciplinary school-based clinics and is the main researcher in this study.

3. Who can take part in the study?

You have been invited to take part in this study because of your involvement with school-based healthcare.

4. What will the study involve for me?

If you decide to take part in this study, you will be asked to be interviewed by Dr Rungan about your experiences relating to school-based health care. This process will involve:

- A face to face, videoconference or telephone interview
- The interview will be for approximately 1 hour
- The interview will be recorded and then transcribed
- You will be able to read the transcript and edit any of the information provided
- The transcripts will then be de-identified, meaning that any information that could identify you will be removed
- The de-identified document will then be analysed
- Once the analysis is completed you will be invited to attend a presentation about the overall findings
- Any published material about the study will also be available to you

5. Can I withdraw once I've started?

Being in this study is completely voluntary and you do not have to take part.

Your decision will not affect your current or future relationship with the researchers or anyone else at The University of Sydney or Sydney Local Health District.

If you decide to take part in the study and then change your mind you can withdraw by contacting a member of the research team.

If you take part in an interview you may refuse to answer any questions that you do not wish to answer.

6. Are there any risks or costs?

Possible risks may include, but are not limited to:

- Discomfort: participants may feel anxious when reflecting on their experiences and then discussing these
- Other than for your time, there are no costs associated with taking part in this study.

7. Are there any benefits?

As a professional involved with school-based health care, participating in this research will help improve how the health and education sector work together to ensure better outcomes for children, their families and the community.

8. What will happen to information that is collected?

By providing your consent, you are agreeing to us collecting information about you for the purposes of this study.

Any information you provide us will be stored securely and we will only disclose it with your permission, unless we are required by law to release information. We are planning for the study findings to be published.

You will not be individually identifiable in these publications.

Data will be de-identified before analysis occurs. This data will be stored electronically on a secure database. Your data will not be made available to any other organisations or institutes. Your data will not be used for any other purposes. After 5 years, this data will be permanently deleted.

9. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. This feedback will be in the form of a brief lay summary or you can attend a presentation about the results.

10. What if I would like further information?

When you have read this information, the following researcher/s will be available to discuss it with you further and answer any questions you may have:

- Dr Santuri Rungan SLHD-ComPaedsSchoolClinics@health.nsw.gov.au

11. What if I have a complaint or any concerns?

The ethical aspects of this study have been approved by the Human Research Ethics Committee (HREC) of The University of Sydney [INSERT HREC Approval No. once obtained] according to the *National Statement on Ethical Conduct in Human Research (2007).*

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the University:

Human Ethics Manager
human.ethics@sydney.edu.au
+61 2 8627 8176

This information sheet is for you to keep

Appendix B: Consent Form

Study about School-Based Health Care for Children Experiencing Problematic Externalising Behaviour

Dr Santuri Rungan (Responsible Researcher)
Faculty of Medical Research, University Of Sydney

Email:SLHD-ComPaedsSchoolClinics@health.nsw.gov.au

Participant Name ______________________________

I agree to take part in this research study. In giving my consent, I confirm that:

- The details of my involvement have been explained to me, and I have been provided with a written Participant Information Statement to keep.
- I understand the purpose of the study is to investigate my experiences with school-based healthcare including some of the benefits and challenges encountered.
- I acknowledge that the risks and benefits of participating in this study have been explained to me to my satisfaction.
- I understand that in this study I will be required to participate in an hour long interview (face to face, videoconference or telephone).
- I understand that my participation may be audio-taped and then de-identified.
- I understand that being in this study is completely voluntary.
- I am assured that my decision to participate will not have any impact on my relationship with the research team or the University of Sydney or Sydney Local Health District.
- I understand that I am free to withdraw from this study and that I can choose to withdraw any information I have already provided.

- I have been informed that the confidentiality of the information I provide will be protected and will only be used for purposes that I have agreed to. I understand that information about me will only be told to others with my permission, except as required by law.

- I understand that the results of this study may be published, and that publications will not contain my name or any identifiable information about me.

- I confirm the following:

I consent to recordings (audio)	Yes ☐	No ☐
I would like to review my interview transcripts	Yes ☐	No ☐
I consent to being contacted for future studies	Yes ☐	No ☐
I consent to my data being used in future research	Yes ☐	No ☐
I would like feedback on the overall results of this study	Yes ☐	No ☐

If you answered **yes**, please provide your preferred contact details (email/telephone/postal address):

- I understand that after I sign and return this consent form it will be retained by the researcher, and that I may request a copy at any time.

Participant Name

Signature

Date

Appendix C: Interview Guide

A) Set of guidelines to adhere to during the interviewing process

1. It is essential that I do not assume to understand the lived experience of my participants. It is important to remember that individuals are unique in their experiences, culture and biology.
2. It is imperative to remain impartial during interviews and allow both positive and negative responses to be given without interference.
3. Impartiality includes being aware of the direction interviews can take, and thus try as much as possible to adhere to the semi-structured questions.

B) Introduction to Participant

"Thank you for taking part in this research study. The study is about how the Ngaramadhi Space model of school-based health care has been implemented in different settings. Ngaramadhi Space is a multidisciplinary clinic, based at a specialist behavioural secondary school called Yudi Gunyi School. The model of care has been implemented in other schools. The aim of this study is to see what others have experienced with this type of approach including some of the benefits and challenges encountered. Taking part in this study is voluntary."

"This interview will be recorded. Are you okay with this?"
"After the interview, the recording will be transcribed. You will be able to read this afterwards and make any changes you like."

C) Semi-Structured Interviews

PHASE 2: Interviews with YGS/NS staff, community members, students and parents

1. *What has been your involvement in Yudi Gunyi School and Ngaramadhi Space?*
2. *What is your understanding of the Yudi Gunyi School/Ngaramadhi Space model?*
3. *What are the benefits and/or challenges of the Yudi Gunyi School/ Ngaramadhi Space model? What changes or developments have led to the current model?*
4. *What has been the experience of the students and families of Yudi Gunyi School?*

5. *What would you say are the critical or key elements of the model? OR What are the key/critical elements of a model such as this one?*
6. *How do you think these critical elements could be adopted or adapted for use in other school settings?*
7. *Why is it important for the health and education sector to work collaboratively?*
8. *What are the barriers and facilitators to partnerships between health and education?*
9. *What are some of the policy implications for successful partnerships between health and education?*

PHASE 3: Interviews with other SBHC staff and CoP

1. *What has been your involvement in the school-based healthcare program?*
2. *How would you describe the model of care?*
3. *What facilitated the establishment of the program e.g. key stakeholders, infrastructure, technology, serendipity?*
4. *What barriers did you come across when establishing the program e.g. impediments, change of direction?*
5. *How were barriers overcome?*
6. *What were your expectations when setting up the hub?*
7. *Have these expectations been met or not met? Why do you think this is the case?*
8. *Who accesses the clinic at the moment? Could anyone else access the clinic?*
9. *What have been the benefits of forming a multidisciplinary program?*
10. *What could be done better?*
11. *Overall, do you think that the school-based healthcare programs are worthwhile?*
12. *Do you think the school-based healthcare programs should be replicated in other settings?*
13. *What would be needed to replicate the model?*

D) Closing Statements

“Thank you for participating today. Your interview will be transcribed and I will send you a copy of this. Please make any changes you like to the transcript.”

Appendix D: Strengths and Difficulties Questionnaire

Strengths and Difficulties Questionnaire

P 11-17

For each item, please mark the box for Not True, Somewhat True or Certainly True. It would help us if you answered all items as best you can even if you are not absolutely certain. Please give your answers on the basis of your child's behaviour over the last six months.

Your child's name .... Male/Female

Date of birth..

	Not True	Somewhat True	Certainly True
Considerate of other people's feelings	☐	☐	☐
Restless, overactive, cannot stay still for long	☐	☐	☐
Often complains of headaches, stomach-aches or sickness	☐	☐	☐
Shares readily with other youth, for example CD's, games, food	☐	☐	☐
Often loses temper	☐	☐	☐
Would rather be alone than with other young people	☐	☐	☐
Generally well behaved, usually does what adults request	☐	☐	☐
Many worries or often seems worried	☐	☐	☐
Helpful if someone is hurt, upset or feeling ill	☐	☐	☐
Constantly fidgeting or squirming	☐	☐	☐
Has at least one good friend	☐	☐	☐
Often fights with other young people or bullies them	☐	☐	☐
Often unhappy, depressed or tearful	☐	☐	☐
Generally liked by other young people	☐	☐	☐
Easily distracted, concentration wanders	☐	☐	☐
Nervous in new situations, easily loses confidence	☐	☐	☐
Kind to younger children	☐	☐	☐
Often lies or cheats	☐	☐	☐
Picked on or bullied by other young people	☐	☐	☐
Often volunteers to help others (parents, teachers, children)	☐	☐	☐
Thinks things out before acting	☐	☐	☐
Steals from home, school or elsewhere	☐	☐	☐
Gets along better with adults than with other young people	☐	☐	☐
Many fears, easily scared	☐	☐	☐
Good attention span, sees chores or homework through to the end	☐	☐	☐

Do you have any other comments or concerns?

Please turn over - there are a few more questions on the other side

Overall, do you think that your child has difficulties in one or more of the following areas: emotions, concentration, behavior or being able to get on with other people?

No	Yes- minor difficulties	Yes- definite difficulties	Yes- severe difficulties
☐	☐	☐	☐

If you have answered "Yes", please answer the following questions about these difficulties:

- How long have these difficulties been present?

Less than a month	1-5 months	6-12 months	Over a year
☐	☐	☐	☐

- Do the difficulties upset or distress your child?

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

- Do the difficulties interfere with your child's everyday life in the following areas?

	Not at all	Only a little	Quite a lot	A great deal
HOME LIFE	☐	☐	☐	☐
FRIENDSHIPS	☐	☐	☐	☐
CLASSROOM LEARNING	☐	☐	☐	☐
LEISURE ACTIVITIES	☐	☐	☐	☐

- Do the difficulties put a burden on you or the family as a whole?

Not at all	Only a little	Quite a lot	A great deal
☐	☐	☐	☐

Signature .... Date ....

Mother/Father/Other (please specify:)

Thank you very much for your help

© Robert Goodman, 2005

Appendix E: STROBE Checklist

STROBE Statement—Checklist of items that should be included in reports of ***cohort studies***

	Item No	Recommendation	Page No
Title and abstract	1	(*a*) Indicate the study's design with a commonly used term in the title or the abstract	xvii–xix
		(*b*) Provide in the abstract an informative and balanced summary of what was done and what was found	xvii–xix
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	2
Objectives	3	State specific objectives, including any prespecified hypotheses	5
Methods			
Study design	4	Present key elements of study design early in the paper	91
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	91
Participants	6	(*a*) Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	92
		(*b*) For matched studies, give matching criteria and number of exposed and unexposed	n/a
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	92
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	94
Bias	9	Describe any efforts to address potential sources of bias	92
Study size	10	Explain how the study size was arrived at	86
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	n/a
Statistical methods	12	(*a*) Describe all statistical methods, including those used to control for confounding	94
		(*b*) Describe any methods used to examine subgroups and interactions	n/a
		(*c*) Explain how missing data were addressed	-
		(*d*) If applicable, explain how loss to follow-up was addressed	-
		(*e*) Describe any sensitivity analyses	n/a

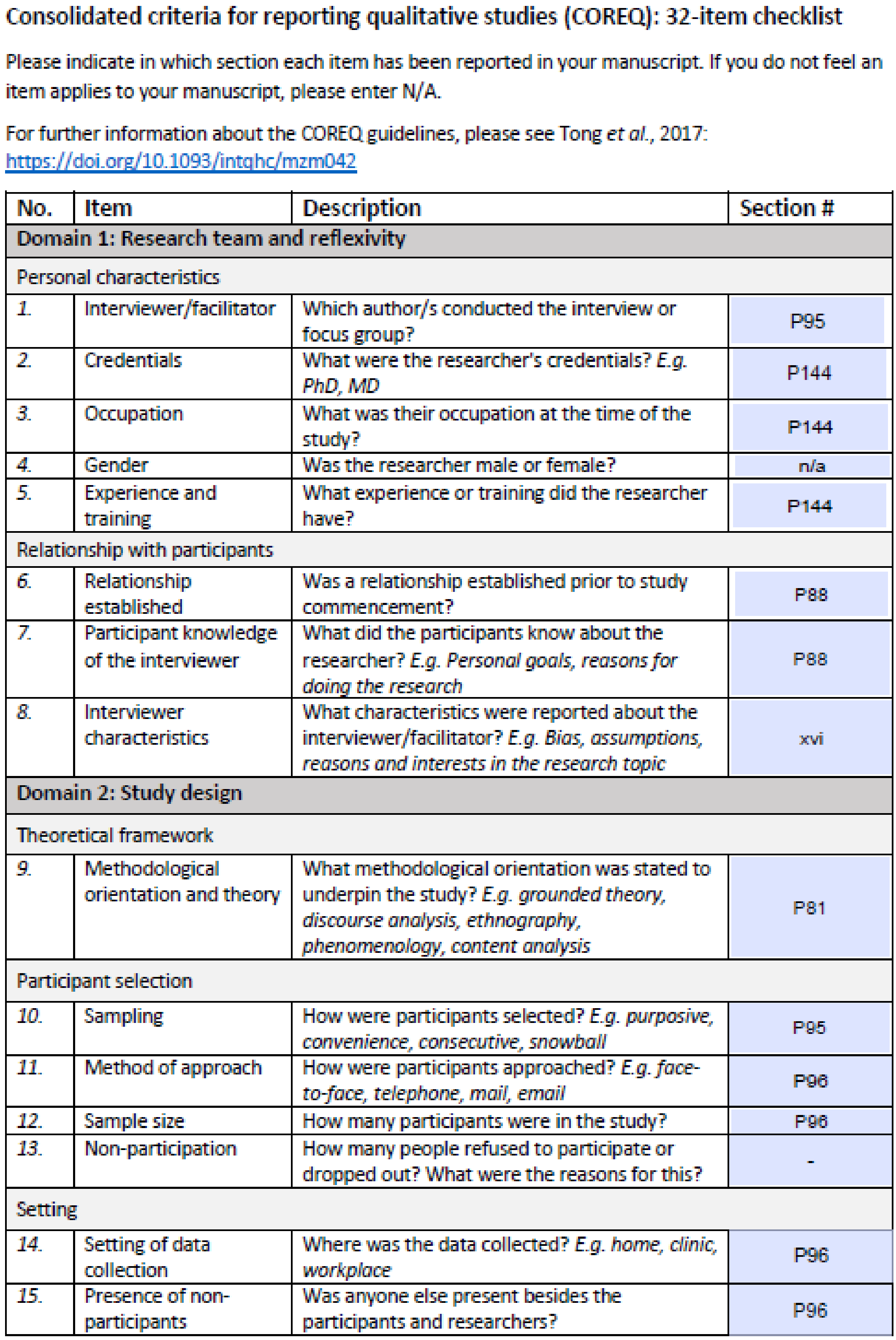
Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—e.g. numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	134
		(b) Give reasons for non-participation at each stage	-
		(c) Consider use of a flow diagram	-
Descriptive data	14*	(a) Give characteristics of study participants (e.g. demographic, clinical, social) and information on exposures and potential confounders	134
		(b) Indicate number of participants with missing data for each variable of interest	-
		(c) Summarise follow-up time (e.g., average and total amount)	136
Outcome data	15*	Report numbers of outcome events or summary measures over time	135–136

Main results	16	(*a*) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (e.g. 95% confidence interval). Make clear which confounders were adjusted for and why they were included	136
		(*b*) Report category boundaries when continuous variables were categorized	-
		(*c*) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	n/a
Other analyses	17	Report other analyses done—e.g. analyses of subgroups and interactions, and sensitivity analyses	n/a
Discussion			
Key results	18	Summarise key results with reference to study objectives	136
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	137
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	136–137
Generalisability	21	Discuss the generalisability (external validity) of the study results	137
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable, for the original study on which the present article is based	138

*Give information separately for exposed and unexposed groups.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the websites of PLoS Medicine at http://www.plosmedicine.org/, Annals of Internal Medicine at http://www.annals.org/, and Epidemiology at http://www.epidem.com/). Information on the STROBE Initiative is available at http://www.strobe-statement.org.

Appendix F: COREQ Checklist



Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist

Please indicate in which section each item has been reported in your manuscript. If you do not feel an item applies to your manuscript, please enter N/A.

For further information about the COREQ guidelines, please see Tong *et al.*, 2017: https://doi.org/10.1093/intqhc/mzm042

No.	Item	Description	Section #
Domain 1: Research team and reflexivity			
Personal characteristics			
1.	Interviewer/facilitator	Which author/s conducted the interview or focus group?	P95
2.	Credentials	What were the researcher's credentials? *E.g. PhD, MD*	P144
3.	Occupation	What was their occupation at the time of the study?	P144
4.	Gender	Was the researcher male or female?	n/a
5.	Experience and training	What experience or training did the researcher have?	P144
Relationship with participants			
6.	Relationship established	Was a relationship established prior to study commencement?	P88
7.	Participant knowledge of the interviewer	What did the participants know about the researcher? *E.g. Personal goals, reasons for doing the research*	P88
8.	Interviewer characteristics	What characteristics were reported about the interviewer/facilitator? *E.g. Bias, assumptions, reasons and interests in the research topic*	xvi
Domain 2: Study design			
Theoretical framework			
9.	Methodological orientation and theory	What methodological orientation was stated to underpin the study? *E.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis*	P81
Participant selection			
10.	Sampling	How were participants selected? *E.g. purposive, convenience, consecutive, snowball*	P95
11.	Method of approach	How were participants approached? *E.g. face-to-face, telephone, mail, email*	P96
12.	Sample size	How many participants were in the study?	P96
13.	Non-participation	How many people refused to participate or dropped out? What were the reasons for this?	-
Setting			
14.	Setting of data collection	Where was the data collected? *E.g. home, clinic, workplace*	P96
15.	Presence of non-participants	Was anyone else present besides the participants and researchers?	P96

16.	Description of sample	What are the important characteristics of the sample? *E.g. demographic data, date*	P95
Data collection			
17.	Interview guide	Were questions, prompts, guides provided by the authors? Was it pilot tested?	P96
18.	Repeat interviews	Were repeat interviews carried out? If yes, how many?	n/a
19.	Audio/visual recording	Did the research use audio or visual recording to collect the data?	P96
20.	Field notes	Were field notes made during and/or after the interview or focus group?	P96
21.	Duration	What was the duration of the interviews or focus group?	-
22.	Data saturation	Was data saturation discussed?	-
23.	Transcripts returned	Were transcripts returned to participants for comment and/or correction?	P97
Domain 3: analysis and findings			
Data analysis			
24.	Number of data coders	How many data coders coded the data?	P97
25.	Description of the coding tree	Did authors provide a description of the coding tree?	-
26.	Derivation of themes	Were themes identified in advance or derived from the data?	P82
27.	Software	What software, if applicable, was used to manage the data?	P97
28.	Participant checking	Did participants provide feedback on the findings?	-
Reporting			
29.	Quotations presented	Were participant quotations presented to illustrate the themes / findings? Was each quotation identified? *E.g. Participant number*	P145
30.	Data and findings consistent	Was there consistency between the data presented and the findings?	P150
31.	Clarity of major themes	Were major themes clearly presented in the findings?	P145
32.	Clarity of minor themes	Is there a description of diverse cases or discussion of minor themes?	P145

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If you would like this checklist to be included alongside your article, we ask that you upload the completed checklist to an online repository and include the guideline type, name of the repository, DOI and license in the *Data availability* section of your manuscript.

Developed from: Allison Tong, Peter Sainsbury, Jonathan Craig, Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups, International Journal for Quality in Health Care, Volume 19, Issue 6, December 2007, Pages 349–357, https://doi.org/10.1093/intqhc/mzm042