Implementing and Evaluating Contact Strategies to Reduce Stigma towards People living with Dementia

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Statement of Originality

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.

Cheuk Yue Wan

Authorship Attribution Statement

All chapters in this thesis are co-authored with my supervisors. The candidate is the primary intellectual contributor and lead author for all chapters. The candidate co-developed the original research ideas and study design under the expert guidance of my supervisors. The candidate solely conducted data collection and analysis, developed the intervention materials, and prepared the first full draft of each chapter. Supervisors also provided academic mentoring conceptual input, editorial feedback and review. Permission for inclusion of co-authored material in this thesis has been granted where required.

Chapter 2

Chapter 2 consists of my integrative review. Under the guidance of my supervisors, Professor White and Professor Naismith, the chapter was conceptualised. I drafted the original version and, together with my co-authors, revised and edited subsequent versions.

Chapter 3

Chapter 3 presents the first and second empirical study of this thesis. Under the guidance of my supervisor, Professor White and her colleague, Dr Steson Lo, the research questions were conceptualised and the studies were co-designed. I drafted the original version and contributed to the revision and editing of subsequent versions alongside my co-authors.

Chapter 4

Chapter 4 contains the third and fourth empirical study of this thesis. Under the guidance of my supervisor, Professor White and her colleague, Dr Steson Lo, the research questions were conceptualised and the studies were co-designed. I drafted the original version and revised and edited subsequent versions alongside my co-authors.

I confirm that this thesis is my own work. Where I have worked collaboratively with others, I have clearly indicated my contribution. I was responsible for the conceptualisation, data collection, analysis, and writing of the work presented in this thesis, under the supervision of Prof. White and Prof. Naismith. All sources have been acknowledged.

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Date: 07/09/2025

As supervisor for the candidature upon which this thesis is based, I can confirm that the authorship attribution statements above are correct.

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Artificial Intelligence

During the preparation of the thesis the author used ChatGPT for the purposes of text enhancement. The use of this generative AI tool includes paraphrasing, sentence structure, checking spelling across all chapters. The author confirms that where text was modified by generative AI, the content was reviewed for possible errors, inaccuracies, and bias. The author takes full responsibility for the submitted thesis and ensures the work is their own and has used generative AI within the parameters of use (refer to the University of Sydney generative AI guide for researchers).

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Abstract

Despite the global rise in dementia and its associated stigma, research on dementia stigma and its reduction remains limited. The objective of this PhD research programme is threefold: (1) propose a theoretical framework of dementia stigma manifestation to guide evaluation of current and future interventions, (2) identify key predictors of dementia stigma, and (3) design and evaluate innovative stigma-reduction interventions based on indirect contact. Integrating the Attribution Model, the Modified Labelling Theory, and cultural psychology, the thesis proposes a multi-level dynamic model shaped by cognitive, emotional, behavioural, and cultural pathways. To identify populations that hold higher dementia stigma, Study 1 ($N = 268$) and Study 2 ($N = 354$) examined perceiver and target predictors of dementia stigma using text- and video-based vignettes. Across both, Asian participants and those with lower contact quality with older people uniquely predicted higher dementia stigma on all domains of dementia stigma outcomes. Guided by this, interventions focused on indirect contact strategies. Study 3 ($N = 330$) used parasocial contact videos featuring culturally matched people living with dementia among Asian and Anglo-European participants. Results showed that parasocial contact elicited a mixed pattern of higher helping intentions alongside greater avoidance, with Asians reporting higher dementia stigma than Anglo-Europeans. Therefore, to specifically target Asians, Study 4 ($N = 312$) employed newly developed vicarious contact videos that are structured by Allport (1954)'s facilitating conditions focusing on Asians only. Vicarious contact significantly led to lower fear, anger, avoidance, and higher helping intentions, with reduced intergroup anxiety mediating these effects. Whilst vicarious contact did not result in lower dementia stigma-related attitudes directly or significantly, stigma-related attitudes improved indirectly through reduced intergroup anxiety. Overall, these findings highlight the practical importance of culturally sensitive contact-based interventions, particularly vicarious contact, to reduce dementia stigma.

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Chapter 1: Introduction

Stigma towards People living with Dementia and Interventions to Reduce it

I once read a short essay by a Hong Kong author who described her fear of developing dementia. After visiting a woman living with dementia, she wrote that she would rather die early than live “without dignity” or be remembered for her illness. A cultured and widely admired writer, she had long been recognised for her intellectual achievements. In her mind, the negative popular image of dementia stood in stark contrast to the self she valued. Her honest and unsettling reaction captures a common fear that dementia erases personhood and exposes one to shame. Such anticipated stigma can contribute to denial and delayed help-seeking when early changes appear (Werner et al., 2010). These worry and depressed mood can also lead to sleep disturbance which links to poorer quality of life and potentially worse outcomes (Alvaro et al., 2013; Meng et al., 2025).

Importantly, this account also illustrates that contact does not uniformly reduce stigma. Intergroup contact research shows that negative or distressing contact experiences may reinforce fear, anxiety, and avoidance, whereas positive, well-structured contact is more likely to reduce prejudice (Allport, 1954; Pettigrew & Tropp, 2006). This thesis begins from that tension and asks not simply whether contact reduces dementia stigma, but under what conditions it may do so, and when it may instead reinforce stigma. In doing so, it aims to examine how different forms and qualities of contact shape stigma and whether they can open a wider window for help, hope, and dignity for people living with dementia.

Dementia is an umbrella term for loss of memory and other cognitive abilities severe enough to interfere with daily life (World Health Organization, 2017). The most common

type of dementia is Alzheimer's disease (60-70%), followed by vascular dementia (15-30%), lewy body (around 5%), frontotemporal dementia (around 3%), and others. Among these subtypes, Alzheimer's disease is most prevalent, and advancing age is well established as its primary risk factor (van der Flier & Scheltens, 2005). As the older population is expected to grow from 9% in 2019 to 16% of the total population in 2050 (The United Nations, 2019), the corresponding rise in the number of people living with dementia is also predicted, with an estimated increase from 57.4 million cases globally in 2019 to 152.8 million cases in 2050 (Corner & Bond, 2004; Nichols et al., 2022). This rise, compounded by a lack of dementia-related psychology research (Herrmann et al., 2018), have resulted in an increase in associated problems for people living with dementia, including dementia stigma (Herrmann et al., 2018; Warren & Wynia, 2025; Werner et al., 2012; Werner & Kim, 2021).

Dementia stigma can be understood as a set of negative and often discriminatory beliefs that society have towards this neurological condition (Herrmann et al., 2018). Generally, three main types of stigma have been posited: (i) *public stigma* refers to the reaction that the general public has towards people with dementia, often characterised by negative stereotypes, prejudice, and discrimination'; (ii) *private stigma* refers to the internalisation of ideas and the reactions of those personally targeted by a stigma; (iii) *stigma by association* refers to the emotions and beliefs of those surrounding the stigmatised person, including family members and professionals (Brijnath & Low, 2025; Corrigan & Watson, 2002; Larson & Corrigan, 2008). All of these subtypes can potentially impact one another (Livingston & Boyd, 2010), where people living with dementia and/or their carers can internalise the public stigma which can then lead to private sigma. For example, internalised public dementia stigma can lead people living with dementia to feel shame, social rejection, and social isolation, and report: (i) lower self-esteem; (ii) decreased social support and network ties; (iii) altered family dynamics; (iv) diminished emotional well-being; (v)

decreased help-seeking behaviors; and (vi) increased vulnerability to illness (Burgener, Buckwalter, Perkhounkova, Liu, et al., 2015; Nguyen & Li, 2020). Due to this, people living with dementia are more likely to experience depressive symptoms than those with normal cognition (Snowden et al., 2015). Therefore, in order to improve the well-being of people living with dementia and/or their carers, it is critical to first attempt to reduce public dementia stigma, which in turn, may have flow-on effects to reducing private or self-stigma (Vogel et al., 2007, 2013).

Dementia Stigma

The term *stigma* was first coined by Goffman (1963) who described it as an attribute that is deeply discrediting, conveying a social identity that is devalued and negatively stereotyped (Crocker et al., 1998). Since then, the term has been applied to myriad social categories, such as groups defined by race, ethnicity, gender, sexual orientation, and physical and mental illness or disability, and has proliferated to encompass manifold constructs related to the perception and treatment of social groups, similar to use of the terms *prejudice* (Phelan et al., 2008). In the context of dementia, stigma can be understood as a social process in which individuals endorse negative ideas and assumption about people living with dementia, holds negative feelings toward people living with dementia because of negative stereotypes, and engage in discriminatory behaviours that treat a person living with dementia unfairly (Alzheimer's Disease International, 2024).

In the present thesis, the term *dementia stigma* is used in line with the social psychological literature (e.g., Kane et al., 2020; Liu et al., 2008; Low & Purwaningrum, 2020; Noguchi et al., 2025; Zhang & Cheng, 2020), while acknowledging that *dementia-related stigma* more explicitly reflects stigma as a socially constructed reaction to dementia rather

than an intrinsic property of the condition. Throughout the thesis, stigma is consistently conceptualised in this way.

In dementia, and often in earlier stages of cognitive impairment such as mild cognitive impairment (MCI), public portrays commonly invoke stereotypes of total and irrevocable loss, dependence, incompetence, hopelessness, and even an "erasure of the self" (Ballenger, 2017; Herrmann et al., 2018; Kontos, 2012). Because dementia is progressive and ultimately life-limiting, it is often socially framed as involving irreversible decline. In some contexts, this trajectory is interpreted as a loss of independence, reciprocity, and social contribution, which may contribute to perceptions of diminished social value (Epley & McCaghy, 1978). Importantly, it is not terminal status per se that reduces perceived value, but rather the social meanings attached to cognitive decline and dependency. Cognitive decline is further interpreted as a cue to unpredictability, limited reciprocity, and reduced capability for meaningful communication and activities (Dupuis et al., 2012; Harrison et al., 2019; Mitchell et al., 2013). These negative stereotypes directed towards people living with dementia elicit negative emotional responses in perceivers, such as fear, anger, and shame (Corrigan & Watson, 2002; Nguyen & Li, 2020). These emotions can in turn motivate discriminatory behaviours, including avoidance (Nguyen & Li, 2020; Werner, 2008). The cognitive, emotional, and behavioural mechanisms underlying dementia stigma are discussed in Chapter 2.

Current Interventions to Reduce Dementia Stigma

The focus of this thesis is to investigate effective dementia stigma reduction strategies. While there is currently a dearth of dementia stigma reduction research, among the limited evidence, contact interventions and education are found to be the two most effective intervention strategies for reducing dementia stigma (Bacsu et al., 2023). In the realm of

contact interventions, most of the studies adopted direct contact interventions which involves face-to-face interactions between the person living with dementia and a healthy person (Frausing & Anne, 2021). Direct contact interventions on dementia stigma can increase knowledge and prompt intentions to change attitudes and interactions, raise awareness, volunteer, support people with dementia, and seek further learning, indicating a plausible route to reducing dementia stigma (Baillie et al., 2015). Many interventions target college students and the general public (Bacsu et al., 2023). Examples of direct contact in the dementia stigma literature have included intergenerational art programs (Lokon et al., 2017), an intergenerational choir (Harris & Caporella, 2014, 2019), intergenerational ballet programs (Canning et al., 2020), intergenerational programs involving children visiting residential aged-care homes (Di Bona et al., 2019), and story-telling sessions involving people living with dementia (George et al., 2011). These interventions have been shown to improve participants' attitudes towards people living with dementia by fostering relationships, challenging negative stereotypes, and promoting shared goals (Bacsu et al., 2023).

It is important to note however, that direct contact is not always feasible, especially when physical and psychological barriers reduce opportunities for direct contact (White et al., 2021). Physical barriers arise when outgroups live in segregated contexts, when group ratios are highly imbalanced, or when the outgroup is largely invisible (White et al.). These conditions map onto dementia: many people living with dementia reside in aged-care facilities (segregation), are concentrated in older age cohorts (numerical imbalance), and cognitive symptoms are not always outwardly visible (invisibility) (Corner & Bond, 2004; Prince et al., 2015; Wiersma & Dupuis, 2010). It is important to distinguish between invisibility operating at the structural contact-access level and visibility operating at the evaluative reaction level. When dementia is diagnostically invisible (e.g., undisclosed or not outwardly recognisable), opportunities for meaningful intergroup contact are reduced,

limiting exposure to counter-stereotypical information and thereby sustaining stigma. In this sense, invisibility constrains stigma reduction rather than directly increasing negative reactions. As for psychological barrier, high intergroup anxiety can further deter contact (Pettigrew & Tropp, 2008). Indirect contact can reduce these barriers, yet indirect contact interventions have received relatively little attention as potential interventions to reduce dementia stigma (White et al.).

There are different types of indirect contact strategies. First, extended contact refers to knowing that an ingroup member has a close relationship with an outgroup member, which can lead to more positive outgroup attitudes (Wright et al., 1997). To the best of our knowledge, no study has explicitly examined extended contact as a dementia stigma reduction intervention. The second type of indirect contact is parasocial contact, which means indirect and one-sided contact with an outgroup member through media (Schiappa et al., 2005). In the dementia stigma context, Cheng et al. (2011) used text-based vignettes describing a person living with dementia, with or without an explicit diagnostic label, to examine whether such parasocial exposure would influence participants' attitudes, compared with a condition without vignette exposure. Thirdly, vicarious contact refers to observing positive interactions between an ingroup member and an outgroup member (Mazziotta et al., 2011). In the dementia stigma context, Reynolds et al. (2017) evaluated a community orchestra project in which people living with dementia performed alongside students and community members front of the public. Fourth, research-based drama, a non-conventional approach, which uses scripted, evidence-informed performances to foster perspective-taking by reframing dementia from a tragedy narrative to one that also recognises functional competence and capacities, highlighting both losses and gains (Mitchell, Dupuis, & Jonas-Simpson, 2011). This approach has been developed across a line of studies, including productions by Dupuis et al., (2016) and Kontos et al. (2020).

Importantly contact interventions vary substantially in structure and are often not standardised, which may contribute to inconsistent effects. In response to this variability, the present research was informed by Allport (1954)'s Contact Hypothesis, which specifies four optimal conditions under which intergroup contact is most likely to reduce prejudice: equal status between groups within the contact situation, common goals, cooperative interaction, and support from authorities or social norms. Contact studies incorporating these principles have demonstrated more consistent prejudice-reduction effects (e.g., R. Chen et al., 2024; Pettigrew & Tropp, 2006). However, the application of these conditions within dementia-related contact interventions has been uneven and underexplored. These boundary conditions are therefore examined further in Chapter 2 and Chapter 4.

Another common intervention to reduce dementia stigma has been education-based interventions with a primary goal to dispel dementia myths and replace dementia stigma with facts (Bacsu et al., 2022). A scoping review by Matsumoto et al. (2023) showed that there are two main types of education, with or without contact element. For the education without contact element, typical examples are giving a lecture (Sabat, 2012) and e-learning (Peisah et al., 2016) with dementia knowledge as a key outcome variable. It is found that whilst improved dementia knowledge can improve attitudes towards people living with dementia (Friedman et al., 2016; Phillipson et al., 2019), it may also have the reverse effect. For example, Kim et al. (2022) found that people who have a better understanding of dementia also report higher levels of cognitive dementia stigma, which refers specifically to belief-based or attitudinal components of stigma (e.g., stereotypes and evaluative judgments), as distinguished from emotional (e.g., fear, anger) and behavioural (e.g., avoidance, helping intentions) components within the multidimensional stigma framework.

To overcome this potential shortcoming, education programmes also combine a contact element (Matsumoto et al., 2023). Students engaged in contact-based education

reported significantly better dementia knowledge and more positive attitudes than those exposed only to educational materials or controls (Kimzey et al., 2016). Another example of contact-based education is service-learning. Participation in service-learning has been found to increase students' comfort, confidence, empathy, knowledge, and attitudes toward people living with dementia via sustained, structured contact (Fruhauf et al., 2004; Yamashita et al., 2013). Chapter 2 will further evaluate how these interventions can address the cognitive, emotional, and behavioural mechanisms underlying dementia stigma, and Chapter 3 will demonstrate the impact of dementia knowledge on attitudes towards people living with dementia.

Clarifying the Predictors of Dementia Stigma

Another research objective of this thesis is to clarify the predictors of dementia stigma, a foundation step to maximise the impact of future interventions (Herrmann et al., 2018). Prior studies have shown that higher levels of dementia stigma are associated with limited contact with people living with dementia (Nguyen & Li, 2020), and are more prevalent among individuals from Asian, Hispanic, or African American backgrounds compared to Anglo-European populations (Herrmann et al., 2018). Stigma also tends to be higher among men (Kim et al., 2022) and older adults (Cheng et al., 2011). Building on these findings, Chapter 3 empirically tests a range of perceiver and target predictors, including dementia knowledge, contact quality with older adults or people living with dementia, gender, membership status (student vs. community member), and cultural background, as well as the characteristics of the target described in the stimulus. The chapter also examines how different media formats (text-based vs. video-based portrayals) of a person living with dementia may elicit distinct cognitive, emotional, and behavioural responses. These analyses provide the empirical foundation for identifying modifiable predictors of stigma and informing the design of targeted, evidence-based interventions in later chapters.

Among these factors, contact is known to reduce prejudice through mechanisms such as reduced anxiety, increased empathy, and greater perceived familiarity (Pettigrew & Tropp, 2008). Prior work shows that limited personal contact with people living with dementia is associated with higher stigma (Nguyen & Li, 2020), whereas positive and meaningful contact can humanise dementia and reduce fear (Bacsu et al., 2023). In this thesis, I prioritise contact quality over quantity because the valence of contact experiences is more predictive of attitude change than the mere frequency of encounters (Pettigrew & Tropp, 2006). I also examine contact with older people as well as with people living with dementia to test a secondary transfer effect, which means whether high-quality contact with a related group (secondary group) generalises to more positive attitudes towards people living with dementia (primary group)(Pettigrew, 2009).

Consistent evidence indicates that dementia stigma is higher among individuals from non-English-speaking cultural backgrounds compared with Anglo-European groups (Herrmann et al., 2018; Kim et al., 2022; Low et al., 2010). In this thesis, culture is treated as a core determinant because it shapes how dementia is labelled and how ageing with cognitive decline is considered as dignified in certain cultural contexts. These value frames help explain why negative stereotypes take root and why shame and anxiety are aroused. Chapter 2 reviews relevant cultural value frameworks (e.g., labelling of dementia, views of ageing with dignity) and their implications for attitudes toward dementia. Chapter 3 shows that participants with an Asian background report higher dementia stigma than their Anglo European counterparts. Chapter 4 extends this line of inquiry by designing and testing a targeted intervention for Asian participants, with its effects reported and discussed in relation to culturally tailored stigma-reduction strategies.

Designing Evidence-Based Indirect Contact Strategies to Reduce Dementia Stigma

While education and direct contact dominate current dementia stigma interventions, physical and psychological barriers often limit their reach (White et al., 2021). Indirect contact enables individuals to learn about, observe, or symbolically interact with members of stigmatised groups through mediated forms such as stories, videos, or observed interactions, and has been shown in other intergroup contexts to reduce prejudice by enhancing empathy and lowering intergroup anxiety (Banas et al., 2020). Chapter 4 therefore aims to develop and evaluate evidence-based indirect contact interventions for reducing dementia stigma. This chapter presents two complementary studies that test how different types of indirect contact influence attitudes, emotions, and behavioural intentions toward people living with dementia. Study 3 investigates parasocial contact, in which participants engage in one-sided, media-based exposure to a person living with dementia (Schiappa et al., 2005). Study 4 extends this inquiry by testing a vicarious contact intervention structured around Allport's (1954) facilitating conditions for Asian participants. Study 4 also presents whether reduced intergroup anxiety and increased outgroup empathy are mediators between vicarious contact and dementia stigma. Ultimately, these studies aim to test whether indirect contact can shift the public gaze from fear and shame towards understanding and respect. By allowing people to see the person beyond the diagnosis, such interventions may begin to open a window for help, hope, and dignity for those living with dementia.

While the present studies employ established methodological approaches, including indirect contact interventions and vignette-based designs, their contribution lies in the theory-driven integration, operationalisation, and comparative testing of these approaches rather than in proposing an entirely new contact method. Specifically, this thesis extends dementia stigma research by systematically embedding Allport's (1954) Contact Hypothesis within indirect, narrative-mediated formats, and by examining how theoretically motivated

variations in contact quality, such as media modality, cooperative versus mere-exposure structure, positivity of interaction, and exposure duration, influence stigma-related outcomes. To our knowledge, prior research has not simultaneously operationalised multiple contact conditions in this way or examined these mechanism-relevant variations within a unified framework. In addition, the thesis investigates these processes across cultural worldviews within a shared Australian context, allowing cultural interpretations to be examined while holding broader environmental conditions relatively constant. Together, these contributions aim to refine and specify contact-based stigma reduction theory in the context of dementia.

Research Aims

The present thesis aims to examine dementia stigma from a theory-driven perspective by addressing the following objectives:

- to examine the multidimensional structure of dementia stigma across cognitive, emotional, and behavioural components;
- to test whether contact-based and mediated-contact exposure is associated with variation in stigma outcomes under controlled conditions;
- to evaluate whether theoretically relevant variables, including outgroup empathy and intergroup anxiety, function as statistical mediators between mediated exposure and stigma responses;
- to assess whether cultural background is associated with differences in stigma responses within a shared macro-environmental context.

Overview of Thesis Chapters

This thesis is organised into five chapters. The thesis progresses from theoretical synthesis (Chapter 2) to empirical examination of stigma mechanisms (Chapter 3), followed

by the development and testing of intervention strategies (Chapter 4), culminating in an integrative discussion (Chapter 5).

Chapter 2: Understanding the Underlying Mechanisms of Dementia Stigma and Dementia Stigma Reduction Interventions: An Integrative Review

Chapter 2 provides an integrative review of the cognitive, emotional, and behavioural mechanisms underlying dementia stigma. It critically examines existing stigma reduction interventions, with particular attention to how these approaches address (or fail to address) key mechanisms such as stereotyping, intergroup anxiety, and empathy. A cultural lens is applied to highlight how stigma processes and intervention effectiveness may vary across sociocultural contexts. This chapter establishes the theoretical foundation for the empirical studies that follow.

Chapter 3: Study 1 and Study 2 – Clarifying the Predictors of Dementia Stigma using both Text-based and Video-based Vignettes

Chapter 3 presents two empirical studies that examine predictors of dementia stigma using both text-based and video-based vignette methodologies. Study 1 focuses on identifying key cognitive and emotional predictors of stigma, while Study 2 extends this by incorporating video-based stimuli to enhance ecological validity. Together, these studies clarify the mechanisms through which stigma is formed and provide an empirical basis for the development of intervention strategies tested in later chapters.

Chapter 4: Study 3 and 4 – Breaking down the Barriers of Dementia Stigma via Parasocial and Vicarious Contact

Chapter 4 presents two experimental studies that develop and evaluate indirect contact interventions aimed at reducing dementia stigma. Study 3 investigates parasocial contact through narrative-based video exposure, while Study 4 examines a vicarious contact

intervention structured around Allport's (1954) facilitating conditions. In addition, Study 4 explores intergroup anxiety and outgroup empathy as potential mediators of stigma reduction. This chapter contributes to understanding how theoretically informed variations in contact-based interventions influence stigma outcomes.

Chapter 5: General Discussion: Summary, Limitations, Future Directions and Conclusion

Chapter 5 synthesises the findings from the integrative review and the four empirical studies. It discusses the theoretical contributions of the thesis, particularly in refining contact-based approaches to dementia stigma reduction and identifying boundary conditions. Practical implications, study limitations, and directions for future research are also outlined, followed by a concluding summary of the thesis.

CHAPTER 2

Understanding the Underlying Mechanisms of Dementia Stigma and Dementia Stigma Reduction Interventions: An Integrative Review

With advances in healthcare systems and medical technology in recent decades, the global population is ageing. As a result, a corresponding rise in the number of people living with dementia is projected. This represents a global challenge, as the number of dementia cases is expected to grow exponentially (Nichols et al., 2022). This increase, compounded by a lack of dementia-related psychological research (Herrmann et al., 2018), has led to a growth in associated challenges for people living with dementia, including dementia stigma. Dementia stigma can be understood as a set of negative and often discriminatory beliefs that society holds towards this neurological condition (Herrmann et al., 2018). These beliefs often frame dementia as a state of total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017). Such negative stereotypes contribute to widespread societal reactions that result in a range of harmful outcomes for both those living with dementia and their caregivers (Vogel et al., 2013). These outcomes include (i) lower self-esteem; (ii) decreased social support and network ties; (iii) altered family dynamics; (iv) diminished emotional well-being; (v) decreased help-seeking behaviors; and (vi) increased vulnerability to illness (Burgener, Buckwalter, Perkhounkova, Liu, et al., 2015).

However, intervention research on reducing dementia stigma remains an emerging field limited by the absence of a robust quality assessment framework for evaluating intervention effectiveness (Bacsu et al., 2022). To advance the current literature, this integrative review aims to develop a conceptual model of dementia stigma by examining its

underlying psychological mechanisms. This model is intended to guide and inform future dementia stigma reduction intervention research. Given that dementia stigma is not experienced uniformly across populations, but is shaped by cultural beliefs, values, and social norms (Herrmann et al., 2018), we also situate our discussion within a broader cultural context. By incorporating a cross-cultural lens, we aim to highlight how cultural variations may influence both the expression of dementia stigma and the effectiveness of corresponding reduction interventions.

Conceptual Models of Dementia Stigma

Although stigma can be conceptualised across multiple forms, including public stigma (attitudes and reactions held by members of the public), self-stigma (internalised stigma among people living with dementia), and associative stigma (stigma experienced by family members and caregivers) (Corrigan & Watson, 2002; Larson & Corrigan, 2008), the primary focus of the present chapter is public stigma. The mechanisms discussed below therefore refer specifically to cognitive, emotional, and behavioural processes operating within the public perspective. While constructs such as shame may play a central role in self-stigma and associative stigma, the empirical studies in this thesis are designed to examine public stigma responses. The conceptual framework in this chapter is therefore structured around public stigma processes unless otherwise specified.

Conceptual models provide a critical foundation for understanding how stigma towards people living with dementia or MCI manifests, by offering testable frameworks that clarify the underlying psychological processes, identify key influencing factors, and support the development of targeted interventions. However, a systematic review conducted by Werner (2014) found that 73% of the 48 studies on dementia stigma did not employ a conceptual model, instead examining only isolated components of the phenomenon. Among

the 27% of studies that did adopt a conceptual model, most drew on either Attribution Theory (Corrigan et al., 2003) or Modified Labelling Theory (Link et al., 1989), indicating that these represent the dominant theoretical approaches in the field.

Both frameworks were carefully considered in the present thesis. Attribution Theory emphasises causal explanations between cognitive attributions, emotional reactions, and behavioural reactions to stigmatised individuals, whereas Modified Labelling Theory frames stigma as a socially constructed phenomenon rooted in power relations between the stigmatiser and the stigmatised. It highlights the role of social labels, language, cultural narratives, and institutional practices in reinforcing stigma and shaping the lived experiences of those affected (Werner, 2014).

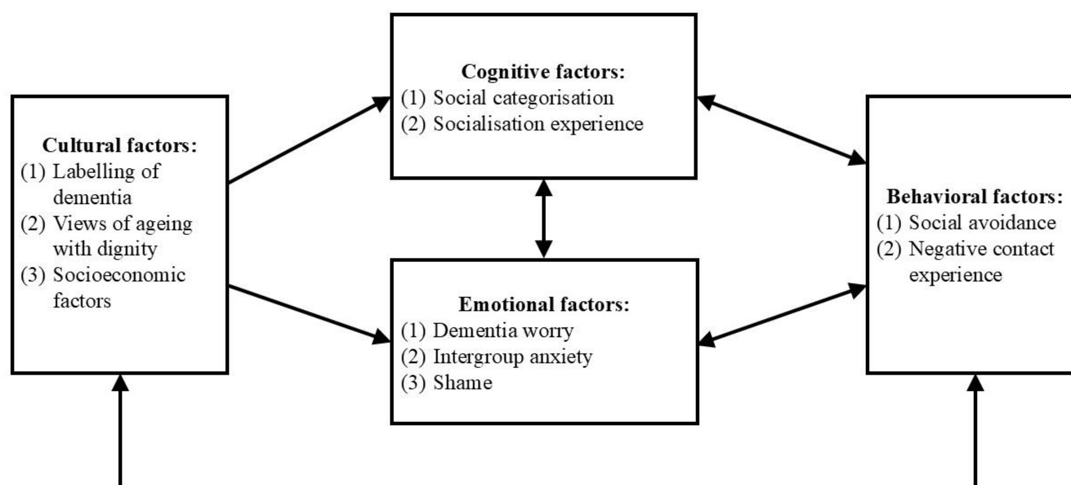
While both theories offer valuable insights, each alone is limited in fully capturing the complexity of stigma towards people living with dementia or MCI. Attribution Theory provides a useful lens for understanding individual-level psychological processes, such as how people's beliefs about the controllability of dementia influence their emotional and behavioural responses, but pays relatively little attention to broader socio-cultural and structural factors. Conversely, Modified Labelling Theory foregrounds the social construction of stigma and the role of systemic power dynamics, but offers limited explanatory power for understanding how stigma is enacted at the individual level. Given that dementia stigma operates across both interpersonal and broader societal levels, a more comprehensive framework that integrates these perspectives is needed. Moreover, as dementia stigma is an emerging research area that increasingly affects people from diverse cultural backgrounds (Nichols et al., 2022), there is a need for a conceptual model that is viable in order to develop more comprehensive, culturally sensitive interventions that address stigma across diverse populations.

Accordingly, while insights from both frameworks are incorporated, Attribution Theory is retained as the primary organising framework in this thesis due to its strong alignment with the individual-level processes, outcome domains, and intervention mechanisms examined in the empirical studies.

Building on insights from Attribution Theory and Modified Labelling Theory, the proposed dementia stigma framework comprises cognitive, emotional, behavioural, and cultural components that interact dynamically (see Figure 1). Consistent with Attribution Theory, cognitive interpretations of a person's condition give rise to emotional responses such as fear and anger, which in turn shape behavioural tendencies, including helping and avoidance. Extending this structure, the present model incorporates cultural meaning as a key component, proposing that culturally embedded beliefs about illness influence cognitive appraisals of dementia, which subsequently shape emotional and behavioural responses.

Figure 1

Conceptual Model of How Dementia Stigma Manifests across Cognitive, Emotional, Behavioural, and Cultural Dimensions



Note. Socioeconomic factors are included within the cultural domain as they shape exposure, knowledge, and meaning-making related to dementia.

Cognitive Mechanisms Underpinning Stigma towards People living with Dementia

A medical diagnosis of dementia can position individuals within a distinct medical-social category in the perception of others (Bosco et al., 2019). On one hand, framing dementia as a biomedical condition can initiate research efforts of understanding the condition and promote timely access to care (Ballenger, 2017; Saragosa et al., 2024). This perspective can reduce blame and foster supportive attitudes by highlighting underlying neuropathology rather than personal responsibility (Milne, 2010; Wan & White, 2022). On the other hand, medicalisation of dementia can lead to dehumanisation by prioritising objective diagnoses over patient's individuality and subjective experiences (Haslam, 2006; Kitwood, 1997). A narrow disease-focused framing may exacerbate stigma by depersonalisation and highlighting incapability, potentially increasing fear and social distance (Behuniak, 2011; Brijnath & Low, 2025; Low & Purwaningrum, 2020). People living with dementia who are being labelled as "ill" may be perceived by others as a threat or source of discomfort, which can evoke emotional distress and lead to social withdrawal among those around them (Burgener, Buckwalter, Perkhounkova, Liu, et al., 2015).

Research shows that dementia is more frequently depicted in negative rather than positive terms, often portraying people with dementia as passive victims and neglecting their subjective experiences and personal agency (Brookes et al., 2017; Low & Purwaningrum, 2020). Although socialisation processes originate within broader socio-cultural environments, these socialisation processes operate at a cognitive level in stigma formation, as repeated exposure to culturally patterned narratives contributes to the internalisation of schemas, stereotypes, and attributional beliefs about people living with dementia (Dovidio et al., 2019). Media portrayals of people living with dementia can shape our cognitive understanding, and the language used in media representations can also reinforce dementia stigma. For instance, metaphors such as "reverse childhood" or "zombie" frame people living with dementia in

dehumanising and infantilising ways, evoking fear and disgust (Johnstone, 2016). Over time, such portrayals contribute to a broader stereotype that associates dementia with helplessness and dependence, ultimately shaping public perceptions and reinforcing cognitive bias against those living with the condition.

Emotional Mechanisms Underpinning Stigma towards People living with Dementia

A systematic review of dementia stigma done by Nguyen and Li (2020) identified numerous emotional reactions towards people living with dementia. These include anxiety, shame, disgust, pity, sympathy, and empathy. Amongst these emotions, fear is the most frequent emotional reaction (Nguyen & Li, 2020). Two distinct fear mechanisms have been identified. The first one is self-focused anxiety about developing dementia, known as dementia worry. Dementia worry refers to an emotional reaction to the perceived threat of developing dementia, especially when individuals associate the condition with negative consequences for their lives (Kessler et al., 2012). When individuals view dementia as a symbol of irreversible health decline and impending mortality, stigma can function as a defensive coping mechanism, allowing people to psychologically distance themselves from that possibility (Hirschberger, 2006). Supporting this idea, negative attitudes towards unhealthy older adults, a group likely to include those with dementia, are stronger among older adults who perceive themselves as less healthy, possibly because mortality cues are more salient for them (Shimizu et al., 2023).

The second fear mechanism is others-focused intergroup anxiety. Intergroup anxiety refers to the discomfort people experience when anticipating or imagining interacting with outgroup members, driven by fear of negative psychological or behavioural consequences, as well as potential negative evaluations by others (Stephan & Stephan, 1985). In the context of dementia, this anxiety can be heightened by negative stereotypes, which shape expectations

about how people living with dementia will behave towards you (Baumgartner, 2017). Although research by Bousfield & Hutchison (2010) specifically examined attitudes towards general older people, they found that the relationship between contact quality and attitudes or behavioural intentions was fully mediated by intergroup anxiety. This finding underscores the central role of intergroup anxiety in shaping responses related to dementia stigma, suggesting that similar processes may operate in attitudes towards people living with dementia.

In addition to fear, shame is another frequently reported emotional response associated with dementia stigma (Nguyen & Li, 2020). The shame resides with the loss of control or a sense of self (Aldridge et al., 2019). This emotion of shame is intensified by the fear of socially deviant or unpredictable behaviours that may be exhibited by people living with dementia, which can provoke discomfort and reinforce negative stereotypes (Pin et al., 2009).

Other than negative emotions, more positive or neutral emotional reactions such as pity, sympathy, and empathy towards people living with dementia were identified (Nguyen & Li, 2020). For example, pity has been shown to decrease social avoidance towards people living with dementia (Werner & Giveon, 2008). Additionally, people living with dementia can evoke more sympathy, less blame, and greater willingness to help (Wadley & Haley, 2001). Empathy, in particular, is considered one of the most essential abilities for caregivers and professionals working with people living with dementia (Han, 2020). Higher levels of empathy are associated with less distress and more positive attitudes towards people living with dementia (Narme, 2018).

Behavioural Mechanisms Underpinning Stigma towards People living with Dementia

Based on the Attribution Model (Corrigan et al., 2003), cognitive appraisal and emotional reactions subsequently lead to behavioural outcomes. In the context of dementia,

when dementia is pathologised and is described negatively (Low & Purwaningrum, 2020), negative emotional responses such as fear and/or shame are evoked (Nguyen & Li, 2020). To manage these negative emotions, others may engage in discriminatory behaviours such as avoidance towards people living with dementia as a way to reduce their perceived threat (Nguyen & Li, 2020; Werner, 2008).

While behavioural reactions are considered the final outcome in the Attribution Model, our model extends this framework by incorporating a feedback loop. Specifically, we argue that discriminatory behaviours contribute to creating a culture that reinforces negative cognitive stereotypes and emotional reactions, thereby sustaining stigma over time. This recursive relationship aligns with a broader social-cognitive perspective that acknowledges the dynamic and self-reinforcing nature of stigma processes across both individual and community levels (Pescosolido & Martin, 2015).

Two behavioural mechanisms highlight this recursive process. First, lack of contact and/or avoidance contributes to stigma by preventing individuals from encountering people living with dementia in ways that could challenge existing negative stereotypes. Research shows that people who do not know someone with dementia exhibit higher discriminatory behaviours than those who do (Kim, Anstey, et al., 2022). In the absence of positive contact with people living with dementia, negative stereotypes remain unchallenged, and fear-based or shame-based responses may persist or even intensify.

Second, poor contact quality with people living with dementia can exacerbate stigma. Negative portrayals of dementia in the media often shape individuals' expectations, leading them to anticipate that interactions with people living with dementia will be difficult and/or unpleasant (Alzheimer's Disease International, 2019; Low & Purwaningrum, 2020). As a result, when direct contact does occur, especially under involuntary or uncomfortable

circumstances, it is more likely to be experienced negatively (Pettigrew & Tropp, 2011). These negative experiences can reinforce existing cognitive stereotypes, such as the belief that people with dementia are non-cooperative (Schäfer et al., 2022). In contrast, positive and meaningful interactions have been shown to reduce emotional responses such as shame and foster more accepting attitudes towards people living with dementia (Aldridge et al., 2019).

Cultural Comparisons in Stigma towards People living with Dementia: A Western and East Asian Perspective

While dementia stigma research primarily stems from Western populations (Herrmann et al., 2018), findings may not apply universally, especially when the rising dementia cases are growing globally (Nichols et al., 2022). In this thesis, the terms "Asian," "East Asian," and nationality-specific labels (e.g., Chinese) are used with contextual precision rather than interchangeably. Where broader theoretical frameworks are discussed, the term "East Asian cultural contexts" is used to reflect shared historical and philosophical influences (e.g., Confucian traditions), while acknowledging substantial within-group heterogeneity. When referring to empirical findings, population descriptors follow the terminology used in the original studies (e.g., Chinese, Asian American). Importantly, these groupings are not treated as homogeneous, and factors such as acculturation, migration history, language use, and generational status are recognised as important but not directly measured in the present research.

Moreover, references to Confucian values and East Asian cultural frameworks are used as a contextual interpretive lens to explain how stigma-related meanings and social expectations may be structured within certain cultural traditions. This framing is not intended to imply uniform value endorsement across individuals or subgroups. Cultural influence is understood as dynamic and variable, and may differ across generations, migration histories,

acculturation levels, and social environments, including diaspora contexts and exposure to individualistic societies. Accordingly, cultural concepts are applied at a theoretical framework level rather than assumed as fixed individual-level traits.

As dementia becomes a global public health concern, understanding how cultural frameworks shape stigma is increasingly important. Cultural beliefs influence not only how dementia is interpreted but also the meanings attached to cognitive decline and ageing. For instance, in some Asian cultures, dementia is viewed not merely as a medical condition but as a moral or spiritual failing, such as a curse or punishment from a higher power, resulting in even stronger stigmatisation and social exclusion (Alzheimer's Disease International, 2024; Liu et al., 2008). This cultural framing of dementia can also exacerbate the negative attitudes towards people living with dementia (Low et al., 2010).

As suggested in the Modified Labelling Theory (Link et al., 1989), language plays a critical role in shaping public perceptions of dementia. However, the impact of terminology lies not merely in the label itself, but in the socially constructed meanings, stereotypes, and emotional associations attached to that label (Phelan et al., 2008). The English term *dementia*, derived from Latin, translates to "no mind", a phrase that can be seen as dehumanising and potentially intensifying stigma against people living with dementia. In the Chinese language, the traditional label of dementia is commonly known as "Lao Ren Chi Dai Zheng (老人癡呆症)", translates to "older people's insane and idiotic disorder", a term widely criticised for being inaccurate and deeply stigmatising (Chiu et al., 2014; Liu et al., 2008). The literal meanings embedded in phrases such as "no mind" and "idiotic" carry cognitive schemas of incompetence, irrationality, and diminished humanity, which in turn help construct and stabilise broader social representations of cognitive impairment. In this sense, labels function

as symbolic vehicles through which culturally patterned meanings are transmitted and reinforced.

While dementia is considered as shameful across both Anglo-European and Asian cultures, the intensity and underlying causes of stigma differ due to culturally specific beliefs about dignity and ageing. In Western social contexts, dignity is often viewed as intrinsic, granted by virtue of one's status as a human being or creature of God, and thus remains intact even as cognitive decline progresses (Koehn & Leung, 2008; Liu et al., 2008). Within this framework, the process of ageing with dignity emphasises personal autonomy, independence, and self-reliance as key indicators of a "successful" later life (Heggestad et al., 2015; Hsu, 1983). Parenting norms reflect these Western values where children are encouraged to become independent from their parents, and older adults are expected to maintain their autonomy in later life (Rothbaum & Xu, 1995). As a result, older individuals who become dependent on their children for support may feel that they are violating these cultural expectations, leading to feelings of shame, failure, or loneliness (de Jong Gierveld et al., 2012). Dementia, by gradually stripping away cognitive and functional autonomy, can severely threaten this ideal of independence. The loss of independence may lead to feelings of inadequacy, helplessness, and diminished dignity, particularly in settings where self-sufficiency is equated with personal value and social inclusion (Burgener, Buckwalter, Perkhounkova, Liu, et al., 2015).

In contrast, many East Asian cultures which are influenced by Confucian values, conceptualise dignity as relational, something that must be acquired and maintained through proper conduct within family and social hierarchies (Koehn & Leung, 2008). In this Asian context, ageing with dignity is closely tied to fulfilling one's familial roles and responsibilities, particularly within interdependent parent-child relationships (Fu et al., 2008; Rothbaum & Xu, 1995). Older adults are expected to serve as wise, guiding figures,

upholding family harmony and offering support to younger generations. Dementia, however, disrupts this relational ideal by impairing the individual's ability to fulfill these socially expected roles, potentially undermining their parental authority and respect within the family (Kinnison, 2017). This can lead to feelings of shame and loss of dignity, prompting some Asian families to conceal the diagnosis to avoid social embarrassment (Liu et al., 2008). In this context, stigma is not merely about the illness itself but also about the perceived violation of social and moral expectations tied to ageing.

Importantly, references to Confucian and relational value frameworks in this thesis are intended to describe historically influential cultural scripts rather than fixed or universally endorsed behavioural determinants. Contemporary East Asian and diaspora populations are internally diverse, and endorsement of relational norms may vary by generation, migration experience, socioeconomic conditions, education, and exposure to individualistic social environments. The literature suggests that structural factors (e.g., age segregation, caregiving burden, limited gerontological education, migration-related separation from older family members) and shifting socio-political contexts also contribute to stigma formation (Herrmann et al., 2018; Luo et al., 2013). Thus, Confucian-influenced relational dignity is conceptualised here as a contextual meaning system that may shape stigma-related interpretations, rather than as a deterministic explanation of individual attitudes or behaviours.

An additional nuance concerns relational proximity. In many Confucian-influenced contexts, moral obligation and protection norms are strongest within the family or close relational networks (Fu et al., 2008). As such, stigma responses may differ depending on whether the person living with dementia is perceived as an ingroup member (e.g., a parent or close relative) or as a more socially distant outgroup member (e.g., a stranger). Within close family relationships, dementia may evoke protective responses shaped by filial responsibility and relational duty (Liu et al., 2008). In contrast, when the person is socially distant,

evaluative judgments may be guided more strongly by broader cultural stereotypes about ageing and competence (Cuddy & Fiske, 2002). This relational boundary distinction highlights that cultural differences in stigma cannot be reduced to simple group-level comparisons (e.g., “Asian” versus “Western”) but may vary according to perceived social distance and relational positioning.

In addition to the cultural meaning of ageing, structural and socioeconomic factors may also play a significant role in the heightened dementia stigma observed among Chinese populations in the United States and Australia (Herrmann et al., 2018; Low et al., 2010). Within the present framework, these factors are conceptualised as part of the broader socio-cultural context that shapes normative environments, intergenerational contact patterns, and meaning systems surrounding ageing and cognitive decline, rather than as isolated demographic descriptors. Luo et al. (2013) identified several socio-political conditions in China that may contribute to this stigma including extensive age segregation (socially, geographically, and intellectually), the absence of gerontological education in school curricula, the heavy caregiving burden faced by the one-child generational family, and limited government support for elder care. Together, these cultural and socio-economic factors have fostered an aged-stratified society, where intergenerational interactions are limited. The reduced contact between age groups is associated with greater prejudice (Binder et al., 2009), which may amplify both ageist and dementia-related attitudes among younger generation.

In summary, the underlying mechanism of dementia stigma can be understood across cognitive, emotional, behavioural, and cultural dimensions. These interconnected processes shape how stigma is formed and reinforced. The proposed conceptual model depicted in Figure 1 can offer an integrated theoretical framework to guide future dementia research and design dementia reduction interventions.

Dementia Stigma Reduction Interventions

Despite the growing recognition of the issue, research on stigma-reduction interventions remains limited. Several scholars have noted that such studies are far outnumbered by those documenting the existence of dementia stigma (Bacsu et al., 2022; Herrmann et al., 2018; Matsumoto et al., 2023; Nguyen & Li, 2020). Moreover, many intervention studies lack attention to the underlying cognitive and emotional mechanisms of stigma, and fewer assess behavioural outcomes. Existing efforts primarily fall into two categories: contact-based interventions and educational interventions (Bacsu et al., 2022; Kim et al., 2021).

Contact-Based Intervention: Direct versus Indirect Strategies

As discussed previously, a key outcome of dementia stigma is social avoidance, which reduces opportunities for meaningful contact with people living with dementia and allows negative stereotypes to remain unchallenged. Media portrayals often reinforce this cycle by presenting dementia in a negative light, shaping public expectations that interactions will be difficult and/or distressing (Alzheimer's Disease International, 2019; Low & Purwaningrum, 2020). To counter this, creating positive contact experiences is a powerful way forward because research has consistently shown that the quality of contact is more effective than the quantity in reducing stigma (Bacsu et al., 2022).

Creating positive direct contact can be difficult to implement in reality because of strong fears towards the outgroup members or physical distance with the outgroup members (White et al., 2021). To address these barriers, researchers have proposed several *indirect* contact strategies such as vicarious contact (Vezzali et al., 2014), parasocial or media contact (Schiappa et al., 2005), E-contact (White et al., 2020) and virtual reality (VR) contact (Adefila et al., 2016) to reduce prejudice towards outgroup members. Based on the discussed

evaluation aspect, we will evaluate how these contact strategies can be used to reduce dementia stigma across cognitive, emotional, behavioural, and cultural aspects.

Direct and Indirect Contact Effects on the Cognitive Dimension of Stigma. Direct contact can reduce dementia stigma by reshaping cognitive representations of people living with dementia. Contact interventions structured following Allport (1954)'s four facilitating conditions for positive intergroup contact, which are (i) *equal status*, (ii) *common goal*, (iii) *cooperation*, and (iv) *authority support*, were found to be significantly effective to reduce outgroup prejudice by increasing the mutual understanding between the ingroup and outgroup members (Pettigrew & Tropp, 2006). When people living with dementia are treated as equals and work cooperatively toward shared goals under supportive authority, it challenges existing biases that portray them as incapable or burdensome. While these conditions were not specifically tested or controlled in the intervention studies reviewed by Bacsu et al. (2022), the design of some interventions may have met these conditions and achieved positive results. For example, the arts-based interventions (e.g., ballet dancing and choir participation) created by Harris and Caporella (2014) and Lokon et al. (2017) recruited college students and people living with dementia as volunteers (*equal status*) to participate in the same activity together (*common goal* and *cooperation*) guided by the researcher's team (*authority support*). The participants in these studies reported more positive attitudes, comfort, and engagement towards people living with dementia and recognise their abilities after participating in the interventions. Through such structured interactions, cognitive perceptions shift from viewing dementia as solely a decline to appreciating the person beyond the diagnosis.

Similar to direct contact strategies, indirect contact such as watching videos featuring people living with dementia can help audiences appreciate their abilities and uniqueness. For example, observing people living with dementia playing in an orchestra alongside community members has been found to challenge stereotypes of low competence (Reynolds et al., 2017).

Vicarious contact research suggests that witnessing positive interactions between ingroup and outgroup members can increase perceptions of similarity, though this mediating effect remains untested in the context of dementia stigma (Vezzali et al., 2014). Another intervention approach, research-based drama, has been found to promote perspective-taking by reframing dementia from a narrative of tragedy to one that recognises the functional and competent aspects of people living with dementia, highlighting both losses and gains (Mitchell, Dupuis, Jonas-Simpson, et al., 2011). Together, these indirect contact methods foster more balanced and positive cognitive understandings of people living with dementia.

Direct and Indirect Contact Effects on the Emotional Dimension of Stigma. Because negative stereotypes can cause people to experience anxiety during interactions with outgroup (Stephan & Stephan, 1985), identifying strategies to reduce this anxiety can in turn reduce stigma and prejudice. In fact, Pettigrew and Tropp's (2008) meta-analysis of 515 contact studies, highlighted that reducing intergroup anxiety is a critical mediator of the contact-stigma reduction relationship, and this is also found to be true for dementia stigma. For example, college students participating in intergenerational choirs with people living with dementia have been found to report less social discomfort and reduce stigma over eight weeks of rehearsal (Harris & Caporella, 2014). Another study done by Canning et al. (2020) recruited children aged from seven to nine to participate in a dance programme with fifteen people living with dementia on a weekly basis for six months. The participants reported that they learned to appreciate the capabilities of people living with dementia and they built meaningful relationships with them. The participants also reported reduced fear and anxiety towards people living with dementia.

Paradoxically, intergroup anxiety itself can also be an obstacle for engaging in a positive direct contact, thus researchers have developed indirect contact strategies, especially when outgroups are stereotyped as threatening (White et al., 2021). Due to the distal nature of

indirect contact, individuals are able to engage with the outgroup with a greater degree of control over some of the psychological (e.g., anxiety) consequences. Reynolds et al. (2017) found that observing public performances of orchestra comprising people living with dementia and community members, audiences reported positive emotions towards people living with dementia. Research-based drama is another form of indirect contact intervention. The research-based drama created by Dupuis et al. (2016), which portrayed the lived experiences of people living with dementia, provided audiences an opportunity to witness the representations of suffering and reflect on their own understanding of it. The drama illustrated that suffering is not solely the result of the disease, but is also shaped by other's misunderstanding and actions. Audience engagement with the drama prompted personal reflection and led to increased comfort and willingness to interact with people living with dementia.

In addition to reducing anxiety, increasing outgroup empathy is also an effective emotional pathway for reducing stigma, because empathetic concern can foster a sense of power equality and reduces social distance (Boleyn-Fitzgerald, 2003; Corrigan, 2017). Whilst cross-sectional studies have found that knowing someone living with dementia is associated with increased empathy and lower dementia stigma (Cheng et al., 2011; Werner, 2005), experimental research examining whether direct contact strategies can increase empathy and subsequently reduce dementia stigma is lacking.

Research has found a relationship between increasing empathy via indirect contact. Adefila et al. (2016) implemented 15 minutes of virtual reality (VR) contact allowing participants to experience the simulated life of people living with dementia and found that it increased their empathy. Similarly, vicarious contact strategies, such as videos and research-based dramas, have been used effectively to have audiences place themselves in shoes of people living with dementia in order to increase the audiences' levels of empathy (Burns et al.,

2018). By being immersed into scenes highlighting the experiences of people living with dementia, audiences have the opportunity to feel complete humanness for people living with dementia (Mitchell, Dupuis, Jonas-Simpson, et al., 2011).

Direct and Indirect Contact Effects on the Behavioural Dimension of Stigma. Most contact-based interventions aimed at reducing dementia stigma have primarily focused on changing attitudes, rather than targeting actual discriminatory behaviour (Bacsu et al., 2022). While some studies include behavioural outcomes, they often conceptualise dementia stigma as a unified construct combining cognitive, affective, and behavioural components (e.g., Cheng et al., 2011). This limits our ability to disentangle how changes in attitudes or emotions translate into behavioural change. Although some interventions report increased willingness to help people living with dementia (e.g., Dupuis et al., 2016; Jonas-Simpson et al., 2012; Wadley & Haley, 2001), actual behaviours are rarely measured.

Cultural Considerations Involving Contact and Dementia Stigma Reduction. The effectiveness of dementia stigma reduction interventions depends on the cultural context. Westerners view human dignity as innate, rooted in religious and rationalist traditions that emphasise autonomy and competence (Koehn & Leung, 2008). As such, competence-restoring interventions, which showcase the capabilities of people living with dementia, may resonate particularly well with Western audiences. For example, intergenerational choirs aim to challenge stereotypes by demonstrating that people with dementia can meaningfully engage in musical performance (Bacsu et al., 2022). Similarly, an orchestra-based indirect contact intervention reduced stigma by highlighting the positive societal contributions of people living with dementia (Reynolds et al., 2017). This aligns with cross-cultural findings showing that Westerners tend to prioritise self-enhancement and self-improvement when forming relationships (Wan & Yeung, 2022), making competence-based messages especially persuasive.

In contrast, traditional Chinese views of dignity emphasise relational harmony and fulfilling one's role within the family or society (Koehn & Leung, 2008). Dignity is not inherent but earned through proper behaviour, especially within kinship roles. Thus, interventions tailored to Chinese cultural values tend to focus on relational and familial themes. One study found that a culturally adapted video emphasising filial piety and daily caregiving interactions improved attitudes towards people living with dementia (Zheng et al., 2016). The concluding message, "As long as there is love, dementia is not hopeless", reinforced this cultural ideal.

Education-Based Intervention and Dementia Stigma Reduction

Another common intervention to reducing dementia stigma is education. Education-based approaches challenge myths and misconceptions by providing factual information that raise awareness (Bacsu et al., 2022). However, education-based interventions vary widely in content and structure, lacking a standardised curriculum (Herrmann et al., 2019). A key concern is that these interventions evaluate success primarily through gains in dementia knowledge, rather than measuring changes in attitudes or stigma-related behaviours, and it remains unclear whether increases in dementia knowledge translate to effective stigma reduction.

Education-Based Interventions (Without Contact) to Reduce Dementia Stigma. Education-based interventions that focus solely on disseminating dementia knowledge, such as lectures or fact sheets, offer a straightforward method for raising awareness but yield mixed outcomes depending on the target population. For example, lectures have been shown to significantly improve attitudes among adolescents and children (e.g., Gibson et al., 2018), yet they appear to be largely ineffective for adult audiences (e.g., Robertshaw & Kotera, 2020). One possible explanation is that younger individuals may hold fewer entrenched

beliefs and are more open to updating their attitudes when exposed to new information, whereas adults may have more fixed stereotypes and socialised understandings that are resistant to change through factual input alone. For adults, while increasing dementia knowledge can help dispel myths and reduce fear (Phillipson et al., 2019), factual information alone is often insufficient to change attitudes meaningfully (Luty et al., 2007). In some cases, providing lists of dementia-related symptoms or negative outcomes may inadvertently reinforce stigma. For example, highlighting only the deficits associated with dementia may strengthen negative stereotypes and exacerbate perceived social distance between people with and without dementia. Indeed, individuals with greater knowledge about dementia have been found to exhibit higher levels of cognitive stigma and perceive dementia as a greater threat (Kim, Anstey, et al., 2022). When education lacks guidance on how to build cooperative relationships with people living with dementia, it may unintentionally reinforce an "us versus them" dynamic rather than promoting inclusion.

Another form of education-based intervention goes beyond simply presenting dementia facts and instead incorporates multiple domains related to the daily lives of people living with dementia. For example, Herrmann et al. (2019) designed an education program that included dementia knowledge, the impact of stigma, strategies to evaluate stigma, and practical tips for addressing it using real-life scenarios. Participants who received this multi-faceted intervention reported greater supportiveness and fewer intentions to engage in discriminatory behaviour toward people living with dementia. This approach appears more effective than basic education-only interventions, as it allows participants to consider the lived experiences of people with dementia in a broader, more humanised context. Such exposure may also help participants perceive greater similarity between themselves and people living with dementia, which is known to reduce stigma.

Contact-Based Education Approaches to Reducing Dementia Stigma. Education-based programs that incorporate contact elements combine the benefits of both knowledge dissemination and intergroup interaction. Empirical research shows that students who participated in contact-based education reported significantly higher dementia knowledge and more positive attitudes toward people living with dementia compared to those who only received educational materials or were in a control group (Kimzey et al., 2016). These contact elements can be indirect. For instance, in one study, participants who viewed video as well as receiving dementia education, improved in knowledge but showed no significant change in attitudes towards dementia (Kim et al., 2021).

Cultural Considerations of Education Strategies. Educational messages should be tailored to align with the cultural values and social norms of the intended audience because perceptions of ageing differ across cultures. For example, in Western societies, where autonomy and independence are highly valued, older adults living with dementia may view receiving care from their adult children as shameful or indicative of personal failure (de Jong Gierveld et al., 2012). In this context, education curriculums should focus on how older adults strive in the society on their own, without relying on their children. In contrast, Chinese cultural contexts perceive dignity as embedded within reciprocal intergenerational relationships (Koehn & Leung, 2008), and consequently it is customary for older parents to live with, and/or be cared for, by their children, a practice associated with higher subjective well-being, reduced loneliness, and lower social isolation (F. Chen & Short, 2008). Within such cultural contexts, educational interventions should ideally address how to navigate changes in family dynamics following a dementia diagnosis. For example, when a parent is diagnosed, they may no longer occupy the same authoritative role within the family, requiring both the individual and their relatives to adapt to evolving identities and relationship patterns.

Culture not only shapes emotional responses but also influences how individuals cognitively understand dementia. In traditional Chinese culture, morality is closely tied to fulfilling one's social roles and behaving properly within relationships, especially within the family (Koehn & Leung, 2008). Within this moral framework, behavioural symptoms of dementia such as emotional outbursts, agitation, or passivity may be interpreted not merely as medical symptoms, but as a failure to uphold expected kinship roles. Supporting this interpretation, a cross-cultural study by Calia et al. (2019) found that while American and British participants emphasised cognitive decline when describing dementia, Chinese participants additionally focused on behavioural aspects, using descriptors such as "slow," "emotional," and "agitated." This suggests that Chinese cultural perceptions of dementia incorporate behavioural deviations as threats to moral order within the family. Therefore, interventions addressing dementia stigma in Chinese populations should include culturally embedded messages that acknowledge not only cognitive decline but also the perceived social and behavioural consequences of dementia within familial contexts.

Another important cultural consideration is the accessibility and quality of dementia education materials in different languages. Research shows that dementia-related information found on simplified Chinese websites is more likely to be commercial in nature and less likely to meet established quality standards, compared to English-language dementia information websites (Tsiang & Woo, 2017). In addition, information access pathways differ across cultural contexts. For instance, people living in China often gain knowledge about dementia through personal experiences within their families, whereas individuals in Australia, particularly younger adults, typically have greater access to reliable dementia information through formal education and public resources (Zhao et al., 2021). These disparities highlight the need for dementia stigma interventions that are culturally relevant and address both language barriers and variations in information access.

Considerations for Future Dementia Stigma Reduction Research

While most dementia stigma interventions focus on changing individual attitudes, few measure actual behavioural outcomes or consider how societal structures maintain discrimination. Even with improved attitudes, unchanged policy or cultural systems may continue to marginalise people living with dementia. For instance, aged care in Australia has historically received low policy priority, potentially reinforcing the perception of older adults as a burden (Royal Commission into Aged Care Quality and Safety, 2021). Such systemic neglect can perpetuate the belief that older people are a strain on the national economy, thereby exacerbating public stigma. As such, researchers should also consider systemic strategies, such as collective action, as a supporting mechanism to complement individual-level interventions in reducing dementia stigma.

Most of the studies included in this integrative review focus on individuals with mild and/or moderate cognitive impairment (e.g., those who are able to participate in a community choir), while few of the studies involved people living with dementia who need higher levels of support, or those already exhibiting cognitive impairment but do not yet dementia criteria, such as those with Mild Cognitive Impairment. This remains a significant gap in the dementia stigma research and a greater acknowledgement of the heterogeneous lived experience of people with dementia, across the entire functional spectrum, requires urgent research attention.

Although this review considered cultural norms and values, it is important to acknowledge that some of the observed differences, particularly among East Asian populations, may be more closely tied to migrant status than to their culture per se. It is important for future research to acknowledge that East Asian immigrants living in Western countries often face unique socioeconomic stressors and systemic barriers that may

compound experiences of stigma in ways that differ from their non-migrant counterparts (Luo et al., 2013). The intersection of culture and migration must be more clearly disentangled in stigma research. Future studies should examine how cultural beliefs interact with factors such as socioeconomic status, healthcare access, and community support, especially among immigrant populations, so that interventions can be tailored accordingly. Another way to disentangle this complicated relationship is to have more dementia stigma intervention research focusing on populations from culturally diverse backgrounds.

Building upon this integrative review, a conceptual dementia stigma model was proposed that accounts for both individual attitudes and society as a whole. This model identifies testable mechanisms through which stigma can be challenged via cognitive, emotional, and behavioural pathways. Practitioners can use this model to inform intervention design, drawing on Allport's (1954) four facilitating conditions and embedding culturally responsive strategies. For example, educational efforts should incorporate both negative and positive portrayals of people living with dementia and offer concrete, culturally appropriate guidance for building meaningful, equitable relationships.

Conclusion

This integrative review critically evaluated key stigma theories, namely the Attribution Theory and the Modified Labelling Theory, and their relevance to understanding dementia stigma. Drawing from these models, we proposed that dementia stigma operates through cognitive, emotional, behavioural, and cultural dimensions. The dominant medical framing of dementia, along with negative media portrayal of people living dementia, can heighten perceived threat, evoke intergroup anxiety, reduce empathy, and hinder meaningful contact with people living with dementia. Moreover, cultural values such as beliefs about

dignity, familial obligations, and preferred living arrangements further shape how stigma is interpreted and manifested across cultures.

By integrating theoretical and cultural perspectives, we presented a comprehensive framework to guide more nuanced and culturally competent interventions. Using this model, we reviewed how interventions can effectively target the cognitive, emotional, and behavioural mechanisms of dementia stigma. Although emerging evidence suggests that contact-based and educational interventions can be effective under certain conditions, dementia stigma reduction research is still in its early stages. It is crucial that such strategies are tailored to the cultural context to ensure their relevance and impact, fostering effective reductions in dementia stigma and positive societal change by equipping people living with dementia, and their allies, with a much-needed voice for change.

CHAPTER 3

Study 1 and Study 2: Clarifying the Predictors of Dementia Stigma using both Text-based and Video-based Vignettes

Dementia is a condition involving cognitive decline that is significantly more prevalent among older adults (Plassman et al., 2007). The number of people living with dementia is expected to rise to 152.8 million cases by 2050 (Nichols et al., 2022), and this increase is expected to exacerbate the negative impacts of dementia stigma (Herrmann et al., 2018). Dementia stigma refers to the negative beliefs and discriminatory behaviours directed towards people living with this neurological condition (Herrmann et al., 2018). Dementia stigma can be fear-driven, as it is associated with loss of autonomy, competence, and personhood, making people more likely to distance themselves from people living with dementia (Nguyen & Li, 2020). The consequences for people living with dementia are profound, including feelings of shame, social rejection, social isolation, lower self-esteem, decreased help-seeking behaviours and network ties, and diminished emotional well-being (Burgener et al., 2015). Because evidence-based stigma reduction interventions are limited, it is essential to first identify reliable predictors for profiling high-dementia-stigma populations to better inform and maximise the impact of future interventions (Herrmann et al., 2018).

Stigma is a complex social process shaped by interrelated, systemic factors that operate dynamically across individual, interpersonal, and structural levels (Pescosolido et al., 2008). In the context of this thesis, stigma is understood as arising from interactions between those who hold stigmatizing views (i.e., members of the public; hereafter referred to as "perceivers" in line with social psychological terminology) and those who are subject to these views (i.e., people living with dementia; hereafter referred to as "targets"). While person-

centred language is used throughout, the terms "perceiver" and "target" are retained where necessary to reflect established conceptual frameworks in social psychology that distinguish between the direction of evaluation and the object of stigma.

Previous studies on dementia stigma predictors have largely focused on perceiver characteristics. For example, higher dementia stigma have been associated with lower familiarity with the people living with dementia (Nguyen & Li, 2020), being from Asian, Hispanic, or African American backgrounds compared to Anglo-European populations (Herrmann et al., 2018), men (Kim, Anstey, et al., 2022), and older individuals (Cheng et al., 2011). In contrast, target characteristics have received relatively limited empirical attention, despite their established importance in other stigma domains. For example, in mental health contexts, individuals described as male rather than female are more likely to be perceived as dangerous and stigmatised (Schnittker, 2000), those depicted with severe symptoms tend to elicit stronger stigmatising responses than those with mild symptoms (Pescosolido et al., 2008), and younger individuals with depression has been shown to elicit greater stigma compared to older individuals (Werner & Segel-Karpas, 2020). In the dementia stigma context, limited evidence suggests a similar pattern: younger individuals living with dementia are perceived more negatively and less positively than older individuals (Werner et al., 2020).

To address this gap, the present research examines the impact of both perceiver and target characteristics on dementia stigma by systematically manipulating target characteristics using text-based vignettes (Study 1) and video-based vignettes (Study 2).

Operationalising Dementia Stigma across Three Domains

Drawing on Attribution Theory (Corrigan & Watson, 2003), dementia stigma is conceptualised as a process in which attitudes (e.g., stereotypes) give rise to emotional responses (e.g., prejudice), which in turn shape behavioural outcomes (e.g., discrimination).

Building on this model, dementia stigma was assessed across three domains: attitudinal, emotional, and behavioural. In dementia stigma research, attitudes often manifest as generalised beliefs about the capabilities, worth, or social acceptability of people living with dementia (Low & Purwaningrum, 2020). In contrast, emotional responses are more dynamic and context-dependent (Cuddy et al., 2007), varying according to situational cues and target characteristics (Timmons et al., 2024).

The three-domain framework presented in Figure 1 (Chapter 2, p. 17) is conceptual in nature and reflects broad categories of stigma processes rather than one-to-one measurement variables. This conceptual-operational mapping is summarised in Table 1. In the empirical studies, these domains were operationalised using measurable indicators at the individual response level. Specifically, the cognitive domain was represented by general dementia-related attitudes; the emotional domain was assessed through two theoretically central emotions, fear and anger; and the behavioural domain was captured using two proximal behavioural intention indicators, avoidance and helping intentions. Using multiple indicators within the emotional and behavioural domains allows for a more fine-grained examination of stigma processes while remaining aligned with the overarching framework.

Consistent with attribution-based stigma models, the present research focused specifically on fear and anger as key emotional indicators. According to the personal responsibility and dangerousness model (Corrigan et al., 2002), fear is associated with increased avoidance whereas anger is linked to reduced helping intentions. These emotions represent core mediators within the attribution-emotion-behaviour pathway and have been consistently identified as strong predictors of distancing and discriminatory behavioural responses. In the context of dementia stigma, both fear and anger have been identified as common negative emotions which contribute to avoidance behaviours, reducing helping intentions, and intensified social exclusion (Nguyen & Li, 2020).

Table 1

Conceptual-Operational Mapping of Stigma Domains

Conceptual Stigma Domain	Conceptual Drivers (Review Chapter)	Operational Indicators (Empirical Studies)	Rationale
Cognitive	Social categorisation, socialisation processes	Dementia stigma attitudes scale	Proximal measurable belief indicator
Emotional	Intergroup emotional responses (e.g., fear, anger, anxiety)	Fear, Anger subscales	Core attribution-based mediators with established links to behavioural outcomes
Behavioural	Social avoidance, contact intentions	Avoidance intentions, Helping intention	Immediate stimulus-responsive behavioural proxies

Although other emotions such as pity have also been reported in dementia stigma research, they were not included in the present study. Pity is more commonly associated with ambivalent or benevolent response patterns and does not demonstrate a consistent pathway to avoidance or discriminatory behaviour (Corrigan, 2017). Given that the present studies focus on behavioural outcomes such as avoidance and helping intentions, fear and anger were prioritised as the most theoretically and behaviourally relevant emotional indicators. These behavioural responses illustrate how stigma directly affects the opportunities and well-being of people living with dementia (Corrigan et al., 2003).

Beyond the emotional indicators examined in the present study, other constructs discussed in the literature, such as dementia-related shame and dementia worry, were not included in the empirical models. Dementia worry reflects self-directed concern about one’s own cognitive decline rather than stigma directed toward others (Cutler & Hodgson, 2001; Kinzer & Suhr, 2016), and is therefore conceptually distinct from the interpersonal stigma processes examined in this research. In contrast, although shame may play a role in dementia

stigma, it is highly culturally contingent and lacks consistently validated measures suitable for use across culturally diverse samples. Accordingly, these constructs were not included in the present studies.

Perceiver Characteristics as Predictors of Dementia Stigma

(i) Contact Quality with People living with Dementia and Older People

Meta-analyses show that positive contact, when structured under Allport's optimal conditions, can effectively reduce prejudice (Pettigrew & Tropp, 2006). Therefore, high-quality contact with people living with dementia may be an important characteristic in people who show less dementia stigma. However, direct contact with people living with dementia is often limited due to the relative invisibility of the condition, generational separation, and stigma-related reluctance to disclose a diagnosis (Kohl et al., 2025). Given that dementia predominantly affects older adults (Plassman et al., 2007), contact with people living with dementia may overlap with contact with older people more broadly. To disentangle these effects, contact quality with older adults was also measured and controlled for in the present studies. Accordingly, it is hypothesised that higher quality contact with people living with dementia will be associated with lower levels of dementia stigma, above and beyond contact with older adults more generally.

(ii) Dementia Knowledge

Previous research found that people with limited dementia knowledge often report higher levels of dementia stigma, likely due to underlying fear-based stereotypes (Herrmann et al., 2018). Some individuals may incorrectly believe that dementia is contagious and further stigmatise the condition (Low & Purwaningrum, 2020). Research has shown that public education to increase dementia knowledge can help dispel myths, reduce stigma, promote social inclusion, and decrease discriminatory behavioural intentions towards people

living with dementia (Kim, Anstey, et al., 2022). Accordingly, it is hypothesised that higher levels of dementia knowledge will be associated with lower levels of dementia stigma across cognitive, emotional, and behavioural domains.

(iii) Cultural Background

According to Social Identity Theory (Tajfel & Turner, 1979), individuals adopt the norms, values, and behaviours of their identified social groups. If an ingroup perceives ageing and cognitive decline negatively, its members are more likely to stigmatise the outgroup. Cultural identity, in particular, has been found to play a significant role in dementia stigma. For example, studies have found that individuals from an Asian background report more stigmatising attitudes than those from an Anglo-European background (Herrmann et al., 2018; Kim et al., 2022; Low et al., 2010). This may stem from beliefs associating dementia with mental illness, shame, or contagion (Low & Purwaningrum, 2020). Additionally, Chinese-language dementia resources have been found to offer less effective health information compared to English-language materials (Tsiang & Woo, 2017). Accordingly, it is hypothesised that participants from Asian cultural backgrounds will report higher levels of dementia stigma compared to those from Anglo-European backgrounds.

(iv) Gender

Research consistently shows that men report higher dementia stigma than women (Herrmann et al., 2018; Kim et al., 2022; Werner & Kim, 2021), often attributed to women's caregiving roles, greater empathy (Howick et al., 2017), and more frequent contact with people living with dementia (Dao & Woo, 2014). Dementia is commonly stereotyped as high in warmth but low in competence (Fiske, 2018). Importantly, these stereotype dimensions overlap with traits culturally associated with femininity, such as communion and collectivism, whereas masculinity is more strongly associated with competence, agency, and individualism

(Abele & Wojciszke, 2007). These gender-role expectations may shape how dementia is interpreted when attributed to male versus female targets, potentially contributing to gender differences in stigma. Accordingly, it is hypothesised that male participants will report higher levels of dementia stigma compared to female participants.

(v) University Student vs. Community Membership Status

Studies involving university student samples who are typically younger and more educated consistently show lower levels of dementia stigma (Cowan, 2021; Henry, 2008; Werner et al., 2020). This may reflect the liberal university climate, where stigma and prejudice are salient issues, and students tend to adopt more progressive attitudes over time (Sears et al., 2008). In contrast, older individuals are more likely to report stigmatising attitudes towards people living with dementia (Herrmann et al., 2018; Kim et al., 2022; Werner et al., 2020), partly due to cognitive inflexibility in adjusting their attitudes (Gonsalkorale et al., 2009). Accordingly, it is hypothesised that university students will report lower levels of dementia stigma compared to community members.

Based on the above review, we hypothesise more dementia stigma among individuals with lower contact quality with people living with dementia or older people, lower dementia knowledge, those from an Asian than Anglo-European cultural background, males compared to females, and community member compared to student samples (*H1*).

Target Characteristics as Predictors of Dementia Stigma

(i) Target's Health Status

While previous dementia stigma research has focused on perceiver characteristics, the role of target characteristics remains underexplored. As an invisible stigma, dementia status is not immediately recognisable; perceivers tend to endorse stigmatising responses based on the target's behaviour and disclosure of their dementia diagnosis (Kohl et al., 2025; Pescosolido

et al., 2008). Once labelled, people living with dementia tend to elicit stronger negative emotional reactions and greater stigma than those without the label (O'Connor et al., 2018; Schultner et al., 2024). According to Social Identity Theory (Tajfel & Turner, 1979), perceivers form judgments based on salient social categories such as health status, age, and gender. The visibility of dementia symptoms also influences stigma: more noticeable symptoms often provoke stronger stigma, shaped by societal expectations around ageing and cognitive decline (Timmons et al., 2024; Werner et al., 2020). In contrast to diagnostic invisibility as a contact barrier, symptom visibility operates at the reaction stage. Salient behavioural cues may activate threat perceptions, norm-violation responses, or vulnerability stereotypes, thereby intensifying negative emotional reactions. Thus, visibility and invisibility influence stigma through distinct mechanisms rather than representing opposing effects.

(ii) Target's Gender

Gender stereotypes may shape dementia stigma independently of health status. Women are often stereotyped as more emotionally expressive, dependent, or vulnerable compared to men (Cuddy & Fiske, 2002). Such stereotypes may amplify perceptions of fragility or incapacity when cognitive decline is implied, potentially leading to greater stigma responses toward female targets. Thus, a main effect of gender may emerge, with female targets eliciting higher levels of stigma than male targets.

(iii) Interaction Between Gender and Health Status

In addition to this potential main effect, the impact of dementia status may vary by gender. A dementia diagnosis may contradict traditional masculine ideals of competence, autonomy, and strength more sharply than it contradicts feminine role expectations (Nguyen & Li, 2020). This perceived incongruity may intensify negative reactions toward men when dementia is present (Wadley & Haley, 2001). Accordingly, the difference in stigma between

targets described as living with dementia versus being healthy may be more pronounced for male targets than for female targets.

(iv) Target's Age

The target's age may shape dementia stigma through two distinct theoretical mechanisms. First, age-based stereotypes toward older adults are often ambivalent. Although older adults are commonly perceived as warm, they are also viewed as incompetent, inflexible, or burdensome (Cuddy & Fiske, 2002). Such stereotypes may amplify stigma toward older individuals, as dementia can be interpreted as confirming pre-existing assumptions about decline and dependency. In this pathway, older targets may elicit stronger stigma because dementia reinforces vulnerability and burden-related stereotypes (Low & Purwaningrum, 2020). In this pathway, age itself is expected to exert a direct main effect on stigma, with older targets eliciting greater stigma regardless of health status.

(v) Interaction Between Health Status and Age

Beyond the main effect of age discussed above, age may also moderate the impact of dementia diagnosis on stigma. Specifically, the stigma associated with dementia may depend on whether the diagnosis aligns with or violates age-based expectations.

Because dementia is culturally associated with old age, its occurrence in younger individuals violates normative expectations and may be perceived as more disruptive or abnormal (Low & Purwaningrum, 2020). This incongruity between age and diagnosis may intensify negative evaluation. Supporting this account, some research suggests that younger people living with dementia (under 65 years) are sometimes rated more negatively than older individuals with dementia (Werner et al., 2020). Under this expectation-violation pathway, the difference in stigma between dementia and healthy targets would be greater for younger than older individuals. The present study therefore tests whether target age moderates the

association between health status and stigma, without presuming that the moderation necessarily aligns with the main-effect age pattern described above.

Based on the above review, we hypothesise that higher dementia stigma will be reported when targets are described as: (a) living with dementia, (b) older in age; or (c) male, compared to when targets are described as: (a) healthy; (b) younger in age; or (c) female (*H2*). We further hypothesise that the higher dementia stigma associated with targets described as living with dementia than healthy will be more pronounced for men than women due to the addition of a perceived mismatch with stereotypes of male competence (*H3*). Finally, we hypothesise that this higher stigma for targets with dementia than healthy will be greater for younger than older targets, owing to a perceived mismatch with stereotypes of younger individuals as competent and healthy (*H4*).

Unique Predictors of Dementia Stigma

Previous literature indicated that predictors of dementia stigma are intercorrelated. For example, dementia is more prevalent among older people (Low & Purwaningrum, 2020), younger adults (18-29 years old) are less likely to have known someone living with dementia compared to older cohorts (Kim, Anstey, et al., 2022), and dementia knowledge tends to be poorer in Asian than Anglo-European cultures (Herrmann et al., 2018). These interrelationships are theoretically meaningful and reflect the clustered nature of real-world social characteristics.

To illuminate both shared and unique patterns, analyses were conducted in two stages. First, Pearson correlations were examined to describe the bivariate associations among predictors and stigma outcomes. These analyses provide insight into how variables covary in naturalistic settings. Second, multiple regression models were estimated to examine the relative contribution of each predictor while accounting for overlap with other variables. The

purpose of this step was not to treat intercorrelations as statistical “noise,” but to clarify whether specific variables explain unique variance in stigma above and beyond shared associations with related constructs. This approach has been used in prior stigma research (e.g., Kim et al., 2022) and allows for more precise interpretation of predictor roles within a multivariable context.

Consistent with the Framework Integrating Normative Influence on Stigma (Pescosolido et al., 2008), both perceiver and target characteristics were entered into the same regression model to examine their joint and relative contributions. Together, the correlation and regression analyses provide complementary perspectives: one describing the structure of associations, and the other clarifying their independent contributions.

In addition to examining predictor variables, the present chapter also considers how different media formats may shape stigma responses. Text-based and video-based vignettes may engage distinct psychological processes. Text-based materials are often associated with more analytic and reflective processing, whereas video-based stimuli provide richer visual and social cues that may enhance emotional engagement and perceived realism (e.g., Green & Brock, 2000; List & Ballenger, 2019). These differences may influence how participants interpret and respond to people living with dementia. Therefore, the present studies employ both text-based (Study 1) and video-based (Study 2) vignettes to examine whether media modality affects stigma-related judgments.

Study 1

To examine both perceiver and target characteristics as predictors of dementia stigma, we adopted an experimental design using a text vignette approach. This method allowed controlled manipulation of target characteristics (health status, gender, and age) through standardised scenarios. Common in stigma and social identity research (e.g., Hughes & Huby,

2004), vignettes prompt responses to consistent stimuli rather than vague impressions of dementia, enabling clearer interpretation of intersecting target effects. In the experimental studies, both the video and text vignette targets were presented as unfamiliar individuals (i.e., socially distant or outgroup cases). By collecting responses immediately after the vignette, we captured state-level reactions, including emotional responses and behavioural intentions towards people living with dementia, offering valuable insight into the dynamics of stigma.

Method

Participants

This study was approved by the Human Research Ethics Committee of a local university (2022/562). A priori power analysis was conducted in G*Power 3.1.9.7 (Faul et al., 2007) for a 2 × 2 × 2 between-subjects ANOVA. Based on prior research examining target characteristics in dementia stigma (e.g., $f = .16$ in Schnittker, 2000; $f = .33$ in Werner et al., 2020; $f = .29$ in Remedios & Snyder, 2018; $f = .23$ in R. Johnson et al., 2015), a small-to-medium effect size ($f = .25$) was selected as a reasonable estimate for detecting main effects and theoretically central two-way interactions. The analysis indicated the 237 participants are required to detect these effects, given power of .80 and alpha of .05. Sample size planning was based on detecting main effects and theoretically central two-way interactions. Higher-order (three-way) interactions were examined on an exploratory basis and may be underpowered; therefore, these findings should be interpreted with caution.

For the multiple regression analyses, a separate power analysis using a small-to-medium effect size ($f^2 = .03$) was selected based on the similar effect sizes reported in prior research (e.g., $f^2 = .03$ in Cheng et al., 2011; $f^2 = .02$ in Kim et al., 2022). The analysis suggested that 264 participants would be sufficient given power of .80 and alpha of .05.

Accordingly, our final sample size of 268 participants was sufficiently powered across both analyses.

Participants were recruited from both a university and the broader community. Students participated via the university's research system in exchange for course credit, while community members responded to online and library-based advertisements. Community participants were not paid but could enter a draw to win one of four $50 VISA gift cards. In total, 393 individuals were recruited (approximately 50% from each group), all residing in Australia, aged 18 or over, and without a dementia diagnosis. Of these, 66 were excluded for low survey completion or failing attention checks, 20 for failing the manipulation check, 36 for not identifying with either Asian or Anglo-European cultural backgrounds, and 3 for identifying as non-binary. The final sample ($N = 268$) comprised 40.1% university students and 59.9% community members, 59.5% identifying as Anglo-European and 40.5% as Asian, 59.5% female and 40.5% male.

Experimental Manipulation of Target Characteristics

Text Vignettes. Eight 100-word text vignettes described a person using a 2 (Health Status: dementia diagnosis vs. healthy) × 2 (Gender: male vs. female) × 2 (Age: middle vs. older) design. We developed the vignettes based on dementia stigma vignettes designed by Cheng et al. (2011) and M. L. O'Connor and McFadden (2012). The vignettes were first piloted and refined based on feedback from 11 voluntary student research assistants. Please see Appendix C for the full vignettes.

Measures of Dementia Stigma

While several dementia-specific stigma measures are available (e.g., Dementia Attitude Scale; M. L. O'Connor & McFadden, 2010; Dementia Public Stigma Scale; Kim, Eccleston, et al., 2022; Dementia Stigma Assessment Scale; Phillipson et al., 2015), these

scales primarily provide global indices of stigma and do not distinguish cognitive, emotional, and behavioural components in a manner consistent with the attribution-emotion-behaviour pathway model guiding the present research. Accordingly, the current study adopted a theory-driven measurement approach that combines a dementia-specific cognitive stigma scale with attribution-based subscales to assess emotional and behavioural responses, allowing for mechanism-level analysis.

Negative Emotions and Behavioural Intentions. The adapted attribution questionnaire (Corrigan & Watson, 2002) was used to measure negative emotions (fear and anger) and behavioural intentions (avoidance and helping intentions). This measure was selected because its subscales map directly onto the attribution–emotion–behaviour pathway framework that underpins the theoretical model of the present thesis. In addition, the Attribution Questionnaire has been previously applied in dementia-related stigma research (e.g., Werner et al., 2020), supporting its contextual applicability.

The scale comprised 12 items in total, with three items assessing each subscale: fear (3 items), anger (3 items), avoidance (3 items), and helping intentions (3 items). Items are rated on 7-point scales with 1 = ‘not at all’ to 7 = ‘very much’, where higher scores indicate higher levels of that emotion or behaviour. Sample items include ‘I would share a carpool with Harry/Jane every day’. The Cronbach’s α for each subscale were: fear = .836, anger = .760, avoidance = .681, and helping intentions = .765.

Negative Attitudes. Negative attitudes were measured using the 11-item Dementia Stigma Scale (Cheng et al., 2011). The scale assesses individuals’ attitudes and societal beliefs about dementia and people living with dementia, including perceptions of care, stigma, and social acceptance. Sample items include ‘society should treat persons with dementia with more tolerance’. This scale comprised of a 7-point Likert scale from 1 = ‘strongly agree’ to 7

= 'strongly disagree', where higher scores indicate higher dementia stigma. The Cronbach's α = .823.

Measures of Perceiver Characteristics

Demographic Information. Participants were asked for their age, gender, and cultural background at the beginning of the survey. Additional demographic information, including religion, education level, and employment status, was also collected, but these are not variables of interest in this research.

Dementia Knowledge. The 25-item Dementia Knowledge Assessment Scale (DKAS) (Annear et al., 2017) was scored on a 4-point scale (true, probably true, probably false, and false), where correct responses were given a score of 2, unsure correct responses were given a score of 1, and incorrect responses were given a score of 0. Higher scores indicate higher dementia knowledge. Sample items include, 'people with dementia will eventually lose all their ability to communicate'. The Cronbach's α = .836.

Contact Quality with People living with Dementia and Older People. Two separate 5-item Intergroup contact quality scales were used, one for people living with dementia and one for older people. These scales were adapted from the General Intergroup Contact Quantity and Contact Quality Scale (Islam & Hewstone, 1993). Participants first indicated whether they had ever had direct contact with a person living with dementia. In line with established contact research practice, contact quality is conceptually meaningful only when contact has occurred; therefore, participants who reported no prior contact were coded as zero on contact quantity and were not included in contact quality analyses. This scale comprised a 7-point Likert scale from 1 = 'none at all' to 7 = 'a great deal', where higher scores indicate higher contact quality. The Cronbach's α for the contact quality for people living with dementia and older people were .793 and .784, respectively.

Procedure

Participants completed an online Qualtrics survey, beginning with informed consent and demographic questions before random assignment to one of eight text vignettes. They were instructed to read the vignette for at least one minute. Participants then rated their negative emotions towards the target and their overall attitudes towards people living with dementia. They subsequently reported prior contact with people living with dementia and older adults, as well as their dementia knowledge. An attention check was also included, requiring participants to select the option ‘strongly agree’ on a 7-point Likert scale. Participants who failed to select the option was excluded from the final dataset.

Data Analysis

To identify predictors of dementia stigma, we first conducted bivariate correlation analyses to examine associations between each perceiver characteristic and the stigma outcomes, providing an initial mapping of relationships. To test the effects of target characteristics, 2 × 2 × 2 factorial ANOVAs were conducted examining health status (dementia vs. healthy), gender (male vs. female), and age (younger vs. older). The primary a priori focus was on main effects and theoretically motivated two-way interactions (health status × gender; health status × age), as these were most directly aligned with the research questions. The three-way interaction (health status × gender × age) was included as an exploratory analysis to examine whether the two-way interactions differed across levels of the third factor. The study’s power analysis was conducted based on detecting medium-sized main effects and theoretically central two-way interactions; it was not specifically powered to detect small three-way interaction effects.

Finally, a series of multiple regression analyses (one per stigma outcome) were conducted to estimate the unique contribution of each predictor while accounting for

intercorrelations among variables and controlling for theoretically relevant covariates (e.g., contact quality, gender, knowledge, and membership status), allowing estimation of predictor effects while accounting for potential confounding influences. This analytic approach allows both the identification of overall association patterns and the estimation of adjusted effects. All analyses were conducted in IBM SPSS Statistics (Version 30). To assess the robustness of the regression models, diagnostic checks for multicollinearity were conducted

Results

Correlations Between Perceiver Characteristics and Dementia Stigma

Table 2 presents the Pearson correlations within and between the dementia stigma outcomes and perceiver characteristics. The five dementia stigma outcomes were all significantly intercorrelated, such that more negative attitudes were associated with greater fear, anger, avoidance, and less helping.

Consistent with *H1*, each perceiver characteristic was significantly correlated with at least one dementia stigma outcome. Higher contact quality with people living with dementia was significantly correlated with four outcomes (fewer negative attitudes, anger, and avoidance; more helping). Higher contact quality with older people and dementia knowledge were each significantly correlated with all five outcomes (fewer negative attitudes, fear, anger, and avoidance; more helping). Cultural background was significantly correlated with four outcomes, such that Asian perceivers reported more negative attitudes, fear, anger, and avoidance than Anglo-European perceivers. Gender was significantly correlated with three outcomes, such that male perceivers reported more negative attitudes, more anger, and fewer helping intentions than female perceivers. Contrary to our prediction, membership status was only significantly correlated with one outcome, such that students reported more negative attitudes than community participants.

Table 2

Descriptive Statistics and Pearson Correlations between Dementia Stigma Outcomes and Perceiver Characteristics in Study 1 and Study 2

Variable	*M*	*SD*	1	2	3	4	5	6	7	8	9	10
Study 1 (*N* = 268)												
1. Negative attitudes	2.66	.69	-									
2. Fear	1.73	.99	.488**	-								
3. Anger	1.82	.92	.583**	.634**	-							
4. Avoidance	3.77	1.17	.310**	.210**	.281**	-						
5. Helping	5.00	1.11	-.328**	-.202**	-.234**	-.374**	-					
6. Contact quality with PWD	4.05	.99	-.247**	-.085	-.164*	-.254**	.254**	-				
7. Contact quality with older people	4.97	.96	-.342**	-.201**	-.289**	-.328**	.248**	.570**	-			
8. Dementia knowledge	21.65	8.42	-.375**	-.135*	-.167**	-.123*	.172**	.204**	.268**	-		
9. Perceiver's cultural background [a]	.41	.49	.305**	.223**	.209**	.245**	-.115	-.186**	-.313**	-.244**	-	
10. Perceiver's gender [b]	.59	.49	-.199**	-.096	-.138*	-.088	.246**	.096	.184*	.170**	-.017	-
11. Perceiver's membership status [c]	.40	.49	.206**	-.011	.046	.035	.078	-.056	-.053	-.080	.262**	.272**
Study 2 (*N* = 354)												
1. Negative attitudes	2.13	.67	-									
2. Fear	1.51	.84	.485**	-								
3. Anger	1.72	.86	.496**	.597**	-							
4. Avoidance	3.73	1.23	.310**	.143**	.285**	-						
5. Helping	5.22	1.09	-.415**	-.180**	-.239**	-.382**	-					
6. Contact quality with PWD	4.02	1.06	-.250**	-.048	-.127*	-.165**	.254**	-				
7. Contact quality with older people	5.12	.96	-.339**	-.212**	-.214**	-.297**	.382**	.477**	-			
8. Dementia knowledge	21.78	8.12	-.141**	-.113*	-.116**	-.104	.148**	.189**	.162**	-		
9. Perceiver's cultural background [a]	.49	.50	.209**	.262**	.176**	.171**	-.206**	-.179**	-.287**	-.178**	-	
10. Perceiver's gender [b]	.72	.45	-.153**	-.032	-.088	-.043	.133*	-.003	.076	.073	.008	-
11. Perceiver's membership status [c]	.64	.48	.073	.140**	.153**	.228**	-.065	-.098	-.211**	-.157**	.449**	.218**

Note. PWD = people living with dementia. [a] 0 = Anglo-European, 1 = Asian. [b] 0 = male, 1 = female. [c] 0 = community, 1 = student. *$p < .05$. **$p < .01$.

Many perceiver characteristics were also significantly correlated with each other. For example, higher contact quality with people living with dementia was associated with higher contact quality with older people. Higher contact quality with people living with dementia was associated with higher dementia knowledge. This complex interrelation between perceiver characteristics was statistically controlled in the multiple regression analyses below.

Relations Between Target Characteristics and Dementia Stigma

Table 3 presents the means and standard deviations of each dementia stigma outcome according to each target combination: 2 (Health status: dementia vs. healthy) × 2 (Gender: male vs. female) × 2 (Age: middle-aged vs. older). Table 4 summarises the ANOVA results with a dementia stigma outcome as the dependent variable and target characteristics as the independent variables. *H2* was partially supported. While stigma did not vary consistently across all predictors, three significant main effects emerged: participants reported greater avoidance towards targets with dementia than healthy, older than younger targets, and unexpectedly, fewer helping intentions towards female than male targets. No significant interactions were found between target predictors, offering no support for *H3* or *H4*. The three-way interaction was not statistically significant. Given that the study was not powered to detect small higher-order interactions, this result should be interpreted cautiously.

Table 3

Means and Standard Deviations of each Dementia Stigma Outcome separated by Target's Health Status, Gender, and Age in Study 1 and Study 2

Outcome	Health status	Male		Female	
		Middle-aged	Older	Middle-aged	Older
		M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Study 1 (*N* = 268)					
Negative Attitudes	Healthy	2.69 (.64)	2.65 (.77)	2.66 (.70)	2.74 (.83)
	Dementia	2.69 (.56)	2.68 (.83)	2.61 (.59)	2.57 (.67)
Fear	Healthy	1.61 (.79)	1.71 (1.07)	1.76 (1.07)	1.51 (.78)
	Dementia	1.50 (.60)	1.94 (1.28)	1.89 (1.07)	1.86 (1.02)
Anger	Healthy	1.73 (.93)	1.98 (1.11)	1.79 (.87)	1.66 (.84)
	Dementia	1.68 (.75)	1.78(1.03)	1.95 (.91)	1.96 (.83)
Avoidance	Healthy	3.36 (1.15)	3.51 (1.04)	3.31 (1.25)	4.20 (1.14)
	Dementia	3.75 (1.29)	3.92 (1.06)	4.01 (1.13)	4.03 (1.10)
Helping	Healthy	4.99 (1.14)	4.89 (1.01)	4.60 (1.19)	5.09 (1.16)
	Dementia	5.27 (.90)	5.38 (.94)	4.75 (1.31)	5.00 (1.15)
Study 2 (*N* = 354)					
Negative Attitudes	Healthy	2.14 (.64)	2.13 (.76)	2.19 (.56)	2.08 (.61)
	Dementia	2.18 (.69)	2.04 (.67)	2.17 (.73)	2.12 (.73)
Fear	Healthy	1.46 (.71)	1.73 (1.20)	1.36 (.70)	1.57 (.87)
	Dementia	1.57 (.73)	1.46 (.82)	1.58 (.95)	1.46 (.78)
Anger	Healthy	1.56 (.73)	1.70 (.92)	1.57 (.69)	1.89 (1.06)
	Dementia	1.73 (.85)	1.66 (.76)	1.79 (1.07)	1.89 (.78)
Avoidance	Healthy	3.37 (1.07)	3.86 (1.03)	3.31 (1.17)	4.00 (1.41)
	Dementia	3.50 (.90)	4.01 (1.21)	3.59 (1.31)	4.21 (1.39)
Helping	Healthy	4.88 (1.15)	5.29 (1.14)	4.99 (1.18)	5.17 (1.12)
	Dementia	5.32 (.86)	5.42 (1.09)	4.23 (1.01)	5.50 (1.01)

Table 4

Three-Way ANOVA Statistics with Target Characteristics as Independent Variables in Study 1 and Study 2

	Negative Attitudes			Fear			Anger			Avoidance			Helping		
	F	*p*	n^2_p	*F*	*p*	n^2_p	*F*	*p*	n^2_p	*F*	*p*	n^2_p	*F*	*p*	n^2_p
Study 1 (*N* = 268)															
Health status [a]	.39	.532	.00	1.63	.203	.01	.20	.655	.00	5.57	.019*	.02	2.37	.125	.01
Gender [b]	.13	.716	.00	.29	.593	.00	.17	.682	.00	3.17	.076	.01	3.95	.048*	.02
Age [c]	.00	.996	.00	.28	.595	.00	.24	.627	.00	4.85	.029*	.02	1.85	.175	.01
H [a] x G [b]	.57	.452	.00	.58	.446	.00	2.53	.113	.01	.22	.637	.00	1.72	.191	.01
H [a] x A [c]	.07	.786	.00	1.36	.244	.01	.00	.998	.00	2.24	.135	.01	.00	.967	.00
G [b] x A [c]	.06	.811	.00	2.97	.086	.01	1.17	.281	.00	1.09	.297	.00	1.78	.184	.01
H [a] x G [b] x A [c]	.17	.681	.00	.07	.798	.00	.40	.529	.00	2.48	.117	.01	.71	.400	.00
Study 2 (*N* = 354)															
Health status [a]	.00	.949	.00	.03	.874	.00	.86	.355	.00	2.21	.138	.01	6.17	.013*	.02
Gender [b]	.06	.800	.00	.47	.493	.00	1.68	.195	.01	.53	.468	.00	.00	.960	.00
Age [c]	1.11	.292	.00	.46	.496	.00	1.78	.183	.01	20.18	<.001*	.06	4.40	.037*	.01
H [a] x G [b]	.06	.802	.00	.52	.474	.00	.06	.801	.00	.14	.704	.00	.00	.998	.00
H [a] x A [c]	.09	.766	.00	3.79	.052	.01	1.40	.238	.00	.01	.918	.00	.20	.652	.00
G [b] x A [c]	.00	.967	.00	.05	.824	.01	.95	.331	.00	.34	.561	.00	.02	.889	.00
H [a] x G [b] x A [c]	.48	.488	.00	.04	.848	.00	.00	.978	.00	.03	.857	.00	.73	.394	.00

Note. ANOVA = Analysis of variance. H = health status; G = gender; A = age. [a] 0 = healthy, 1 = dementia. [b] 0 = male, 1 = female. [c] 0 = middle-aged $*p < .05$. $**p < .01$.

Multiple Regression With Both Perceiver and Target Characteristics

Table 5 summarises the multiple regression output with a dementia stigma outcome as the dependent variable and the set of six perceiver and three target characteristics entered simultaneously as the independent variables. Many predictors were no longer significantly related to dementia stigma outcomes after their intercorrelation (r = -.132 to .570) was statistically controlled.

Among the perceiver characteristics, higher contact quality with older people uniquely predicted fewer negative attitudes, less anger, and reduced avoidance. Asian participants reported more negative attitudes, fear, and avoidance than Anglo-European participants. Male participants expressed more negative attitudes and less helping than females. Greater dementia knowledge predicted fewer negative attitudes. Unexpectedly, students reported more negative attitudes than community members. Additionally, higher-quality contact with people living with dementia uniquely predicted greater helping, but not other stigma outcomes. Therefore, these findings only partially supported *H1*.

Among the target characteristics, as predicted, health status and age uniquely predicted avoidance, such that vignettes describing individuals as living with dementia than healthy, and older than younger individuals, elicited greater avoidance. Unexpectedly, gender uniquely predicted helping intentions in the opposite direction, such that female targets elicited fewer helping intentions than male targets. Therefore, *H2* was also partially supported.

Multicollinearity diagnostics indicated no concerns across all regression models, with all VIF values below 5 and tolerate values above .20.

Table 5

Multiple Regression Results for Each Dementia Stigma Outcome With All Perceiver and Target Characteristics as Predictors in Study 1 and Study 2

	Negative Attitudes			Fear			Anger			Avoidance			Helping		
	β	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*	*β*	*t*	*p*
Study 1 (*N* = 268)															
Contact quality with PWD	-.05	-.75	.455	.05	.72	.472	.01	.09	.932	-.11	-1.57	.119	.18	2.57	.011*
Contact quality with older people	-.17	-2.44	.015*	-.15	-1.92	.056	-.22	-2.90	.004**	-.20	-2.79	.006**	.07	1.00	.319
Dementia knowledge	-.24	-4.26	<.001**	-.07	-1.07	.286	-.07	1.08	.281	-.02	-.37	.714	.07	1.08	.280
Cultural background [a]	.14	2.29	.023*	.18	2.75	.006**	.11	1.75	.082	.14	2.30	.023*	-.05	-.83	.406
Gender [b]	-.17	-2.94	.004**	-.05	-.84	.404	-.10	-1.50	.136	-.05	-.76	.450	.19	3.03	.003**
Membership status [c]	.19	3.26	.001**	-.06	-.87	.383	.02	.38	.705	-.01	-.22	.826	.07	1.05	.296
Target's health status [d]	-.00	-.07	.948	.09	1.55	.123	.04	.62	.539	.14	2.45	.015*	.09	1.50	.136
Target's gender [e]	-.03	-.61	.543	.02	.36	.719	.02	.30	.762	.10	1.79	.074	-.14	-2.44	.015*
Target's age [f]	-.00	-.01	.991	.02	.37	.710	.03	.44	.663	.13	2.24	.026*	.07	1.18	.240
R^2	.28**			.06**			.11**			.18**			.16**		
Study 2 (*N* = 354)															
Contact quality with PWD	-.11	-1.87	.063	.07	1.40	.162	-.02	-.41	.684	-.03	-.48	.629	.09	1.50	.134
Contact quality with older people	-.24	-4.08	<.001**	-.16	-2.92	.004**	-.15	-2.38	.018*	-.25	-4.30	<.001**	.35	5.45	<.001**
Dementia knowledge	-.05	-1.02	.309	-.07	-1.25	.214	-.06	-1.01	.312	-.05	-.96	.338	.05	1.01	.312
Cultural background [a]	.12	2.12	.035*	.21	3.50	<.001**	.08	1.34	.181	.02	.37	.711	-1.00	-1.78	.076
Gender [b]	-.13	-2.41	.017**	-.03	-.49	.624	-1.00	-1.80	.072	.01	.18	.856	1.00	1.92	.056
Membership status [c]	-.02	-.40	.688	.01	.23	.822	.09	1.55	.123	.15	2.63	.009**	.03	.571	.568
Target's health status [d]	-.02	-.32	.752	.00	.01	.991	.04	.75	.455	.06	1.12	.263	.15	3.08	.002**
Target's gender [e]	-.01	-.15	.882	-.04	-.74	.461	.05	.94	.348	.03	.57	.572	.02	.47	.642
Target's age [f]	-.02	-.46	.648	.05	.86	.388	1.00	1.83	.069	.25	5.13	<.001**	.08	1.57	.117
R^2	.14**			.08**			.09**			.17**			.21**		

Note. PWD = people living with dementia. [a] 0 = people from Anglo-European cultural background, 1 = people from Asian cultural background. [b] 0 = male, 1 = female. [c] 0 = community member, 1 = student. [d] 0 = healthy, 1 = dementia. [e] 0 = male, 1 = female. [f] 0 = middle-aged, 1 = older people. *$p < .05$. **$p < .01$.

Discussion

As hypothesised, lower dementia knowledge, poorer quality of contact with people living with dementia and older people, being male, and identifying with an Asian background, were significantly associated with higher negative attitude. However, after the other covariates were statistically controlled, contact quality with people living with dementia was no longer a unique predictor of negative attitude, but it continued to predict helping intentions. People with higher contact quality with people living with dementia might be more familiar with the latter's needs and capabilities, and as a result, feel more confident in knowing how to offer help effectively.

Regarding the target characteristics, participants reported higher levels of avoidance towards targets living with dementia compared to healthy ones, and towards older than younger targets. Both older people and people living with dementia are often associated with stereotypes of lower competence (Cuddy & Fiske, 2002; Fiske, 2018). Such perceptions may lead to viewing them as less suitable for social inclusion, thereby increasing avoidance and reinforcing stigma (Nguyen & Li, 2020). The present findings extend this framework by demonstrating that these competence-related stereotypes operate similarly across both age and health-status dimensions.

Unexpectedly, participants reported fewer helping intentions towards female targets compared to male targets. This gender difference should be interpreted cautiously. One possible explanation is that helping responses are shaped by socially constructed role expectations. In some contexts, middle-aged or older women are stereotypically associated with caregiving roles (Revenson et al., 2016), which may influence how their needs are perceived. Rather than implying that women are less deserving of help, it is possible that

role-based expectations or perceived competence cues influence whether assistance is seen as necessary or appropriate in a given situation.

However, helping behaviour is likely determined by multiple interacting factors, including perceived vulnerability, situational framing, competence cues, and normative expectations. The present study did not directly measure these mechanisms, and therefore this interpretation remains speculative. Alternative explanations, such as differential perceptions of vulnerability or legitimacy of need, should also be considered in future research.

Contrary to hypotheses *H3* and *H4*, the interactions between target's health status and gender, and between target's health status and age, were not significant. This lack of a significant interaction effect suggests that participants responded to each characteristic separately, rather than integrating them in an intersectional or stereotype-incongruent way. In particular, the consistent effect of dementia status across age and gender groups may indicate that the dementia label exerted a broad influence on avoidance responses, rather than interacting with other social categories in shaping dementia stigma.

These findings should be interpreted with caution. While the text vignette approach enabled controlled manipulation of target characteristics, simply reading about a person living with dementia might have been too gentle as a manipulation of target characteristics, so we observed very little contribution from target characteristics on dementia stigma. To enhance the salience of the manipulation, Study 2 employed video vignettes in which target characteristics were presented as visual cues. Consequently, we expected target characteristics to make a greater contribution to predicting dementia stigma here.

Study 2

Media Formats and Presentation of Target Characteristics

Text-based vignettes require participants to read the description of a target person with specific characteristics and imagine the situation based on that text. However, this approach assumes that participants are sufficiently literate and fully attentive to mentally simulate the scenario, which may not always be the case (Facciani et al., 2022). In contrast, video vignettes present the target person's characteristics with more salient visual cues, allowing participants to focus on the visual target characteristics and immerse in the social situation without reading the text and imagining the described details from the text alone (Sleed et al., 2002). Video vignettes also offer greater external validity than text because they more closely mirror the dynamics of real-world social interactions (van Zelderen et al., 2024). Accordingly, Study 2 extends Study 1 by employing video vignettes to examine whether a more immersive and ecologically valid presentation of target characteristics shapes stigma-related responses differently.

Although brief, our text and video vignettes constitute minimal narrative worlds capable of eliciting transportation (Gerrig, 1993). Whilst some research has found inconsistent findings between text and video presentations (Vezzali et al., 2015), other research has reported that stronger immersion led to more intense emotions (Visch et al., 2010). Visch et al. (2010) compared the effect of film watching by either in a low immersive condition or in a high immersive condition, they found that audiences in the high immersive condition reported higher levels of both positive and negative emotions after watching the film. As greater immersion including properties such as increased vividness and sensory stimuli can create a stronger illusion of being physically present in a fictional world, greater immersion can enhance audiences' emotional arousa. Similar results were also found in van

Zelderen et al. (2024)'s study. They compared the effects of vignettes in text, video, and virtual reality formats and found that participants in more immersive conditions compared to those in less immersive conditions increased their attention to critical vignette details and reported high levels of positive and negative emotions after being presented with the vignettes. Accordingly, our hypotheses are the same across Study 1 and Study 2, but the effect of target characteristics on the emotional stigma-related outcomes may be stronger in Study 2.

Importantly, this modality comparison was not intended as a simple contrast in presentation style. Rather, it serves as a theoretically informed examination of whether mediated contact effects are sensitive to delivery format when narrative content is held constant. If stigma-related emotional and behavioural responses differ across text and video conditions, this would suggest that the mode of exposure itself functions as a boundary condition in mediated contact processes. In this way, the comparison contributes to psychological theory by clarifying whether stigma responses are format-invariant or whether certain modalities systematically strengthen or attenuate intervention effects.

Method

Participants

This study was approved by the Human Research Ethics Committee of a local university (2022/562). Student participants were recruited via the local university's research participation system in exchange for course credit. Community participants were recruited via prolific and compensated 6AUD. Eligibility criteria included residing in Australia, being over 18, and having no history of dementia diagnosis. Of the 486 participants initially recruited, 48 were excluded for low survey completion, 7 for failing attention checks, 6 for failing the manipulation check, 68 for identifying with cultural backgrounds other than Asian or Anglo-

European, and 3 for identifying as non-binary. The final sample ($N = 354$) comprised 63.8% university students and 36.2% community members, 51.4% identifying as Anglo-European and 48.6% as Asian, 72.3% female and 27.7% male.

Experimental Manipulation of Target Characteristics: Video Vignettes

In terms of visual and audio content, eight professionally produced video vignettes were created (2 health status × 2 age × 2 gender). Each video featured one actor portraying either a middle-aged or older adult, accompanied by a voice-over narration adapted from Study 1 describing the target as either healthy or living with dementia. All actors were Anglo-European. Actors were recruited via online casting platforms (e.g., StarNow) and were compensated at a rate of AUD $50 per hour. Prior to filming, all actors attended a one-hour online briefing session to ensure consistency in performance and understanding of the script. Target behaviours were standardised and intentionally neutral across all conditions to ensure that only the manipulated variables differed. Across all conditions, target behaviours were identical and included walking to a chair, looking at a family photo, reading a newspaper, drinking tea, listening to music, and opening a letter. Full video materials are provided in Appendix F.

Measures of Dementia Stigma and Perceiver Characteristics

All measures of dementia stigma and perceiver characteristics were the same as Study 1. The Cronbach's α were .813 for fear, .709 for anger, .705 for avoidance, .785 for helping intentions, .745 for negative attitudes, .813 for dementia knowledge, .817 for contact quality with people living with dementia, and .776 for contact quality with older people.

Procedure

The procedure of Study 2 was similar to Study 1, except that text vignettes were replaced by participants watching a video.

Results

Correlations Between Perceiver Characteristics and Dementia Stigma

Supporting *H1*, all five stigma outcomes in Study 2 were significantly intercorrelated, and all perceiver predictors were significantly associated with at least one outcome (see Table 2). There were only a few minor differences in the pattern of correlations between Studies 1 and 2. Similar to Study 1, contact quality with older people significantly correlated with all five outcomes (fewer negative attitudes, less anger, less avoidance, lower fear, and greater helping intentions) whereas contact quality with older people significantly correlated with the same outcomes except fear. In Study 1, dementia knowledge significantly correlated with all five outcomes, but it was significantly associated with all outcomes except avoidance in Study 2. Cultural background was significantly correlated with all five outcomes in Study 2, but it was significantly related to all outcomes except helping intentions in Study 1. Helping intentions were higher among women than men in both studies, whereas elevated anger among men (vs. women) emerged only in Study 1. Membership status (student vs. community) showed a broader effect in Study 2 with students reporting significantly greater fear, anger, and avoidance, whereas in Study 1 it was linked only to higher negative attitudes. Overall, *H1* was partially supported meaning contact quality with older people and people living with dementia, dementia knowledge, cultural background, and gender, are associated with dementia stigma outcomes as hypothesised, but membership status is associated with dementia stigma outcomes in an opposite direction to what was hypothesised.

Relations Between Target Characteristics and Dementia Stigma

The means and standard deviations of each dementia stigma outcome by each target characteristic are presented in Table 3. In Study 2, significantly greater avoidance was observed for older than younger targets, but the greater avoidance observed for targets

described as having dementia than healthy observed in Study 1 was not significant. In Study 2, significantly more helping was observed for targets described as older or living with dementia, but significantly more helping was observed for female than male targets in Study 1 instead. Similar to Study 1, no significant interactions were found between target characteristics, providing no support for *H3* or *H4*.

Multiple Regression With Both Perceiver and Target Characteristics

When all perceiver and target variables were entered simultaneously (Table 5), contact quality with older people was the only significant unique predictor across all five outcomes. Contact quality with people living with dementia and dementia knowledge did not significantly predict any outcomes. Participants from Asian backgrounds reported significantly greater fear towards people living with dementia than Anglo-European participants, men reported significantly more negative attitudes than women, students predicted significantly greater avoidance than community members. Overall, these findings are similar to Study 1 and partially support *H1*.

Among the target characteristics, older targets yielded significantly greater avoidance as in Study 1. Target's health status was not significantly related to avoidance, but it significantly predicted greater helping intentions towards healthy people. Target's gender significantly affected helping intentions in Study 1, but it was not significant in Study 2. Overall, these findings partially support *H2*, and they are similar to Study 1 in revealing only a few significant differences in dementia stigma according to target characteristics.

Multicollinearity diagnostics indicated no concerns across all regression models, with all VIF values below 5 and tolerate values above .20.

Discussion

Study 2 replicated the core pattern of results from Study 1: contact quality with older people was associated with all outcomes, contact quality with people living with dementia correlated with all outcomes except fear, and older (vs. younger) targets elicited greater avoidance. Some predictors significantly correlated with more dementia stigma domains in Study 2 than Study 1. Among the perceiver characteristics, cultural background was associated with all outcomes including helping intentions, which was not observed in Study 1. In Study 2, students reported higher fear, anger, and avoidance but membership status was only correlated with higher negative attitudes in Study 1. Some predictors showed weaker relations with dementia stigma in Study 2 than Study 1. For example, dementia knowledge and contact quality with people living with dementia did not uniquely predict any outcome. Among the target characteristics, older targets received significantly lower helping, whereas dementia (vs. healthy) status significantly increased helping intentions, but it was not significantly related to avoidance.

Overall, Study 2 revealed the same core predictors of dementia stigma found in Study 1, such as contact quality and cultural background. However, Study 2 expanded the number of unique perceiver predictors of emotional dementia stigma outcomes, attenuated the impact of knowledge, and shifted target predictors from avoidance to helping, compared to Study 1.

General Discussion

Consistent Predictors of Dementia Stigma across Text-based and Video-based Vignettes

First, our results consistently underscore the importance of contact quality, particularly with older people, in predicting dementia stigma across both studies. While previous studies highlighted that reduced stigma is related to direct contact with individuals living with dementia (Kim, Anstey, et al., 2022), our findings suggest that meaningful contact

with older people, a related but more accessible group, remains influential. This supports meta-analytic evidence for the secondary transfer effect, where contact with one outgroup reduces prejudice toward a related group (Pettigrew & Tropp, 2006). In the context of dementia stigma, this may reflect the rarity or difficulty of meaningful contact with people living with dementia, which can limit its impact (Batsch & Mittelman, 2012).

At the same time, given that dementia predominantly affects older adults, some overlap between contact with older people and contact with people living with dementia is likely. Although these constructs were measured separately and analysed using multivariable models, respondent-level overlap cannot be fully ruled out. This overlap may have contributed to the comparatively stronger predictive effect observed for older-adult contact, as such contact may have partially captured experiences with individuals living with dementia.

In contrast, everyday positive interactions with older people may offer a more accessible and potent avenue for shifting stigma through secondary transfer (Pettigrew, 2009). Together, these findings extend contact theory by demonstrating that secondary transfer effects may operate meaningfully in the context of dementia stigma, highlighting the role of adjacent social groups in stigma reduction.

Second, cultural background played an important role across both studies. Participants identifying with an Asian background reported higher levels of stigma even after controlling for dementia knowledge, which suggests the elevated stigma observed among individuals from Asian cultural backgrounds is not due to lower dementia knowledge or reduced intergroup contact (e.g., Tsiang & Woo, 2017), but it may reflect deeper, cultural beliefs about ageing, illness, and social roles. For example, values such as filial piety and family harmony in Asian cultures may frame dementia as a source of shame or moral failure, thereby

intensifying stigma (Sun et al., 2012). Together, these findings extend existing stigma frameworks by demonstrating that cultural context is not merely a background variable, but a central factor shaping how dementia is interpreted and responded to.

Third, unexpectedly, both studies showed that students reported greater stigma than community members. This finding runs counter to assumptions about liberal attitudes in university settings (Milem et al., 2005). One possible explanation is that students may have limited opportunities for sustained, meaningful contact with older adults in school settings, which has been shown to reduce age-related prejudice (Pettigrew & Tropp, 2006). Broader structural factors may also contribute to these patterns. Cross-national evidence suggests that societies with higher proportions of older adults sometimes report less favourable attitudes toward older people, potentially reflecting perceived resource competition or demographic pressures (North & Fiske, 2015). In addition, there is some evidence that age-related stereotypes have become more negative over time, particularly in modernised contexts (Ng et al., 2015). However, these findings should be interpreted with caution. The student and community samples differ not only in age but also in educational background, life experience, and contact opportunities, and the present data do not allow these factors to be disentangled. Accordingly, the observed differences are interpreted as group-level patterns rather than evidence of specific generational or developmental mechanisms.

The prediction that there would be an interaction effect between the target's gender and health status was not supported in either study. This suggests dementia stigma involves different mechanisms compared to other stigmatised identities, such as sexual orientation (Herek & McLemore, 2013) where such interaction effects have been found. Whilst our findings are inconsistent with previous research that has found interaction effects between the target's age and health status (Werner et al., 2020), our studies included community members, whose ages were closer to the middle-aged targets, whereas previous research only involved

student samples. The greater age similarity may have reduced these participant's threat appraisals and contributed to the null finding.

Distinct Predictors of Dementia Stigma across Text-based and Video-based Vignettes

Dementia knowledge significantly predicted dementia stigma in Study 1, but not in Study 2. One possible explanation is that video vignettes may have attenuated the influence of prior dementia knowledge by directing participants' attention to emotional and observable cues (Green & Brock, 2000). This explanation aligns with prior evidence showing that affect plays a stronger role than cognition in shaping intergroup responses when participants are exposed to video-based contact (Esses & Dovidio, 2002). This suggests that the influence of dementia knowledge on stigma may be context-dependent, with its effects becoming less pronounced when individuals are exposed to more immersive and emotionally engaging stimuli.

Another interesting pattern was that participants in Study 1 (text-based vignette) reported significantly higher avoidance towards people living with dementia than healthy people, whereas participants in Study 2 (video-based vignette) reported higher helping intentions towards people living with dementia instead. One explanation is that video, as a more immersive format than text, can transport participants into the fictional world in a more immediate and vivid way (Visch et al., 2010), thereby enhancing empathy and prosocial behaviours (Johnson, 2012). For example, Johnson (2012) found that participants who reported higher transportation following exposure to empathy-inducing fiction also showed greater affective empathy and were more willing to engage in helping behaviour. In contrast, text-based vignettes may provide a less immersive experience, leading participants to question the realism of the scenario, which may increase social distance from the described target (Green & Brock, 2000). Together, these findings suggest that stimulus modality may

shape not only the strength but also the direction of stigma-related responses, with more immersive formats potentially promoting prosocial engagement rather than avoidance.

Limitations and Future Direction

Although multivariate regression models were used to estimate the unique contributions of perceiver and target characteristics, residual confounding cannot be fully ruled out. Only covariates identified in the theoretical framework and available in the dataset (e.g., contact quality, gender, dementia knowledge, membership status) were included in the models. Other potentially relevant factors were not measured and therefore could not be statistically controlled. As a result, some observed predictor effects should be interpreted as adjusted associations rather than definitive independent causal influences.

The samples used in these studies were convenience-based (student and community recruitment), which may introduce selection bias and limit generalisability. Participants who volunteer for stigma-related research may differ systematically in interest, awareness, or prior exposure compared with the broader population. While the analytic models estimate relationships within the observed sample, population-level inference should be made cautiously. The revised thesis explicitly frames conclusions as sample-bounded, rather than population-universal.

We did not directly measure immersion or transportation levels across the text and video formats, so our account of format-driven mechanisms remains inferential. Stronger evidence for the underlying mechanism responsible for differences in the results between formats would require incorporating validated transportation or immersion measures and formally testing mediation. Likewise, we did not measure empathy, which limits our ability to determine whether the higher helping intentions observed under video-based vignettes reflect empathic concern versus other emotional pathways. Future work should include such

mediators and test mediation explicitly to strengthen the mechanistic evidence and the robustness of these findings.

One limitation of the present research concerns the operationalisation of cultural background. Although differences were observed between participants identifying with Asian and Anglo-European backgrounds, these groupings necessarily simplify complex and heterogeneous cultural experiences. Cultural background was treated as a broad categorical variable, and factors such as acculturation, cultural identity, language use, migration history, and generational status were not directly measured. As a result, the observed differences should not be interpreted as reflecting uniform or essentialised cultural characteristics. Instead, they are more appropriately understood as reflecting broader cultural meaning systems that may shape interpretations of ageing, illness, and social roles. Future research should adopt more nuanced and multidimensional measures of culture to better capture within-group variability and to clarify the specific mechanisms through which cultural context influences dementia-related stigma.

An additional limitation concerns self-selection bias inherent in voluntary survey research. Participants were recruited through university and community channels, and individuals who choose to participate in psychology research may differ systematically from those who do not. For example, they may be more open to social reflection, more comfortable discussing stigma-related topics, or already lower in baseline prejudice. Prior dementia stigma research suggests that student samples in particular may report comparatively lower levels of stigma (Werner et al., 2020), which may restrict variance and attenuate observed associations among predictors. As a result, the magnitude of identified relationships should be interpreted with caution, as they may not fully generalise to populations with higher baseline stigma or lower openness to contact. Future research employing probability-based sampling or more diverse community recruitment strategies would strengthen external validity.

Implications and Conclusions

Collectively, Studies 1 and 2 identified perceiver's contact quality with older people and cultural background as significant unique predictors of dementia stigma. The video vignette used in Study 2, provided a closer approximation to a real interaction, and it was found to enhance processing towards emotional pathways, attenuate the role of dementia knowledge, but promote helping intentions towards people living with dementia. The current findings provide encouraging evidence for the use of more immersive research methods (e.g., video, Virtual Reality, interactive simulations) to stimulate systematic differences in emotional and behavioural outcomes. Accordingly, the implications of these consistent findings for the development of stigma reduction interventions is to combine high-quality contact with culturally tailored components such as values, beliefs, and norms of specific groups, particularly among Asian-background participants (e.g., Sun et al., 2012). Taken together, our findings provide an important roadmap for the future design of inclusive and ecologically valid interventions for dementia stigma reduction.

CHAPTER 4

Study 3 and Study 4: Breaking down the Barriers of Dementia Stigma via Parasocial and Vicarious Contact

The global population of people living with dementia is rising at an exponential rate, with recent estimates indicating that this number will increase nearly threefold by 2050 (Nichols et al., 2022). Alongside this shift, stigma towards people living with dementia remains entrenched, manifesting in negative stereotypes, negative emotions, and social exclusion (Nguyen & Li, 2020). Dementia stigma not only undermines the quality of life of affected individuals and their families, but also contributes to barriers in diagnosis and treatment (Burgener, Buckwalter, Perkhounkova, & Liu, 2015; Warren & Wynia, 2025). Despite the scale and consequences of dementia stigma, few evidence-based interventions have been developed and tested to address it (Bacsu et al., 2022). This gap highlights an urgent need for the access of empirically validated parasocial contact (Study 3) and vicarious contact (Study 4) interventions to reduce dementia stigma.

Intergroup contact, derived from Allport's (1954) Contact Hypothesis, is one of the most well-established strategies for reducing prejudice. Extensive evidence demonstrates that contact between members of different groups can improve intergroup attitudes and reduce stigma (Pettigrew et al., 2011). In the context of dementia stigma, both negative contact experience with people living with dementia and absence of contact (avoidance) may not only leave stereotypes unchallenged but also intensify them over time, as the lack of counter-stereotypical information reinforces negative expectations (Pettigrew & Tropp, 2008). Thus, positive contact can provide counter-stereotypical information that challenges negative expectations about people living with dementia. Consistent with this reasoning, empirical

intervention studies suggest that contact interventions can improve attitudes and reduce dementia stigma (Bacsu et al., 2022; Kim et al., 2021; Matsumoto et al., 2023). Evidence also shows that individuals who report more frequent and higher-quality contact with people living with dementia tend to endorse lower levels of stigma (Herrmann et al., 2018; Kim et al., 2022). Collectively contact-based approaches provide a foundation for developing effective dementia stigma interventions.

Existing contact interventions have mainly focused on direct contact where individuals interact face-to-face with people living with dementia (e.g., Harris & Caporella, 2019; Lokon et al., 2017). However, implementing direct contact interventions can pose both practical and psychological challenges (White et al., 2021). For example, people living with dementia often reside in segregated contexts, such as residential aged care facilities, which restrict opportunities for the public to interact with them in daily life. Moreover, when opportunities do arise, people living with dementia are frequently perceived as psychologically threatening, reducing willingness to engage (Nguyen & Li, 2020). Together, these physical and psychological barriers make direct contact difficult and impractical to implement widely.

In light of these barriers, researchers have increasingly turned to indirect forms of contact, that do not require face-to-face interaction with outgroup members, as practical alternative to reduce prejudice (White et al., 2021). Two forms of indirect contact are particularly relevant in the present research: parasocial contact and vicarious contact (Banas et al., 2020). Parasocial contact involves one-sided, mediated exposure to an outgroup member, often through narratives or video, and is theorised to reduce prejudice through processes such as identification and emotional engagement (Schiappa et al., 2005). In contrast, vicarious contact involves observing positive interactions between ingroup and

outgroup members, which may reduce intergroup anxiety and promote more favorable attitudes (Mazziotta et al., 2011).

Although both approaches have been studied in broader intergroup contexts, their relative effectiveness and underlying mechanisms in the context of dementia stigma remain underexplored. The present chapter therefore examines these two forms of indirect contact to better understand how mediated interactions may reduce stigma and through which psychological pathways.

Study 3: Parasocial Contact and Dementia Stigma Reduction

Parasocial contact refers to simple exposure to the outgroup via media, which can give the illusion of face-to-face relationship with the performer (Schiappa et al., 2005). In the absence of meaningful interpersonal contact, positive media portrayals can offer an alternative pathway for reducing stereotypes and fostering more favorable attitudes toward minority groups (Schiappa, 2024). Previous parasocial contact research found significantly reduced prejudice towards gay males (Schiappa et al., 2006), people living with bipolar disorder (Wong et al., 2017), people living with mental illness (Hoffner & Cohen, 2015), and migrants (Vezzali et al., 2015). Accordingly, the present study extends parasocial contact research to the context of dementia stigma, examining whether mediated exposure to a person living with dementia can reduce stigma across multiple domains.

In dementia stigma research, vignette methodologies have not been conceptualised in terms of parasocial contact. Rather, the primary purpose has been to examine how specific characteristics of targets would influence dementia stigma outcomes. For example, Cheng et al. (2011) used text-based vignettes to test whether describing a person living with dementia, with or without an explicit dementia label, would affect participants' attitudes compared to a a condition without vignette exposure. In their study, participants read a short description of a

person living with dementia symptoms, such as an example featuring an 80-year-old retired teacher experiencing progressive memory loss. The results showed that even a minimal description reduced negative attitudes compared to no-contact group. By contrast, O'Connor and McFadden (2012) examined whether target's age and target's dementia status would intensify negative cognitions by presenting text-based vignettes to participants. A sample vignette is "*recently received a physical exam–diagnosed with Alzheimer's disease Symptoms: Progressive memory loss; dementia; disorientation*". They found that, relative to a healthy-control vignette, exposure to a vignette depicting a person living with dementia was more likely to elicit stigma than to reduce it.

Although these studies were not designed as parasocial contact interventions, we treat them as such because the method of presenting participants with text-based vignettes describing a person living with dementia fits the definition of parasocial contact, a form of one-sided, mediated exposure to an outgroup member (Schiappa et al., 2005). This conceptual framing allows us to situate vignette-based stigma research within the broader parasocial contact literature, where similar mediated exposures have been shown to influence intergroup attitudes. Together, these findings illustrate that vignette-based exposures can yield divergent outcomes. Parasocial contact with people living with dementia can sometimes reduce negative attitudes (Cheng et al., 2011) and at other times reinforce stigma (M. L. O'Connor & McFadden, 2012). One possible explanation for these divergent findings is the content and length of the vignettes. A meta-analysis of parasocial contact found that the duration of time individuals spend on having parasocial contact with the media figure enhance relationship development with the media figure (Tukachinsky et al., 2020). Cheng et al. provided a relatively richer narrative, which may have humanised the target and fostered sympathy, whereas M. L. O'Connor and McFadden offered only a brief, clinical description, which may have reinforced deficit-focused stereotypes. Building on this evidence, we

hypothesise that our five-minute, video-based parasocial contact will reduce dementia stigma by providing a richer and more engaging portrayal of a person living with dementia.

Cultural Background as a Moderator of the Effect of Parasocial Contact on Dementia Stigma

Cultural background is also an important factor shaping dementia-related attitudes. Prior research has shown that Asian populations often report higher levels of dementia stigma than Anglo-European populations, including stronger negative attitudes, greater fear, and greater social distance (Herrmann et al., 2018; Kim et al., 2022; Low et al., 2010). The higher dementia stigma found amongst Asians compared to Anglo-Europeans may be tied to culturally specific beliefs about dignity and ageing. In Western settings, dignity is tied to autonomy and independence, so dementia threatens these ideals by stripping away cognitive and functional autonomy (Burgener, Buckwalter, Perkhounkova, & Liu, 2015; Heggestad et al., 2015; Koehn & Leung, 2008). In East Asian contexts, dignity is relational and grounded in fulfilling familial roles (Fu et al., 2008; Koehn & Leung, 2008). Dementia disrupts this ideal by impairing the ability to uphold expected roles within the family, leading to shame (Liu et al., 2008). Accordingly, we expected that Asian participants would report higher levels of dementia stigma than Anglo-European participants.

Finally, cultural background may not only predict baseline stigma but also moderate the effects of parasocial contact on dementia stigma. Prior work shows that contact interventions are often more effective for individuals who are more “prejudice-prone” or cognitively rigid (Hodson, 2011). Consistent with this, Kim et al. (2021) found that contact intervention with people living with dementia was especially effective for participants with higher baseline dementia stigma, with effects persisting for several weeks. Building upon this reasoning, we predict that parasocial contact may be more impactful for participants from

Asian backgrounds, who have been found to report higher baseline levels of dementia stigma (Herrmann et al., 2018; Kim et al., 2022; Low et al., 2010), than participants from Anglo-European backgrounds. This raises the possibility that parasocial contact does not only operate uniformly across cultural groups but interacts with pre-existing stigma levels. Specifically, Asian participants, who generally report higher baseline stigma toward people living with dementia, may experience greater reductions in stigma following parasocial contact than Anglo-European participants, who typically begin with lower stigma and thus may show smaller absolute changes.

Beyond these baseline differences, parasocial contact is more effective when participants perceived the portrayed outgroup as similar and likeable because the participants would be more likely to identify with the outgroup (Schiappa et al., 2006). Identification with the outgroup member has consistently been identified as a key mechanism through which parasocial contact shapes attitudes (Hoffner & Cohen, 2015; Wong et al., 2022). To address this issue, our design and subsequent analysis in the current study only involved participants exposed to culturally matched targets, that is, Asian participants watching videos involving Asian targets and White participants watching videos with a White target, to maximise the potential for parasocial identification.

Research Aim

Study 3 aimed to investigate whether parasocial contact with a person living with dementia is associated with lower dementia stigma across attitudinal, emotional, and behavioural domains, and whether cultural background moderates this association.

Hypotheses

H1: Participants exposed to parasocial contact with a person living with dementia compared to a healthy control target (i.e., no parasocial contact) will report lower negative attitudes, less fear, less anger, less avoidance and higher helping intentions.

H2: Participants from an Asian compared to Anglo-European cultural background will report higher negative attitudes, fear, anger, avoidance, and lower helping intentions.

H3: Cultural background will moderate the parasocial contact-dementia relationship, such that parasocial contact will be more effective for Asian participants, who we expect to report higher dementia stigma, than Anglo-European participants.

Method

Data Availability Statement

Part of the dataset reported here was reported in *Clarifying the Predictors of Dementia Stigma using both Text-based and Video-based Vignettes*, which had a diagnostic focus and examined a broader set of predictors (e.g., dementia knowledge and prior contact experience with older people) using videos with White targets. In the present study, we narrow the focus to parasocial contact and cultural background, analysing only culturally matched pairings (i.e., Asian participants viewing Asian targets and Anglo-European participants viewing White targets). The dataset includes using videos portraying both White and Asian targets. Anonymised data for the current dataset is available on the Open Science Framework (OSF): https://osf.io/pq2nr/?view_only=c9e987812f25415894624122d0b9bc59.

Participants

This study was approved by the Human Research Ethics Committee of a local university (2022/HE000562). An a prior power analysis was conducted in G*Power (Faul et

al., 2007) for the planned ANOVAs. Based on previous effect sizes reported in parasocial contact (Ray & Husnu, 2025: f^2 = .05), parasocial contact studies on dementia stigma (Cheng et al., 2011: f^2 = .03; Kim et al., 2021: f^2 = .04), and the moderation effect of culture on contact and prejudice (e.g., Xiao & Li, 2024: f^2 = .02; Kende et al., 2018: f^2 = .02), we adopted a small-to-medium effect size of f^2 = .03 to ensure adequate sensitivity to a theoretically meaningful culture × contact interaction (Cohen, 1992). With the alpha level set at .05 and desired power at .80, the analysis indicated that a minimum of 274 participants would be sufficient to detect the effect of parasocial contact on stigma.

Participants were recruited via two methods. The first one is recruiting students from a local university's research participation system in exchange for course credit. The second one is recruiting community members from either online platforms or prolific. Participants who completed the survey on prolific received 10 AUD as a reward. Eligible participants had to reside in Australia, be over 18 years old, and have never been diagnosed with dementia. Of the 367 culturally matched participants, 25 were excluded for low survey completion, 3 for failing attention checks, 5 for not meeting eligibility requirements, and 4 for identifying as non-binary, leaving a final sample of $N = 330$. The final sample comprised 57.6% university students and 42.4% community members. The sample included 55.8% identifying as Anglo-European, 44.2% as Asian. The sample included 72.4% of participants identifying as female and 27.6% identifying as male.

Parasocial Contact Stimuli

The design included two between-subjects factors: 2 (Condition: parasocial contact with a person living with dementia vs. parasocial contact with a healthy person) x 2 (Matched Cultural background: Anglo-European vs. Asian). To enhance generalisability, the vignettes were produced in multiple versions that varied the target's gender (male vs. female) and age

(middle-aged vs. older), resulting in a total of eight vignette versions. These additional variations were included to increase ecological validity but were not analysed as factors of primary interest.

Importantly, in all conditions, the targets were presented as unfamiliar individuals rather than as family members or close relational ingroup figures. This design feature ensured that relational distance (i.e., social outgroup status) was held constant across both Western and East Asian participants, allowing cultural background and health status effects to be examined without confounding differences in perceived closeness or ingroup identification. Thus, any observed differences cannot be attributed to variation in relational proximity.

The links for each video vignette can be found in Appendix G. Each vignette lasted approximately five minutes and depicted a target enacting everyday activities (e.g., walking, listening to music, reading a newspaper, or reading a letter) accompanied by a voice-over narration describing the target's life and health condition. Actors were recruited via online casting platforms (e.g., StarNow) and community social media groups. All actors were compensated at a rate of AUD $50 per hour and attended a one-hour online briefing session prior to filming to ensure consistency in performance and understanding of the script.

Immediately after the exposure of the parasocial contact stimuli, participants were asked to rate intergroup anxiety and outgroup empathy, followed by the attitude, emotional, and behavioral intentions measures.

Measures

Negative attitudes. The 11-item Dementia Stigma Scale (Cheng et al., 2011) was used to measure negative attitudes towards people living with dementia. Individuals' societal beliefs about dementia and people living with dementia, including perceptions of care, stigma, and social acceptance were asked. The scale was rated on a 7-point Likert Scale from 1

(*strongly agree*) to 7 (*strongly disagree*), where higher scores indicate higher dementia stigma. The Cronbach's α = .751.

Negative Emotions and Behavioural Intentions. Negative emotions (fear and anger) and behavioural intentions (avoidance and helping) were assessed using the adapted Attribution Questionnaire (Corrigan et al., 2002). The scale consisted of twelve items, each rated on a 7-point Likert scale ranging from 1 ("*not at all*") to 7 ("*very much*"), with higher scores reflecting stronger endorsement of the respective emotion or intention. The Cronbach's α for each subscale were: fear = .780, anger = .681, avoidance = .669, and helping intentions = .711.

Intergroup anxiety and Outgroup Empathy. Intergroup anxiety was assessed using a 7-item scale from Wojcieszak and Warner (2020). Four items were reverse coded so that higher scores indicated greater intergroup anxiety. Outgroup empathy was measured using a 5-item scale adapted from Pedersen et al. (2004), with two items reverse-coded such that higher scores reflected greater empathy toward the outgroup. For both scales, items were averaged to create composite scores. Internal consistency was acceptable, with Cronbach's α = .671 for intergroup anxiety and α = .655 for outgroup empathy.

Attention Check Questions. To ensure data quality, two attention check items were included. In one item, participants were instructed to select the response option *"Strongly agree."* In the other, participants were asked to select the response option *"None at all."* Three participants who failed to answer both questions correctly were excluded from the final dataset.

Procedure

After providing informed consent and completing demographic questions through a Qualtrics survey link, participants were randomly assigned to one of the two conditions

(Parasocial contact condition: dementia vs. healthy). Assignment to condition was random; however, the cultural background of the stimulus (Anglo-European vs. Asian) was matched to participants' self-identified cultural background rather than randomly assigned. As cultural background was a naturally occurring variable and not experimentally manipulated, the overall design is characterised as quasi-experimental. Each participant viewed a five-minute video vignette depicting a target from one of the two parasocial contact conditions. After viewing the video, participants completed another part of demographic information and then debriefed.

Data Analysis

Data were analysed using IBM SPSS Statistics (Version 30). After screening for missing data, a series of 2 (contact condition: dementia vs. healthy) × 2 (cultural background: Anglo-European vs. Asian) between-subjects ANOVAs were conducted separately for each of the five dementia stigma outcomes. This analytic approach was selected to align directly with the hypothesis structure, allowing the independent and interactive effects of experimentally manipulated contact condition and quasi-experimental cultural background to be examined at the level of each theoretically distinct stigma domain.

ANOVA was used as the primary analytic model because participants were randomly assigned to contact conditions, and the hypotheses focused on total condition effects rather than covariate-adjusted estimates. Under random assignment, background variables are expected to distribute approximately evenly across groups, supporting the use of ANOVA for testing condition effects.

To test *H1*, the main effect of contact condition was examined; to test *H2*, the main effect of cultural background was assessed; and to test *H3*, the interaction between contact condition and cultural background was evaluated. Although MANOVA can be appropriate

when dependent variables are intercorrelated, it was not adopted because the research questions were outcome-specific and theory-driven, requiring interpretation at the individual construct level. Accordingly, separate models were estimated, with appropriate controls (e.g., Bonferroni adjustments) applied to address Type I error. Where significant interactions emerged, simple effects analyses were conducted. Effect sizes are reported as partial eta squared ($\eta^2 p$), and statistical significance was set at $\alpha = .05$.

Results

H1: Main Effect of Parasocial Contact on the Dementia Stigma Outcomes

The descriptive statistics and correlation between dementia stigma outcomes, experimental condition, and cultural background are reported in Table 1. The means and standard deviations of each group are reported in Table 2. A series of between-subjects ANOVA was conducted to examine the effect of parasocial contact with a person living with dementia (experimental condition) vs. with a healthy adult (control condition) on each of the five dementia stigma outcomes. The results showed no significant difference between participants who had parasocial contact with a person living with dementia and participants who had parasocial contact with a healthy person on negative attitudes, F (1, 326) = 1.14, p = .286, $\eta^2 p$ = .003, fear, F (1, 326) = 1.43, p = .233, $\eta^2 p$ = .004, and anger, F (1, 326) = 3.24, p = .073, $\eta^2 p$ =.010.

However, greater avoidance was reported by participants who had parasocial contact with people living with dementia, F(1, 326) = 13.40, p < .001, $\eta^2 p$ = .039. Greater helping intentions were also reported by participants in the experimental than control condition, F (1, 326) = 4.44, p = .036, $\eta^2 p$ = .013. Based on these results, *H1* is not supported.

Table 1

Descriptive Statistics and Pearson Correlations between Dementia Stigma Outcomes, Experimental Condition, and Cultural Background in Study 3

Variable	*M*	*SD*	1	2	3	4	5	6
1. Negative attitudes	2.14	.67	-					
2. Fear	1.46	.77	.49**	-				
3. Anger	1.62	.74	.47**	.59**	-			
4. Avoidance	3.74	1.23	.37**	.21**	.28**	-		
5. Helping intentions	5.27	1.02	-.40**	-.21**	-.23**	-.29**	-	
6. Experimental condition [a]	.49	.50	.07	-.05	-.09	-.18**	-.13**	-
7. Cultural background [b]	.44	.50	.24**	.24**	.08	.19**	-.18**	.05

Note. N = 330. [a] 0 = experimental group, 1 = control group [b] 0 = Anglo-European, 1 = Asian.

*p < .05. **p < .01.

Table 2

Means and Standard Deviations for Dementia Stigma Outcomes by Experimental Condition and Cultural Background in Study 3

	Anglo-European			Asian			Overall Sample	
Outcome	Experimental	Control	Overall	Experimental	Control	Overall	Experimental	Control
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Negative Attitudes	1.93 (.59)	2.07 (.57)	2.00 (.58)	2.32 (.63)	2.33 (.81)	2.32 (.73)	2.09 (.64)	2.19 (.70)
Fear	1.33 (.60)	1.25 (.60)	1.29 (.60)	1.72 (.87)	1.61 (.94)	1.66 (.91)	1.50 (.75)	1.42 (.80)
Anger	1.61 (.66)	1.52 (.71)	1.57 (.69)	1.78 (.82)	1.58 (.77)	1.68 (.80)	1.69 (.74)	1.55 (.74)
Avoidance	3.68 (1.34)	3.35 (1.17)	3.53 (1.27)	4.33 (1.02)	3.70 (1.13)	4.00 (1.12)	3.95 (1.25)	3.51 (1.16)
Helping intentions	5.58 (.99)	5.27 (.97)	5.43 (.99)	5.14 (.96)	4.99 (1.10)	5.06 (1.03)	5.40 (1.00)	5.14 (1.04)

Note. $N = 330$.

H2: Main Effect of Cultural Background on the Dementia Stigma Outcomes

A significant main effect of cultural background was observed on four of the five dementia stigma outcomes. Asian compared to Anglo-European participants reported significantly higher negative attitudes towards dementia, F (1, 326) = 20.06, $p < .001$, $\eta^2 p = .058$, more fear, F (1, 326) = 20.25, $p < .001$, $\eta^2 p = .058$, more avoidance, F (1, 326) = 14.20, $p = <.001$, $\eta^2 p = .042$, and fewer helping intentions, F (1, 326) = 10.53, $p = .001$, $\eta^2 p = .031$. However, there was no significant difference in anger between the two groups, F (1, 326) = 2.07, $p = .151$, $\eta^2 p = .006$. Therefore, *H2* is mainly supported.

H3: The Interaction Between Contact Condition and Cultural Background on Dementia Stigma across All Domains

The interaction between contact condition and cultural background was not significant for any of the dementia stigma outcomes: negative attitudes, F (1, 326) = .83, $p = .364$, $\eta^2 p = .003$, fear, F (1, 326) = .03, $p = .863$, $\eta^2 p = .000$, anger, F (1, 326) = .41, $p = .521$, $\eta^2 p = .001$, avoidance, F (1, 326) = 1.30, $p = .255$, $\eta^2 p = .004$, and helping intentions, F (1, 326) = .52, $p = .472$, $\eta^2 p = .002$. These results indicate that *H3* is not supported, which means the effect of parasocial contact on dementia stigma did not vary by cultural background.

Discussion

Contrary to Hypothesis 1, our findings showed that participants exposed to the parasocial contact video reported higher levels of avoidance and helping intentions towards people living with dementia than those in control condition. In fact, parasocial contact interventions from previous research were not standardised and loosely structured. Many parasocial contact reused existing materials where valence, self-disclosure, and narrative arc vary (e.g., TV shows in Schiappa et al., 2006; celebrities in Wong et al., 2017) with engaging contents to capture participant's attention. By contrast, the parasocial contact stimuli in Study

3 did not program in an entertainment purpose, therefore it is possible that participants may perceive the parasocial contact in Study 3 as a reminder of the vulnerability of people living with dementia which can arouse discomfort feelings (Nario-Redmond et al., 2019). To regulate the emotional distress elicited by perceiving vulnerability, some individuals engage in approaching behaviours such as helping, whereas others cope through withdrawal or avoidance (Elliot, 2006). Thus, helping/avoidance behaviours can function as a self-regulatory strategy to alleviate feelings of discomfort associated with vulnerability.

As predicted, Asian participants reported higher dementia stigma especially on negative attitudes and negative emotions towards people living with dementia. This finding is consistent with previous evidence, including a meta-analysis showing that Asian populations tend to endorse stronger dementia stigma than their Anglo-European counterparts (Herrmann et al., 2018). Other empirical studies have similarly demonstrated that Asian communities often express more fear, discomfort, and avoidance towards dementia (Kim, Anstey, et al., 2022; Low et al., 2010). These patterns have been attributed to cultural norms emphasising filial responsibility, family reputation, and the social consequences of illness disclosure, which may heighten the sense of shame associated with dementia in many Asian contexts (Liu et al., 2008). Together, these findings reinforce the view that dementia stigma is culturally embedded, and that interventions need to be tailored to the cultural contexts in which stigma arises.

Contrary to Hypothesis 3, the effect of parasocial contact on dementia stigma was not found to be more pronounced amongst Asian participants, whose baseline stigma is higher (Hodson, 2011). A plausible explanation is greater within-group heterogeneity among Asian participants in Australia. Some Asian participants may live geographically apart from their older parents, yielding lower direct contact with family members who may develop dementia. For them, parasocial contact as a substitute for real-world interaction may be more effective.

However, in collectivist cultures, intergenerational co-residence is expected and common, increasing the likelihood of frequent interaction with family members who may develop dementia (Chen & Short, 2008). In such contexts, higher levels of dementia stigma may not be primarily driven by a lack of contact, but rather by the quality or valence of contact, as negative or stressful caregiving experiences may reinforce stigma-related beliefs (Pettigrew & Tropp, 2008). This may also have implications for the effectiveness of indirect contact interventions, as forms of contact that rely on passive exposure (e.g., parasocial contact) may be less effective in contexts where prior contact experiences are negative or emotionally complex.

Taken together, Study 3 suggests that our parasocial contact manipulation was still superficial to shift dementia stigma. Accordingly, Study 4 tests a more structured indirect contact, vicarious contact, and targets Asian participants, who showed higher baseline stigma in Study 3.

Study 4: Vicarious Contact and Dementia Stigma

Study 4 aims to examine another form of indirect contact, vicarious contact. Whereas parasocial contact in Study 3 relies on perceivers' one-sided engagement with outgroup members, vicarious contact occurs when perceivers observe a positive interaction between an ingroup and an outgroup member (Mazziotta et al., 2011; Wright et al., 1997). Such observations can provide behavioural scripts for how to engage across group boundaries, encouraging perceivers to think about, feel toward, and anticipate future intergroup encounters in more positive ways (Bandura, 2002). Compared with the brief parasocial exposure in Study 3, vicarious contact offers a richer and more engaging context, in which the intergroup interaction is both positive and meaningful.

To our knowledge, no study has experimentally tested vicarious contact in the context of dementia stigma. However, several interventions adopt paradigms consistent with vicarious contact. For example, Reynolds et al. (2017) examined a community orchestra project in which people living with dementia, students, and community members performed together in front of the public. The public then reported more positive perceptions of dementia after the performance, demonstrating the power of observing cooperative interactions between community members and people living with dementia. Similarly, Zheng et al. (2016) evaluated a culturally tailored short film depicting a family supporting a relative with dementia, ending with the message, "*As long as there is love, dementia is not hopeless*", among Chinese Americans. After viewing, 89% of participants reported that the film changed their misconceptions about dementia. Taken together, these findings highlight the promise of vicarious contact in challenging some of the stereotypes related to dementia stigma (e.g., incompetence, hopelessness, dependence) through accessible and culturally relevant formats.

To structure the vicarious contact as positive, the present study incorporated Allport (1954)'s facilitating conditions of intergroup contact, namely equal status, common goals, cooperation, and authority support, which have been shown to strengthen the effectiveness of contact interventions (Pettigrew et al., 2011; White et al., 2020). By integrating these elements into the design of the video stimuli, the interaction between ingroup and outgroup member was structured to appear equal, collaborative, and socially endorsed, thereby providing an optimal model of intergroup engagement.

Study 4 focuses on Asian participants only, as they have been consistently shown to report higher dementia stigma than Anglo-European participants (see Study 3; and Herrmann et al., 2018; Low et al., 2010). Study 3 further suggested that the quality of parasocial contact may have been too weak to shift stigma among Asians, who hold higher baseline stigma. Because vicarious contact conveys an explicitly positive interaction and requires cultural and

gender matching between the ingroup member and the perceiver, it offers a more suitable strategy for this population. Targeting Asian participants therefore allowed us to address a group for whom dementia stigma is particularly pronounced and for whom stigma-reduction interventions are most urgently needed. On this basis, we predicted that Asian participants in the vicarious contact group will report lower dementia stigma than Asian participants in the no-contact control group.

Mediating Roles of Intergroup Anxiety and Outgroup Empathy

To further understand the mechanisms that underpin how vicarious contact reduces dementia stigma, we also measured the mediating roles of intergroup anxiety and outgroup empathy. Decreased intergroup anxiety and increased outgroup empathy have been identified as significant mediators in meta-analyses of contact studies (Banas et al., 2020; Pettigrew & Tropp, 2008). Observing an ingroup member positively interact with the outgroup member can increase self-efficacy, which is the belief that the perceivers perceive they can also have positive interaction with the outgroup member as well (Wong et al., 2022). The increased self-efficacy and increased identification with the ingroup members are hypothesised to result in lower levels of intergroup anxiety when having contact with outgroup members. Moreover, vicarious contact, as an indirect contact approach, allows perceivers to experience a psychological interaction in a low-threat environment when a physical interaction is not possible. The experience of such a psychological connect can also help reduce the intergroup anxiety (White et al., 2021).

Similarly, observing the outgroup member during indirect contact can provide opportunities for the perceiver to look deeper into the outgroup’s experience. Because such interactions are observed in a low-threat context, perceivers are more able to focus on the outgroup member’s perspective, which facilitates both cognitive and affective empathy

(Tassinari et al., 2024). In addition, portraying outgroup members in meaningful social interactions humanises them and highlights shared experiences, further enhancing empathy (Vezzali et al., 2022). Accordingly, the present study examines whether vicarious contact reduces dementia stigma through decreased intergroup anxiety and increased outgroup empathy.

Research Aim

Study 4 aimed to investigate whether participants watch a vicarious contact between an ingroup member and a person living with dementia is associated with lower dementia stigma across attitudinal, emotional, and behavioural domains. Additionally, we aimed to test whether intergroup anxiety and outgroup empathy are mediators of the contact-prejudice relationship.

Hypotheses

H4: Participants who watched a vicarious contact stimuli compared to those who did not watch any video will report lower negative attitudes, less fear, less anger, less avoidance and higher helping intentions.

H5: The effect of vicarious contact on each outcome will be mediated by (a) intergroup anxiety and (b) outgroup empathy, with vicarious contact reducing intergroup anxiety and increasing outgroup empathy, which in turn lowers negative attitudes, fear, anger, and avoidance, while elevating helping intentions.

Method

Participants

This study was approved by the Human Research Ethics Committee of a local university (2024/HE000615). An a priori power analysis was conducted in G*Power (Faul et

al., 2007) for t-tests with one fixed factor (Condition: vicarious contact vs. control). Previous studies implementing vicarious video-based indirect contact in other stigma contexts have reported a medium-to-large effect size (Mazziotta et al., 2011: $d = .85$; Cameron et al., 2007: $d = .87$; Vezzali et al., 2012: .63, therefore we adopted a medium effect size of $d = .50$ for planning purposes. With alpha fixed at .05, and desired power at .08, at least 102 participants was calculated to detect this expected medium effect size. To estimate the power of a parallel two-mediator model, power was estimated in G*Power using the joint-significance approach (Faul et al). Previous meta-analysis using intergroup anxiety (M_1) and outgroup empathy (M_2) as mediators between indirect contact and prejudice indicated that for path a_1 ($X \rightarrow M_1$), $f^2 = .05$; for path b_1 ($M_1 \rightarrow Y$), $f^2 = .30$; for path a_2 ($X \rightarrow M_2$), $f^2 = .07$; and for path b_2 ($M_2 \rightarrow Y$), $f^2 = .16$ (Banas et al., 2020). However, it is worth noting that the analysis for mediation estimation is for a one-tailed test. Thus, an a priori power analysis was conducted and the results indicated with the alpha error probability fixed at .05 and desired power at .08, at least 170 participants are needed to detect this mediation effect.

Participants were recruited via two methods. The first one is recruiting students from a local university's research participation system in exchange for course credit. The second one is recruiting community members from either online platforms or prolific. Participants who completed the survey on prolific received 10 AUD as a reward. Eligible participants had to reside in Australia, be over 18 years old, come from an East Asian cultural background, identify as non-binary gender, have never been diagnosed with dementia. Of the 612 participants initially recruited, 68 were excluded for low survey completion, 10 for failing attention checks, 195 for not meeting the eligibility requirements, 22 for submitting duplicate responses, and 5 for not giving consent. The final sample ($N = 312$) comprised 48.7% university students and 51.3% community members. The sample included 66% female and 34% male.

Vicarious Contact Stimuli

Four versions of a 7-minute video were created, varying by actor gender (male vs. female) and ingroup membership status (student vs. community member). The scripts were developed to operationalise Allport's (1954) four facilitating conditions for prejudice reduction: equal status, common goals, cooperation, and authority support. Each script depicted an ingroup member and a person living with dementia collaboratively cooking in a community centre, under the guidance of a staff member. The videos were filmed in a community centre kitchen, where the ingroup and outgroup members worked together to prepare dumplings for a community event. Their interaction was guided by a staff member, ensuring authority support and facilitating cooperation. Throughout the interaction, the ingroup member and the person living with dementia prepared ingredients, shared cooking tips, and worked towards the common goal of making dumplings. At the conclusion, they expressed mutual appreciation and ate the dumplings together. The interaction was scripted to portray the relationship as balanced, respectful, and socially meaningful. Potential confounding variables were addressed at the design level where possible. In particular, cultural background was incorporated as a factorial variable, with culturally matched stimuli and random assignment conducted within cultural groups. This approach provides structural control through experimental design rather than relying solely on statistical adjustment. The Detailed rationale of this filming design is explained in Appendix I. Full scripts and links to the video stimuli are provided in Appendix K.

All actors were Asian. Actors were recruited on StarNow.com, a platform that connects filmmakers with actors for on-camera performances, as well as through local networks where East Asian actors could be reached. Selection criteria included gender, race, age group, and acting experience to match the experimental conditions across the relevant studies. Actors were compensated at an hourly rate of AUD $50. Prior to filming, the actors

attended a paid one-hour online briefing session to understand the study purpose, key messages to be conveyed in the scripts, behavioural expectations, custom expectations, and logistical arrangements for filming.

The East Asian stimulus condition included actors of Chinese, Taiwanese, and Japanese backgrounds. This approach was adopted to operationalise macro-level East Asian cultural matching, rather than nationality-specific matching, in order to examine culturally framed mediated contact effects at a broader cultural grouping level. To verify that the stimuli conveyed the intended cultural background, a pilot manipulation check was conducted (n = 18). Participants rated the extent to which they identified with the character's cultural background. Participants from Asian cultural backgrounds reported moderate identification, whereas participants not from Asian cultural backgrounds consistently reported no identification (i.e., the lowest point on a 7-point scale), supporting the validity of the cultural manipulation. Full details of the pilot procedure and results are provided in Appendix L.

Measures

All measures of dementia stigma were the same as Study 3. The Cronbach's α were .746 for negative attitudes, .802 for fear, .730 for anger, .669 for avoidance, and .756 for helping intentions.

Procedure

After providing informed consent via a Qualtrics survey link, participants first completed demographic questions. After that, participants were randomly assigned to either (a) a vicarious-contact condition, in which they viewed a 7-minute video featuring an ingroup model matched to their gender and membership status (student vs. community), or (b) a control condition with no video exposure. Following the experimental manipulation, participants completed the dependent measures, which assessed dementia stigma across five

domains: negative attitudes toward people living with dementia, fear, anger, avoidance, and helping intentions. Finally, participants were debriefed and thanked for their participation.

Data Analysis

Data were analysed using IBM SPSS Statistics (Version 30). After screening for missing data and checking assumptions, independent-samples t-tests were conducted to examine the effect of vicarious contact (experimental vs. control) on each of the five dementia stigma outcomes. This analytic approach was selected because the design involved a single experimentally manipulated independent variable with two levels, and the hypotheses (*H4*) focused on mean differences between groups across theoretically distinct stigma domains.

To examine the hypothesised mechanisms underlying contact effects (*H5*), mediation analyses were conducted using Hayes's (2012) PROCESS macro (Model 4). Intergroup anxiety and outgroup empathy were tested as parallel mediators of the relationship between vicarious contact and each stigma outcome. This approach was chosen to allow simultaneous estimation of indirect effects while accounting for the intercorrelation between mediators, consistent with theoretical models of stigma reduction that emphasise both affective (anxiety) and empathic processes. Indirect effects were evaluated using bias-corrected bootstrap confidence intervals (95%), with effects considered significant if the confidence interval did not include zero. This analytic strategy enables the identification of underlying psychological mechanisms beyond mean-level group differences, thereby providing a more process-oriented understanding of how vicarious contact influences dementia stigma.

Results

Main Effect of Vicarious Contact on Dementia Stigma Outcomes

The descriptive statistics and Pearson correlations between dementia stigma outcomes, mediators, and experimental condition are reported in Table 3. An independent samples t-test was conducted to examine the effect of vicarious contact for each of the five dementia stigma outcomes. The means and standard deviations of each group are reported in Table 4. The results showed that participants in the vicarious contact experimental group did not report significantly different levels of negative attitudes towards people living with dementia compared to the control group, t (310) = .723, p = .470, d = .79. However, compared to the control condition, the vicarious contact group reported significantly less fear, t (310) = 8.32, p < .001, d = 1.13, less anger, t (310) = 7.92, p < .001, d = 1.04, less avoidance, t (310) = 6.30, p < .001, d = 1.15, greater helping intentions, t (310) = -4.36, p < .001, d = 1.05. Therefore, *H4* is partially supported.

Intergroup Anxiety and Outgroup Empathy as Mediators of the Contact-Stigma Relationship

Using Hayes's (2012) PROCESS Macro (Model 4), we tested whether intergroup anxiety and outgroup empathy mediated the effect of vicarious contact on each dementia stigma outcome. As shown in Figure 1, the indirect effect of vicarious contact through outgroup empathy was not significant for any dementia stigma outcome: negative attitudes, B = .00, SE = .01, 95% CI [-.01, .01]; fear, B = .00, SE = .01, 95% CI [-.02, .02]; anger, B = .00, SE = .01, 95% CI [-.03, .03]; avoidance, B = .00, SE = .03, 95% CI [-.06, .06]; helping intentions, B = .00, SE = .04, 95% CI [-.09, .08].

Table 3

Descriptive Statistics and Pearson Correlations between Dementia Stigma Outcomes, Mediators, and Experimental Condition in Study 4

Variable	*M*	*SD*	1	2	3	4	5	6	7
1. Negative attitudes	2.82	.79	-						
2. Fear	2.24	1.24	.32**	-					
3. Anger	2.28	1.14	.33**	.75**	-				
4. Avoidance	4.00	1.22	.10	.23**	.32**	-			
5. Helping intentions	5.03	1.07	-.24**	-.34**	-.34**	-.43**	-		
6. Intergroup anxiety	3.11	.90	.29**	.41**	.41**	.37**	-.47**	-	
7. Outgroup empathy	4.72	1.00	-.13*	-.09	-.17**	-.28**	.44**	-.32**	-
8. Experimental condition [a]	.56	.50	-.04	-.43**	-.41*	-.34**	.24**	-.26**	.00

Note. N = 312. [a] 0 = experimental group, 1 = control group *$p < .05$. **$p < .0$

Table 4

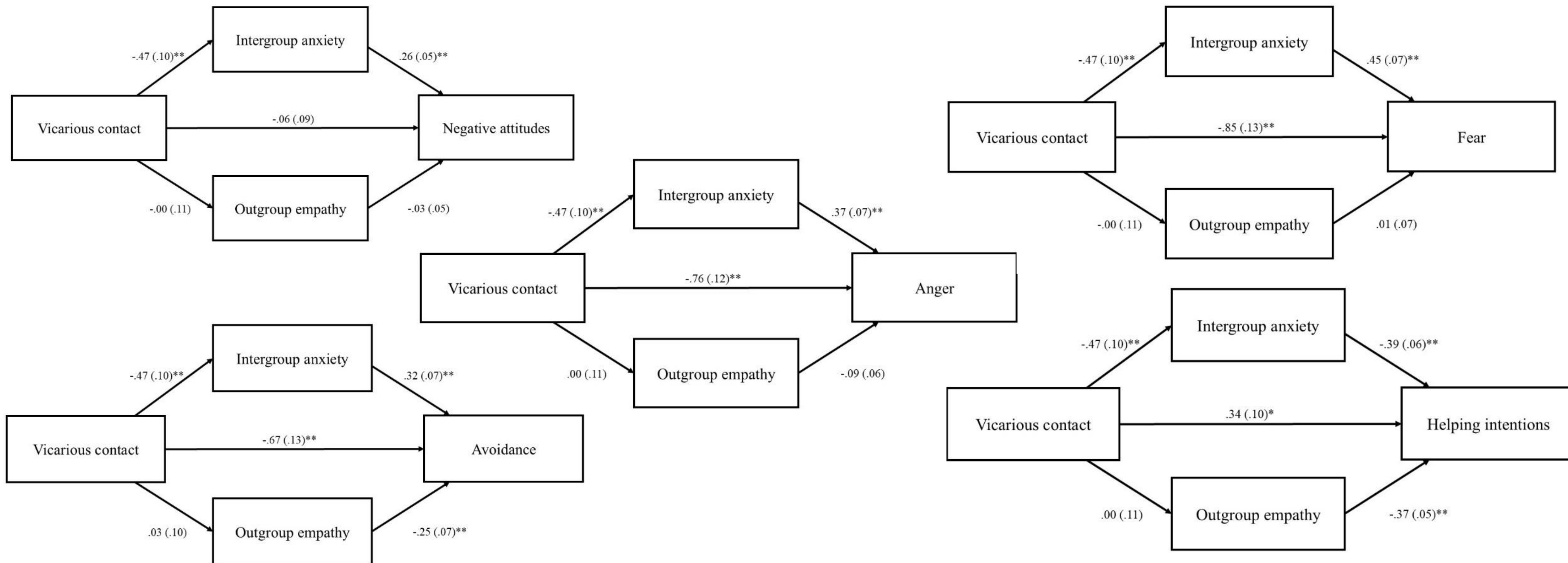
Means and Standard Deviations for Dementia Stigma Outcomes by Experimental Condition in Study 4

Outcome	Experimental Group	Control Group
	M (*SD*)	*M* (*SD*)
Negative Attitudes	2.79 (.79)	2.86 (.80)
Fear	1.77 (.97)	2.84 (1.22)
Anger	1.87 (.87)	2.81 (1.22)
Avoidance	3.62 (1.14)	4.44 (1.16)
Helping	5.25 (1.02)	4.73 (1.08)

Note. N = 312.

Figure 1

Mediation Model of the Effects of Intergroup Anxiety and Outgroup Empathy on the Dependent Variables.



Note. Path coefficients are unstandardised regression weights, with standard errors in parentheses. Indirect effects were tested using 5,000 bootstrap resamples.

However, significant indirect effects of vicarious contact through intergroup anxiety were observed for all five dementia stigma outcomes: intergroup anxiety , B = -.12, SE = .04, 95% CI [-.20, -.06]; fear, B = -.22, SE = .06, 95% CI [-.34, -.11]; anger, B = -.18, SE = .05, 95% CI [-.28, -.09]; avoidance, B = -.15, SE = .05, 95% CI [-.27, -.06], helping intentions, B = .18, SE = .05, 95% CI [.09, .29]. As shown in Figure 1, vicarious contact significantly reduced intergroup anxiety, and lower intergroup anxiety was associated with better outcomes: fewer negative attitudes, less fear, less anger, less avoidance, and higher helping intentions. The direct effect of vicarious contact on negative attitudes was not significant, indicating full mediation through reduced intergroup anxiety. The direct effect of vicarious contact on fear, anger, avoidance, and helping intentions was significant, indicating partial mediation by intergroup anxiety for these other dementia stigma outcomes. Therefore, *H5a* is supported but *H5b* is not supported.

Discussion

The present study showed that vicarious contact is significantly associated with lower fear, anger, avoidance, and increased helping intentions. For negative attitudes, vicarious contact was not found to yield a direct effect. Instead, vicarious contact appeared to reduce negative attitudes through decreased intergroup anxiety. This broad effect of vicarious contact supports the notion that by observing an ingroup member engage cooperatively with a person living with dementia, participants were presented with a behavioral script for interaction that highlighted shared goals, mutual support, and equal status. This observed positive interaction outcome can challenge existing negative stereotypes of people living with dementia of being incompetent, dependent, and hopeless (Ballenger, 2017), which are not culture-specific, having been documented in both Anglo-European and Asian populations (Herrmann et al., 2018; Low et al., 2010), and which ultimately appeared to reduce dementia stigma. Consistent with intergroup contact theory (Pettigrew & Tropp, 2008) and social learning

theory (Bandura, 2002), vicarious exposure not only associated with lower negative emotions such as fear and anger, but also encouraged prosocial responses, reflected in greater helping intentions. Taken together, vicarious contact is a promising strategy for stigma reduction.

The mediation analyses further revealed that intergroup anxiety accounted for the stigma-reducing effects of vicarious contact. This finding suggests that the primary benefit of vicarious contact may lie in providing a safe context to observe positive interactions with an outgroup member. For stigmatised groups that are often perceived as threatening or difficult to interact with, such as people living with dementia, reducing anticipatory anxiety may be a critical first step towards attitudes and behaviour change (White et al., 2021). Observing an ingroup member engage successfully with an outgroup member may also strengthen identification with the ingroup, thereby enhancing self-efficacy for managing future interactions with people living with dementia (Wong et al., 2022). Accordingly, vicarious contact functions as a practical entry point for engagement with threat-provoking outgroups by lowering anxiety and opening the door to subsequent stigma reduction.

However, outgroup empathy was not found to be a significant mediator. One possible explanation is that when perceivers observed the video interaction, they identified more strongly with the ingroup member and imagined themselves in the ingroup member's role, rather than taking the perspective of the person living with dementia. Consequently, the participants may not focus on identifying and feeling empathy for the outgroup member (Wong et al., 2022). The participant's focus of the vicarious experience may have been on modeling how an ingroup member successfully manages intergroup contact, which primarily reduced anxiety but did not substantially enhance empathy towards the outgroup member.

General Discussion

The present findings provide evidence of two indirect contact interventions, parasocial contact and vicarious contact, on dementia stigma reduction. Although a recent meta-analysis suggested that parasocial and vicarious contact are equally effective in reducing prejudicial attitudes (Banas et al., 2020), our results tentatively point to vicarious contact as more effective than parasocial contact in this context. In Study 3, a brief parasocial exposure was not associated with lower stigma and showed an ambivalent pattern (higher avoidance alongside higher helping), consistent with the idea that showing a person with dementia in isolation is insufficient to shift attitudes or emotions. It is possible that the stimulus may heighten awareness regarding the vulnerability of the target, instead of reducing dementia stigma. In Study 4, by contrast, vicarious contact video showing an ingroup model interacting cooperatively with a person with dementia, was associated with lower stigma across attitudinal (indirectly via reduced intergroup anxiety), emotional, and behavioral domains. This contrast underscores the importance of relational depth in indirect contact. Whereas parasocial contact provides one-sided exposure, vicarious contact models reciprocal, socially supported interaction, thereby increasing opportunities for identification, reducing anxiety, and providing behavioral scripts for positive engagement (Bandura, 2002; Schiappa et al., 2005; Wong et al., 2022). After observing these positive interactions, we believe that negative stereotypes were successfully challenged and replaced by counter-stereotyping messages in line with Dupuis et al. (2016) and Reynolds et al. (2017).

The more meaningful contact can also strengthen the perceiver's experience of transportation into the story. According to Green and Brock (2000), narrative transportation, the extent to which individuals become mentally and emotionally immersed in a mediated story world, facilitates identification with characters, enhances emotional engagement, and creates the illusion of direct experience, thereby amplifying a story's impact. When

perceivers experience higher levels of transportation, they are more likely to be persuaded by the positive narrative and less motivated to resist its implications (Slater & Rouner, 2002). Consistent with this, greater transportation has been shown to predict higher levels of affective empathy and increased willingness to engage in helping behavior (D. R. Johnson, 2012). Thus, vicarious contact with a clearer storyline can increase the immersive qualities of the narrative itself, which improves the effectiveness of stigma reduction, fosters empathy, and promotes prosocial intentions.

Related to narrative transportation, even one-sided video contact can be engineered to feel more immersive by adding interactive choice. For example, Kim et al. (2021), who labelled their design as virtual contact, asked participants to select questions about what it is like living with dementia, then presented the corresponding videos featuring a person living with dementia answering the selected questions. This adapted parasocial approach yielded a small immediate uptick in cognitive-related stigma that reversed over 12 weeks, with the reduction strongest for higher-stigma participants. The example suggests that engagement/immersion is a key factor to augment parasocial contact with interactive elements (and assessing outcomes over time) may improve stigma-reduction efficacy.

Beyond creating a positive contact experience, our vicarious contact video may have inadvertently challenged culturally specific stereotypes, a mechanism we did not directly measure. For Asian participants, who often report higher stigma linked to frequent but negative contact in caregiving/family settings (Pettigrew & Tropp, 2006; Wang et al., 2019), the vicarious contact script modeled equal status and cooperative interaction (Allport, 1954). The portrayal of the person living with dementia as capable of meaningful contribution within relational contexts may have aligned with dignity norms emphasising reciprocity and role continuity (Fu et al., 2008). Cultural value orientations are therefore considered here as contextual lenses that may shape interpretation of contact experiences, rather than as direct

causal explanations of stigma. In this sense, vicarious contact may have offered a counter-stereotypical interactional template that was processed differently across audiences compared with brief parasocial exposure.

Moreover, the severity of symptoms depicted in the stimuli may also be relevant to interpreting the present findings. The video vignettes primarily portrayed mild-to-moderate dementia symptoms, which may have limited the extent to which stigma-related responses were elicited. More severe or disruptive symptoms may evoke stronger reactions, particularly in domains such as fear or avoidance. However, prior research suggests that this relationship may not be straightforward. For example, Zhang and Cheng (2020) found that including disruptive behaviours did not necessarily increase stigma, indicating that stigma responses may not scale linearly with symptom severity. Taken together, these findings suggest that symptom severity may function as a boundary condition, influencing when and how stigma is elicited. The present findings should therefore be interpreted as most applicable to perceptions of individuals with mild-to-moderate dementia.

Limitations and Future Directions

First, the control conditions differed across the two studies. Study 3 compared parasocial contact with people living with dementia to a vignette of a healthy older adult. Study 4 compared vicarious contact to no exposure. Because contact effects can generalize (secondary transfer; Pettigrew, 2009), the healthy older adult control in Study 3 may have reduced stigma towards people living with dementia, making that comparison conservative. A similar pattern also appears in prior work. A similar pattern also appears in prior work. Narrative-based exposure has been shown to influence attitudes when contrasted with a condition without vignette exposure (Cheng et al., 2011), but not when contrasted with a healthy-older-adult control (M. L. O’Connor & McFadden, 2012).

Importantly, we conceptualise these vignette- and video-based manipulations as approximating parasocial contact, in that they involve mediated, one-sided engagement with a character. However, we acknowledge that brief exposure (e.g., a short vignette or a 5-minute video) may not fully elicit the depth of parasocial relationships typically described in the literature. Future research might therefore include stronger manipulations (e.g., repeated exposure or character development over time), as well as measures of perceived familiarity or connection with the character, to better capture parasocial processes. Additionally, future studies could include a vicarious condition in which the ingroup member interacts with a healthy older adult, allowing clearer comparisons between contact types.

Second, it is important to note that the overall dementia stigma was generally low across both studies. For example, the means of negative attitudes towards people living with dementia ranged from 1.93 to 2.33 on a 1-to-7-point Likert scale in Study 3, indicating relatively few stigmatising attitudes. Two factors may account for this pattern. The first is a measurement issue. Scores clustered near the bottom of our scale, which indicated a floor effect and suggested that our instrument may not capture subtle forms of dementia stigma despite its growing relevance (Herrmann et al., 2018; Low et al., 2010; Nguyen & Li, 2020). A floor effect limits detectable change, so any impact of parasocial or vicarious contact can appear attenuated.

Third, more work is needed to examine alternative mediators that could explain how indirect contact reduces stigma. For example, narrative transportation may reduce resistance to persuasive messages and foster empathy, so testing it as a mediator would clarify whether stigma change reflects engagement with the story or the content of the interaction itself (Green & Brock, 2000; Slater & Rouner, 2002). Similarly, cultural values can be directly assessed as mediators between indirect contact and stigma reduction outcomes. For example, Confucian values such as whether the contact interventions contribute to the older's image as

sharing knowledge, offering support, or contributing family and community life (Fu et al., 2008; Rothbaum & Xu, 1995). Measuring changes in these cultural interpretations would help clarify whether stigma reduction arises not only from general intergroup mechanisms but also from the reframing of culturally embedded role expectations. This culturally tailored approach also opens the door for researchers from diverse cultural contexts to adapt and test contact interventions that reflect their own social values and expectations. At the same time, consistent with recommendations on mediation testing (e.g., Maxwell & Cole, 2007), mediators in the present studies were positioned between stimulus exposure and outcome measurement; however, as both mediators and outcomes were assessed within the same session without substantial temporal separation, causal mediation inferences should be interpreted with caution. This highlights the need for future research employing longitudinal or temporally separated designs to more rigorously test mediation processes. This culturally tailored approach also opens the door for researchers from diverse cultural contexts to adapt and test contact interventions that reflect their own social values and expectations.

Considering that the global prevalence of dementia is projected to rise most dramatically in regions such as North Africa and the Middle East (Nichols et al., 2022), future work should examine how contact strategies can be aligned with local cultural frameworks. Designing interventions that both reflect and challenge culturally embedded interpretations of aging and cognitive decline would not only enhance their effectiveness but also increase their global relevance.

One limitation of the present studies is that the stimuli depicted relatively mild-to-moderate dementia symptoms. As a result, the findings may not generalise to perceptions of individuals with more severe or disruptive symptoms, which may elicit different stigma responses.

Another limitation of the present studies concerns the operationalisation of cultural background within the experimental design. Although cultural background was incorporated as a quasi-experimental factor through matching participants to culturally congruent stimuli, this approach necessarily simplifies complex and heterogeneous cultural identities. Participants categorised as Anglo-European or Asian may differ substantially in terms of acculturation, cultural identification, language use, migration history, and generational status, none of which were directly measured in the present studies. As a result, the observed effects should not be interpreted as reflecting uniform cultural characteristics, but rather as indicative of broader cultural meaning systems that may shape responses to dementia. Furthermore, the use of culturally matched stimuli captures one aspect of cultural relevance but does not fully account for the multidimensional nature of culture. Future research should incorporate more fine-grained and multidimensional assessments of cultural orientation to better understand how specific cultural mechanisms influence the effectiveness of contact-based interventions.

Finally, although random assignment strengthens internal validity in the experimental design, the study remains subject to self-selection at the recruitment stage. Participants voluntarily enrolled in a study examining social perceptions, which may attract individuals more receptive to attitudinal change or more interested in psychological research. Such pre-existing openness may influence responsiveness to mediated contact interventions and may partially explain the magnitude or direction of observed effects. While randomisation ensures equivalence between conditions, it does not eliminate the possibility that the overall sample differs from the broader population in baseline stigma or change-readiness. Accordingly, the findings should be interpreted as reflecting intervention effects within a volunteer sample, and future studies using broader recruitment frames would enhance generalisability.

Implications and Conclusions

The findings of the present research make several important contributions to existing literature. First, this thesis developed theory-informed indirect contact interventions and provides evidence that such approaches may be associated with lower levels of dementia stigma. Using structured interactions presented in a video format, the results indicate that vicarious contact is associated with reduced stigma-related responses. From an applied perspective, these findings suggest that vicarious contact may represent a promising strategy for dementia stigma reduction. By depicting people living with dementia as capable individuals engaged in positive, cooperative interactions, such interventions may help challenge stereotypes of vulnerability, highlight retained competence, and reframe dementia in ways that align with relevant cultural values. Accordingly, these approaches may have potential for adaptation in dementia awareness campaigns, educational contexts, and healthcare training programs.

Second, while our results showed that vicarious contact tend to be more effective than parasocial contact, it is worthwhile noting that the production of vicarious contact interventions is also resource-intensive, as it requires careful matching between the ingroup member portrayed in the video and the demographic characteristics of the perceivers (e.g., gender, cultural background, membership status) (Wright et al., 1997). This tailoring increases production costs and limits scalability, as multiple versions of the same intervention may need to be developed for different audiences, limiting our ability to produce videos with a healthy adult in the current study. By contrast, parasocial contact may be easier and less costly to implement at scale, since it typically involves a single outgroup member without the need for matching. Thus, while vicarious contact may offer stronger stigma-reduction effects, future research should explore ways to balance efficacy with feasibility, potentially by

combining the structured benefits of vicarious contact with the scalability of parasocial approaches.

Together this research demonstrates that indirect contact can be an effective tool for reducing dementia stigma, but its impact will depend on how the contact is experienced. By contrasting parasocial and vicarious contact approaches, our studies underscore the importance of relational depth, cultural sensitivity, and psychological mechanisms such as intergroup anxiety in driving stigma reduction. As dementia prevalence continues to rise globally, developing evidence-based, culturally informed contact interventions will be critical for reducing stigma and improving the social inclusion of people living with dementia.

CHAPTER 5

General Discussion: Synthesis of findings, Limitations, Future Directions and Conclusion

As discussed throughout this thesis, dementia and dementia stigma is a rising concern in modern society with ageing population (The World Health Organization, 2015). However, empirical research examining the processes underlying dementia stigma and evaluating potential strategies to reduce it remains relatively limited. Across the chapters presented in this thesis, the primary aim has been to examine dementia stigma from a theory-driven perspective and to evaluate the role of indirect contact-based approaches in shaping stigma-related responses.

To achieve this goal, this thesis first outlines a conceptual framework for understanding dementia stigma (Chapter 2), then identifies key predictors associated with stigma (Chapter 3), and finally evaluates two forms of indirect contact, parasocial and vicarious contact, in relation to cognitive, emotional, and behavioural stigma outcomes (Chapter 4). This final chapter summarise the main findings, integrates the theoretical and empirical contributions, and discusses limitations, future directions, and implications for research and practice.

Synthesis of Findings

The integrative review in Chapter 2 evaluated key stigma theories and their relevance to the manifestation of dementia stigma. In our proposed model (see Figure 1 on p.14), it was posited that dementia stigma operates through cognitive, emotional, behavioural, and cultural dimensions. Our review demonstrated that these dimensions influence each other and can lead to a cycle of stigma formation. Regarding this, we evaluated current dementia stigma

interventions, mainly focused on contact and education strategies. We also highlighted that the focus of these interventions should be tailored to the the recipient's cultural values.

Building upon this theoretical framework, Chapter 3 (Study 1 and Study 2) identified the predictors of dementia stigma using text-based and video-based vignettes. We found that lower dementia knowledge, lower contact quality with older people or people living with dementia, identifying as male than female, being a student than community member, and identifying as Asian than Anglo-European are significant associated with higher dementia stigma. Among these predictors, contact quality with older people and participant's cultural background uniquely predicted dementia stigma across both studies, highlighting the importance of using contact strategy and culturally tailoring design to the population who hold higher dementia stigma, participants from Asian cultural background.

Finally, integrating the insights from the review and the results from Study 1 and Study 2, Chapter 4 (Study 3 and Study 4) evaluated the effectiveness of parasocial contact and vicarious contact in reducing dementia stigma. Our findings showed that parasocial contact with people living with dementia elicited greater avoidance and greater helping intentions, but it did not associate with lower negative attitudes toward people living with dementia. Meanwhile, Asian participants consistently reported higher dementia stigma than their Anglo-European counterparts. To address the Asian group who hold higher dementia stigma, vicarious contact testing on Asian participants only structured under Allport (1954)'s facilitating conditions associated with lower dementia stigma across attitudinal, emotional, and behavioural domains. Decreased intergroup anxiety, but not outgroup empathy, was also found to be a significant mediator between this contact-prejudice relationship. This evidence showed that indirect contact, especially structured vicarious contact, is a particular effective intervention to dementia stigma.

Integrating the theoretical and empirical components of this thesis, the findings support and extend the theoretical framework of dementia stigma proposed in Chapter 2. In the four sections that follow, I examine each pathway in turn, showing how the empirical studies substantiate and connect them.

Cognitive Pathways

Drawing on the theoretical framework, one cognitive pathway of dementia stigma is social categorisation. Because dementia is treated as a medical label, people living with cognitive decline are often associated with dependence (Burgener, Buckwalter, Perkhounkova, Liu, et al., 2015), a view that is reinforced by negative media portrayals (Low & Purwaningrum, 2020). To challenge this, Chapter 4 examined indirect contact strategies with positive portrayals. In the narrative of the parasocial contact stimuli, the portrayed person living with dementia have their own life experience, personality, hobby, and family life. In the parasocial videos, the person living with dementia is shown as an individual with life history, personality, hobbies, and family relationships, with the narrative foregrounding capabilities rather than symptoms. In the vicarious videos, the person living with dementia and the ingroup member volunteer together in a community setting with equal status and shared goals. This equal footing and cooperative activity offer an alternative schema and challenge stereotypes of dependence and loss of agency.

In Chapter 3, dementia knowledge was found to be a significant predictor of stigma when participants read text-based vignettes, but its unique contribution diminished when they viewed video-based vignettes. On a practical level, this finding suggests that the media format when portraying the outgroup member can shape participants' responses and the sources of judgment they draw upon; researchers should therefore attend to stimulus modality when designing studies, interpreting effects, and comparing findings across research studies.

Emotional Pathways

In the vicarious contact study (Study 4), intergroup anxiety emerged as the key mediator to improve dementia stigma, whereas outgroup empathy did not. This pattern suggests that this indirect contact intervention can successfully reduce intergroup anxiety because the participants can observe the outgroup member in a safe environment (White et al., 2021). By lowering anxiety, vicarious contact makes approaching stigmatised outgroups feel possible and opens the door to attitudinal change. Empathy may not have shifted because viewers may have primarily identified with the ingroup model and focused on how to act rather than on understanding how the outgroup target feels. This possibility will require examination in future research. It may also be related to the script of the vicarious contact did not elicit sustained perspective taking. For example, the person living with dementia did not share much on their lived experience as living with dementia in the video.

Behavioural Pathways

We noted in Chapter 2 that dementia stigma can arise from lack of contact or from negative contact. Interventions should be matched to these potential predictors. For people with little opportunity for direct interaction, mere exposure to the outgroup can help by making the group more familiar and less threatening (Schiappa et al., 2005). By contrast, when stigma reflects prior negative experiences, simple exposure is unlikely to shift entrenched beliefs. In these cases, participants may need positive, cooperative interactions that invite reflection on assumptions and show clear examples of capability and reciprocity, such as structured vicarious contact built around equal status, shared goals, and supportive norms (e.g., Harris & Caporella, 2014; Reynolds et al., 2017). Future research can test whether this tailored approach links the source of stigma to the intensity and content of the intervention.

Cultural Pathways

The framework reviewed in Chapter 2 considers dementia stigma as a product of cognitive, emotional, and behavioural pathways that are embedded in cultural norms and language. It also proposes a reciprocal process, where every-day behaviours shape what is seen as normal, and over time, these practices shift and shape cultural meanings. The Chinese naming case illustrates this point. In the Chinese language, the label dementia is commonly known as "Lao Ren Chi Dai Zheng (老人癡呆症)", which means "older people's insane and idiotic disorder". However, this name has been accused of generating greater undignified and shameful stigma, and inaccurately describes the disease (Chiu et al., 2014; Liu et al., 2008). Since 2010, several new Chinese terms such as the term "brain degenerative disorder (腦退化症)", "cognitive impairment syndrome (認知障礙症)", which means cognitive disorder, were promoted to replace the old term in Mainland China and Hong Kong (Chiu et al., 2014). However, the renaming was not successful, partly due to the unsupportive attitude from the government (The Hong Kong Government, 2015), as well as the higher stigma towards people living with dementia among Chinese populations (Herrmann et al., 2018; Low et al., 2010). The end result is that the shameful naming of dementia, "older people's insane and idiotic disorder", is still continued to perpetuate the negative stereotype of dementia.

In this light, Dementia Australia has begun using the term "cognitive impairment syndrome (認知障礙症)" in Chinese-language materials (Dementia Australia, 2025). Recent initiatives such as Facing Dementia Together campaign is also actively promoting this terminology among Chinese speakers in Australia while aiming to improve the accuratcy of Chinese-language information on dementia, an area previously noted for variable quality (Hall, 2024; Tsiang & Woo, 2017). Renaming, coupled with sustained public education, culturally tailored messaging, and opportunities for positive contact with people living with

dementia, may reduce dementia stigma among Chinese-speaking communities. Future research could examine who adopts new terminology and why and what is the impact of using the new terminology on cognitive and emotional domains of dementia stigma.

The cultural frameworks discussed in this thesis, including Confucian value traditions and filial-role expectations, are interpreted as contextual meaning systems rather than fixed personal attributes. Value endorsement may vary substantially across individuals, generations, and diaspora contexts, and may be shaped by acculturation, migration experience, language environment, and social exposure. Because individual-level cultural orientation and acculturation measures were not directly collected, cultural findings should be interpreted at a broad framework level rather than as subgroup-specific effects. Future research should incorporate finer-grained cultural and acculturation measures to further differentiate within-group variation.

Theoretical Contributions

his thesis makes several original contributions to the literature on intergroup contact and dementia stigma reduction. While it employs established methodological approaches, including indirect contact interventions and vignette-based designs, its originality lies in the theory-driven integration, operationalisation, and comparative testing of these approaches within a unified framework, rather than in proposing an entirely new contact method.

First, the thesis extends intergroup contact theory by systematically applying indirect contact frameworks, specifically parasocial and vicarious contact, to dementia stigma, an area that has received comparatively limited theoretical and empirical attention. Prior research has predominantly focused on direct contact or generalised stigma domains (e.g., Bacsu et al., 2022), whereas the present work demonstrates how mediated forms of contact can be

theoretically grounded and empirically tested within a dementia-specific context, thereby broadening the scope and applicability of contact-based interventions.

Second, this thesis contributes to the conceptualisation of parasocial contact by critically examining its operationalisation in experimental settings. The findings highlight that brief, one-off exposures (e.g., short video vignettes) may not fully capture the depth of parasocial relationships described in the literature, suggesting that parasocial contact is better understood as a continuum of engagement rather than a binary construct. This refines existing theory by challenging the implicit assumption that exposure to media characters is sufficient to elicit parasocial processes.

Third, the thesis advances understanding of boundary conditions of contact effects, particularly in relation to stimulus characteristics and contextual factors. The findings suggest that factors such as the nature of the comparison condition (e.g., healthy older adult vs. no exposure) and the severity of symptoms portrayed may influence the extent to which stigma is elicited and reduced. This supports a more conditional view of contact effects, aligning with emerging perspectives that emphasise the role of context and interpretation rather than assuming uniform effectiveness. Importantly, this thesis extends prior work by embedding Allport's (1954) facilitating conditions within indirect mediated contact formats and examining theoretically motivated variations in contact structure, such as cooperative versus mere-exposure, media formats and the nature of the comparison condition. While factors such as portrayed severity, and exposure duration were not systematically manipulated, the present findings provide a foundation for future research to examine how these dimensions influence stigma-reduction outcomes. To the best of my knowledge, prior dementia stigma studies have not explicitly integrated these theoretically grounded contact conditions within a unified framework.

Fourth, this research contributes to the growing literature on cultural variation in stigma by demonstrating that cultural background is associated with differential stigma responses across multiple domains. By integrating cultural background as a quasi-experimental factor, the thesis highlights the importance of considering sociocultural context in both the manifestation of stigma and the effectiveness of contact-based interventions. This extends contact theory beyond its traditionally Western focus and underscores the need for culturally sensitive applications.

Finally, the thesis contributes to the literature by examining different forms of indirect contact, showing that parasocial and vicarious contact may not operate equivalently across stigma domains. Although these forms of contact were not directly compared within a single experimental framework, the findings provide comparative insights across studies into how different indirect contact approaches function. This theory-driven approach offers a more fine-grained understanding of indirect contact processes, moving beyond the assumption that all contact-based strategies are interchangeable. Collectively, these contributions refine and specify contact-based stigma reduction theory in the context of dementia by identifying key mechanisms, boundary conditions, and design considerations.

Limitations and Future Directions

Across the empirical studies, potential confounding variables were addressed through statistical and design-based control. In Chapter 3, regression models included theoretically relevant covariates (e.g., contact quality, gender, dementia knowledge, and membership status), allowing for adjusted estimation of predictor effects. In Chapter 4, key background variables were incorporated into the experimental design, including cultural background and membership status, with culturally matched stimuli and within-group random assignment providing structural control.

However, not all potentially relevant demographic variables (e.g., migration history, language proficiency, or detailed age-related factors) were measured across studies. These factors may influence stigma-related responses through differences in cultural experience, contact opportunities, or communication patterns. As such, the findings should be interpreted with appropriate caution, particularly when considering cultural effects, and future research should incorporate more fine-grained measures of demographic and cultural variation.

A related limitation concerns the conceptualisation and measurement of cultural background. Although cultural differences were consistently observed across studies, cultural background was operationalised using broad categorical groupings (e.g., Anglo-European vs. Asian), which necessarily simplify complex and heterogeneous identities. Factors such as acculturation, cultural identification, language use, migration history, and generational status were not directly measured, limiting the ability to identify the specific mechanisms underlying observed differences. As such, these findings should not be interpreted as reflecting uniform or essentialised cultural characteristics, but rather as indicative of broader cultural meaning systems that may shape dementia-related stigma. Future research should adopt more nuanced and multidimensional approaches to cultural measurement to better capture within-group variability and clarify how specific cultural orientations interact with contact-based stigma reduction processes.

A potential limitation across the present studies is the risk of self-selection bias. Participants who chose to take part in research related to dementia may have been more interested in the topic, more empathetic, or more likely to have prior positive contact with people living with dementia. As a result, the sample may have been systematically skewed towards individuals with more favourable attitudes, leading to lower baseline levels of dementia stigma. This restricted variability may have attenuated the observed effects and reduced the capacity to detect stronger intervention impacts. Consequently, the findings

should be interpreted with caution, as they may not fully generalise to populations with higher baseline stigma or lower intrinsic motivation to engage with dementia-related content. Future research should aim to mitigate self-selection bias by employing more diverse recruitment strategies, including less topic-salient sampling frames or mandatory participation pools, to better capture a broader range of attitudes.

A limitation of this thesis is that we did not examine how knowledge-focused education might reduce dementia stigma. Promising approaches include making common stereotypes explicit and explaining why they are inaccurate, engaging participants in active exercises that challenge those beliefs, and prompting structured personal reflection to reconsider prior assumptions (Dupuis et al., 2016). Such deep reflection could also potentially reduce dementia stigma but was beyond the scope of this thesis. Future research can investigate how different education strategies increase knowledge, stereotype endorsement, and perceived capability and autonomy of people living with dementia to determine how knowledge-based intervention can reduce dementia stigma.

Dementia knowledge was found to be a significant predictor in text-based vignette, but its unique influence is attenuated in video-based vignette. This suggests that the media formats may shape participants' responses and the cues they rely on when forming judgments. Although prior theory links reading to more analytic processing (List & Ballenger, 2019) and video to richer visual and social cues that lead to a more immersive experience (Green & Brock, 2000), the current studies did not examine the mechanisms underlying these differences. Future research could investigate potential processes such as narrative transportation, the degree of engagement with the stimulus (Green & Brock, 2000), and the effect of Allport (1954)'s contact facilitating conditions, which may also influence how participants evaluate and respond to people living with dementia across different media formats.

An additional mechanism that may help explain the tendency for older adults to report higher levels of stigma toward people living with dementia is perceived personal vulnerability. For older participants, exposure to dementia-related stimuli may heighten awareness of their own susceptibility to cognitive decline, thereby activating self-protective distancing responses (Shimizu et al., 2023). This interpretation aligns with the construct of dementia worry discussed in Chapter 2 (pp. 15-16), which captures self-focused anxiety regarding one's own potential cognitive deterioration. Although the present empirical studies focused on other-directed stigma processes (i.e., public stigma toward people living with dementia) and therefore did not measure dementia worry directly, it is plausible that self-focused threat responses may indirectly shape public stigma expressions, particularly among older adults. Psychological distancing or increased avoidance may function as a defensive mechanism to manage existential or identity-related threat. Future research would benefit from integrating both self-directed and other-directed stigma processes within a unified model to clarify how perceived personal vulnerability interacts with public stigma mechanisms across age groups.

Moreover, in evaluating the effectiveness of contact strategies, we also did not test the mediators such as intergroup anxiety and outgroup empathy in the parasocial contact study, a limitation that future research can address. Our results suggest that mere exposure to person living with dementia may be too superficial to change participant's attitudes towards people living with dementia, however the mechanism for why this is the case remains unclear. Other than the abovementioned mediators that have been widely identified in common prejudice research (Banas et al., 2020; Pettigrew & Tropp, 2008), the context-specific emotions, dementia worry and shame, are not explicitly measured in the current study. Among these two emotions, dementia worry is a self-focused emotion, and shame is an others-focused emotion. In theory, negative self-focused emotion can improve when public stigma is reduced (Vogel et al., 2007, 2013). As for shame, because it is a culturally-embedded concept (Chefetz, 2017),

more qualitative research will need be conducted to investigate this more complex emotional aspect of dementia stigma.

While contact interventions often work best for individuals high in prejudice who have low outgroup contact (Hodson & Busseri, 2012; Schiappa et al., 2005), it is unsafe to assume that all members of a cultural minority uniformly hold high levels of dementia stigma due to a single factor (e.g. lack of contact or negative contact). In fact, contact quantity and valence can differ substantially by migration history and generational status. For example, first-generation immigrants often leave their older parents in their home country (Miyawaki & Hooyman, 2023), whereas later-generation individuals may experience more frequent interaction (Britton, 2013). Within generations, family living arrangements and caregiving norms may differ due to socioeconomic pressures, urbanisation, or shifting value endorsement (Baldassar, 2007; S. H. Chen & Zhou, 2019). Together, these variations produce a diversity of dementia-relevant contact experiences within a cultural minority, emphasising the need for nuanced measurement of contact quality, frequency, and normative values (e.g., collectivist-individualist orientations, and filial piety) when predicting stigma. Accordingly, stigma formation is likely shaped by multiple intersecting influences rather than a single cultural dimension.

Conclusion

This thesis developed and evaluated innovative and theory-driven contact strategies to reduce dementia stigma. Chapter 2 reviewed the literature on cognitive, emotional, behavioural, and cultural dimensions of dementia stigma. Guided by that framework, Chapter 3 identified those most at-risk of holding stronger dementia stigma. The findings revealed that lower dementia knowledge, poorer contact quality with older adults or people living with dementia, being male rather than female, being a student rather than a community member,

and identifying as Asian rather than Anglo European were all associated with higher levels of dementia stigma. Of these, contact quality and cultural background consistently predicted stigma across both text-based and video-based vignettes studies, highlighting the value of contact focused and culturally tailored interventions. Chapter 4 then evaluated two indirect contact strategies: a brief parasocial clip produced an ambivalent pattern, with higher avoidance alongside higher helping intentions, and did not reduce overall dementia stigma; in contrast, a vicarious video, designed around Allport's facilitating contact conditions showed direct associations with lower emotional and behavioural stigma (lower fear/anger/avoidance; higher helping intentions). Mediation analyses showed that lower intergroup anxiety accounted for improvements across all outcomes; for attitudes the association was entirely indirect via intergroup anxiety, whereas for fear, anger, avoidance, and helping intentions, intergroup anxiety partially mediated the direct associations.

Together, this thesis has shown that indirect contact strategies that integrate Allport's (1954) facilitating conditions of equal status, shared goals, cooperation, and support from authority, within the appropriate cultural context, provide the best outcomes for reducing dementia stigma. Practically, these findings point to clear design principles for campaigns, education, and health training. Relating this back to the Hong Kong author's experience described in the opening paragraph of this thesis, if she could have the opportunity to maintain cooperative and supportive contact with her family and friends, as shown by the social interventions developed and tested in this thesis, she could potentially live a life with much greater hope and dignity. By linking a broad theoretical review to four empirical studies, this thesis provides a first-hand and integrated account of when indirect contact works, for whom it works best, and why it works, and offers a foundation for building scalable, culturally informed interventions that provide support for people living with dementia.

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Appendix A

Study 1: Ethics Approval Letter

Research Integrity & Ethics Administration
HUMAN RESEARCH ETHICS COMMITTEE

Monday, 22 August 2022

Prof Fiona White
Psychology; Faculty of Science
Email: fiona.white@sydney.edu.au

Dear Fiona,

The University of Sydney Human Research Ethics Committee (HREC) has considered your application.

I am pleased to inform you that after consideration of your response, your project has been approved.

Details of the approval are as follows:

Project No.: **2022/562**
Project Title: **Ageism attitude and dementia attitude**
Authorised Personnel: **White Fiona; Naismith Sharon; Wan Cheuk;**
Approval Period: **22/08/2022 to 22/08/2026**
First Annual Report Due: **22/08/2023**

Documents Approved:

Date Uploaded	Version Number	Document Name
15/08/2022	version 2	Participant Consent Form (Sample 1) clean version
15/08/2022	version 2	Participant Consent Form (Sample 2) clean version
15/08/2022	version 2	Pilot Study Participant Consent Form
15/08/2022	version 2	Pilot Participant Information Statement
15/08/2022	version 2	Participant Information Statement (Sample 1) clean version
15/08/2022	version 2	Participant Information Statement (Sample 2) clean version
15/08/2022	version 2	Pilot Debriefing Statement
15/08/2022	version 2	Debriefing statement (Sample 2) clean version
15/08/2022	version 2	Debriefing statement (Sample 1) clean version
15/08/2022		Poster (Sample 2) clean version
15/08/2022		SONA and community word advertisements (clean version)
15/08/2022		Main study measures (clean version)
15/08/2022		Pilot study measures

Special Condition/s of Approval

1. The consent form currently includes a field where participants enter their name. As data are stated to be anonymous, the researchers need to remove this field from the consent form (such that they are not recording names linked to responses, as this is identifiable information)

2. There are some grammatical errors in the recruitment materials, and these should be fixed. a) The abstract contains the phrase "factors associated with dementia attitude" (should this be attitudes? b) SONA ad 2 has the following text repeated twice ("This study will ask your life experiences with elderly people, people with dementia, and general knowledge about dementia"). c) Both of the SONA ads and the text for the community ad contain the phrase "This study will ask your life experiences with elderly people...". Is there a word missing, such that this should be "This study will ask about your life experiences..."

3. REMINDER: Please ensure that you add the HREC approval number [2022/562]] to the footer of all documents that participants might receive/download (such as the PIS and debrief), and to the final point of the PIS.

Condition/s of Approval

- Research must be conducted according to the approved proposal.
- An annual progress report must be submitted to the Ethics Office on or before the anniversary of approval and on completion of the project.
- You must report as soon as practicable anything that might warrant review of ethical approval of the project including:
  - Serious or unexpected adverse events (which should be reported within 72 hours).
  - Unforeseen events that might affect continued ethical acceptability of the project.
- Any changes to the proposal must be approved prior to their implementation (except where an amendment is undertaken to eliminate *immediate* risk to participants).
- Personnel working on this project must be sufficiently qualified by education, training and experience for their role, or adequately supervised. Changes to personnel must be reported and approved.
- Personnel must disclose any actual or potential conflicts of interest, including any financial or other interest or affiliation, as relevant to this project.
- Data and primary materials must be retained and stored in accordance with the relevant legislation and University guidelines.
- Ethics approval is dependent upon ongoing compliance of the research with the *National Statement on Ethical Conduct in Human Research*, the *Australian Code for the Responsible Conduct of Research*, applicable legal requirements, and with University policies, procedures and governance requirements.
- The Ethics Office may conduct audits on approved projects.
- The Chief Investigator has ultimate responsibility for the conduct of the research and is responsible for ensuring all others involved will conduct the research in accordance with the above.

This letter constitutes ethical approval only.

Please contact the Ethics Office should you require further information or clarification.

Sincerely,

Chair
Psychology Review Committee (Low Risk)

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2018) and the NHMRC's Australian Code for the Responsible Conduct of Research (2018)

Modification 1

Research Integrity & Ethics Administration
HUMAN RESEARCH ETHICS COMMITTEE

Thursday, 27 October 2022

Prof Fiona White
Psychology; Faculty of Science
Email: fiona.white@sydney.edu.au

Dear Fiona,

Your request to modify this project, which was submitted on 20/10/2022, has been considered.

This project has been approved to proceed with the proposed amendments.

Protocol Number: **2022/562**
Protocol Title: **Ageism attitude and dementia attitude**
Annual Report Due: **22/08/2023**

Documents Approved:

Date Uploaded	Version Number	Document Name
16/10/2022	Version 2	Modified Questionnaire clean

FOR NOTING

Please ensure that version numbers and dates are updated in the footer of the documents. This allows identification of original, updated, and approved versions and to assist the committee in any future modification requests. The document name and version number will be included in your ethics approval letter to ensure they are clearly referenced.

Please contact the ethics office should you require further information.

Sincerely,

Associate Professor Carolyn Maccann
Chair
Psychology Review Committee (Low Risk)

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2018) and the NHMRC's Australian Code for the Responsible Conduct of Research (2018)

Modification 2

Research Integrity & Ethics Administration
HUMAN RESEARCH ETHICS COMMITTEE

Friday, 20 January 2023

Prof Fiona White
Psychology; Faculty of Science
Email: fiona.white@sydney.edu.au

Dear Fiona,

Your request to modify this project, which was submitted 05/12/2022, has been considered.

After consideration of your response to the comments raised, this project has been approved to proceed with the proposed amendments.

Protocol Number: **2022/562**
Protocol Title: **Ageism and dementia attitude**

Annual Report Due: **22/08/2023**

Documents Approved:

Date Uploaded	Version Number	Document Name
18/01/2023	Version 3	Participant Information Statement (prolific) clean version
18/01/2023		Prolific advertisement_clean
09/01/2023		Email template to aged-care facilities_clean
09/01/2023	Version 3	Consent form_clean
09/01/2023	Version 3	Debriefing statement_clean
09/01/2023	Version 3	Information statement_community_clean
09/01/2023		Poster (Sample 2) clean version
09/01/2023		Questionnaire measures_clean

Please contact the ethics office should you require further information.

Sincerely,

Associate Professor Carolyn Maccann
Chair
Psychology Review Committee (Low Risk)

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2018) and the NHMRC's Australian Code for the Responsible Conduct of Research (2018)

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Appendix B

Study 1 Participant Information Statement, Consent Form, and Debriefing Statement

B1. Student Sample Version

Participant Information Statement

Students

Pilot Study: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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1. What is this study about?

We are conducting a research study about the factors associated with attitude towards dementia and to discover the relationship between attitudes towards elderly people and people with dementia. The research results will provide a foundation for future studies on investigating attitude towards elderly people and people with dementia.

Participation Information Statement tells you about the research studies. Knowing what is involved will help you decide if you want to take part in this study. Taking part in this study is voluntary. Please read this sheet carefully and ask questions about anything that you do not understand or want to know more about.

By giving your consent to take part in these studies you are telling us that you:

✓ Understand what you have read.
✓ Agree to take part in the research studies as outlined below.
✓ Agree to the use of your personal information as described.

2. Who is running the study?

The study is being carried out by the following researchers:

- Professor Fiona White, Professor, School of Psychology, Faculty of Science, University of Sydney
- Professor Sharon Naismith, Leonard P Ullman Chair in Psychology, School of Psychology, Faculty of Science, University of Sydney
- Miss Cheuk Yue Wan, PhD student, School of Psychology, Faculty of Science, University of Sydney

Miss Cheuk Yue Wan is conducting this study as partial basis for the degree Doctor of Philosophy (Science) at The University of Sydney. This will take place under the supervision of Professor Fiona White, Chief Investigator and Professor Sharon Naismith, Co-investigator.

3. Who can take part in the study?

We are seeking participants who are over 18 years old, fluent in English, living in Australia, and never been diagnosed with dementia. People who have been diagnosed with dementia are excluded because this research aims to investigate how other people view people with dementia. You would also be required to comprehend all the information.

4. What will the study involve for me?

If you decide to take part in this study, you will be asked to complete an online survey by answering the questions listed. It will take approximately 15 minutes to complete the survey. You can complete the survey anywhere and anytime from your digital device with online services. Answering all questions in one time is not necessary, instead, you can revisit the same link to continue your unfinished survey because the online survey tool will automatically record your answer progress for 7 days. This study will ask your subjective views towards dementia. Then you will be presented a story. You will report your subjective views and emotions towards the target person described in the story. A sample question includes, "I would feel pity for the person".

There will not be any audio/video/photographs/other recording involved. You are free to withdraw from this study at any time. You can choose to receive a lay summary of the research results at the end of the survey.

These studies should take approximately 15 minutes. This includes reading the Participant Information Statement and the full debrief of these studies at the conclusion of the survey. Everything will be kept confidential and anonymous.

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. If you decide to take part in the study and then change your mind you can withdraw by stopping responding to the survey and closing your web browser before your submission. Should you decide to withdraw from the survey, you will not be eligible to the 0.25 course credit points (equivalent to 15 minutes) for your undergraduate psychology unit.

By submitting your survey, you consent to take part in the study. You can withdraw any time before you submit. At the end of the study, after reading the debrief statement, you will have a final opportunity to withdraw from the study. However, once your responses are submitted, they cannot be withdrawn. This is because they are anonymous, and we will not be able to tell which one yours is.

6. Are there any risks or costs?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in these studies. Nonetheless, you can withdraw at any point in the studies with no consequence. You will also have an opportunity to withdraw your response after the debrief at the end of the studies.

While answering the questions on this online survey, you may experience feelings of emotional and social distress. However, the likelihood and severity of experiencing this will be low to moderate. If you feel any social distress after completing the survey, you can voluntarily withdraw anytime during the survey by closing the web browser. You can also contact the University of Sydney's Counselling and Psychological Services (CAPS) by phone: (02) 8627 8433 or (02) 8627 8437; or by email: counselling.service@sydney.edu.au. CAPS is located on Level 5 of the Jane Foss Russell Building (G02).

7. Are there any benefits?

Students that complete the two study will receive 0.25 course credit points (equivalent to 30 minutes) for your undergraduate psychology unit.

Other than credit points, we cannot guarantee that you will receive any other direct benefits from being part of the studies. Nevertheless, students may benefit from being exposed to first-hand psychological research.

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. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

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 as part of a PhD thesis to be submitted to the School of Psychology, University of Sydney. This may also lead to a scientific journal publication or conference papers. In any of these publications, you will not be individually identified.

The electronic copy of the data will only be accessed by the study's researchers. The electronic copy of the data will be destroyed after five years upon the completion of the study. The collected data may be part of another study for investigating attitudes towards elderly people and people with dementia.

9. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can indicate your interest in receiving a lay summary of the research results by providing your

contact details in the online survey at the end of this study, after you read the debrief. You will receive feedback after the study have concluded.

10. What if I would like further information?

If you like to know more about these studies at any stage of these studies, please feel free to contact Cherry Wan (cwan2832@uni.sydney.edu.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 [HREC Approval No: *2022/562*] 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

Participant Consent Form

Students

Pilot Study: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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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 disentangle the relationship between attitudes towards ageism and dementia.
- 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 respond to an online survey.
- I understand that my information may be used in future research conducted by the researchers.
- 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.
- I understand that I am free to withdraw from this study and that I can choose to withdraw any information I have already provided (unless the data has already been de-identified or published).
- 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 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.

If you give consent to participate in these research projects, please click 'Yes' below. If you do not wish to participate, please click 'No'.

☐ Yes, I have read the Participant Consent Form and I consent to my participation in this research project

☐ No, I have read the Participant Consent Form and I do NOT consent to my participation in this research project

Participant Debriefing Statement

Students

Pilot Study: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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Thank you for participating as a research participant in the present study.

This is a pilot study for the study titled, "Disentangling the relationships between ageism stigma and dementia stigma". The term *stigma* was first coined by Goffman (1963) describing stigma is an attribute that is deeply discrediting. The term has been applied to various social categories, such as group defined by ethnicity, gender, sexual orientation, and physical and mental illness or disability. In the public stigma domain, people with dementia were associated with total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017).

Dementia is a neurodegenerative disease relating to loss of memory and other thinking abilities severe enough to interfere with daily life. People with dementia may not show obvious difference from the public in terms of physical appearance at the first glance, others may link the stereotype of dementia with the easily observed aged physical appearance, a scientifically approved associating factor with dementia. In that sense, others can attribute forgetfulness and erasure of self towards old people because old age is the only salient observable physical cue of people with dementia as portrayed by mass media (Low & Purwaningrum, 2020).

The present pilot study serves for validating the vignette that is planning to be used in the main study. The pilot study can assess whether my manipulation in the four vignettes (conditions) are actually encoded by participants. In the study, participants are randomly assigned into one of the following four conditions in the second part of the study:

- elderly people with dementia
- elderly people without dementia
- younger people with dementia, and
- younger people without dementia

In this part, participants are asked to read a particular vignette with a description matching their assigned conditions. After reading the vignette, they are asked to report their sympathy and contempt emotions elicited from the subject described in the vignette (Fiske et al., 2002).

If you have any questions about the study, please feel free to contact the Student Investigator, Cherry Wan at cwan2832@uni.sydney.edu.au or Chief Investigator, Fiona White at fiona.white@sydney.edu.au.

If you find any questions or content in this study upsetting or distressing, please contact the University of Sydney's Counselling and Psychological Services (CAPS) by phone: (02) 8627 8433 or (02) 8627 8437; or by email: counselling.service@sydney.edu.au for confidential support from qualified counsellors and trained volunteers. CAPS is located on Level 5 of the Jane Foss Russell Building (G02).

Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney, Australia on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).

Thank you for participating!

References:

Ballenger, J. F. (2017). Framing Confusion: Dementia, Society, and History. *AMA Journal of Ethics*, *19*(7), 713–719. https://doi.org/10.1001/journalofethics.2017.19.7.mhst1-1707

Fiske, S. T. (2018). Stereotype Content: Warmth and Competence Endure. *Current Directions in Psychological Science*, *27*(2), 67–73.

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*(6), 878–902. https://doi.org/10.1037/0022-3514.82.6.878

Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. Simon and Schuster.

Low, L.-F., & Purwaningrum, F. (2020). Negative stereotypes, fear and social distance: A systematic review of depictions of dementia in popular culture in the context of stigma. *BMC Geriatrics*, *20*, 477–494.

Nguyen, T., & Li, X. (2020). Understanding public-stigma and self-stigma in the context of dementia: A systematic review of the global literature. *Dementia*, *19*(2), 148–181. https://doi.org/10.1177/1471301218800122

B2. Community Member Sample Version

Participant Information Statement

Community members

Pilot Study: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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1. What is this study about?

We are conducting a research study about the factors associating with attitude towards dementia and to discover the relationship between attitudes towards people aged 65 or above and people living with dementia. The research results will provide a foundation for future studies on investigating attitude towards people aged 65 or above, people living with dementia, and people living with early-onset dementia.

Participation Information Statement tells you about the research studies. Knowing what is involved will help you decide if you want to take part in this study. Taking part in this study is voluntary. Please read this sheet carefully and ask questions about anything that you do not understand or want to know more about.

By giving your consent to take part in these studies you are telling us that you:
✓ Understand what you have read.
✓ Agree to take part in the research studies as outlined below.
✓ Agree to the use of your personal information as described.

2. Who is running the study?

The study is being carried out by the following researchers:

- Professor Fiona White, Professor, School of Psychology, Faculty of Science, University of Sydney
- Professor Sharon Naismith, Leonard P Ullman Chair in Psychology, School of Psychology, Faculty of Science, University of Sydney
- Miss Cheuk Yue Wan, PhD student, School of Psychology, Faculty of Science, University of Sydney

Miss Cheuk Yue Wan is conducting this study as partial basis for the degree Doctor of Philosophy (Science) at The University of Sydney. This will take place under the supervision of Professor Fiona White, Chief Investigator and Professor Sharon Naismith, Co-investigator.

3. Who can take part in the study?

We are seeking participants who are over 18 years old, fluent in English, living in Australia, and never been diagnosed with dementia. People who have been diagnosed with dementia are excluded because this research aims to investigate how other people view people living with dementia. You would also be required to comprehend all the information.

4. What will the study involve for me?

If you decide to take part in this study, you will be asked to complete an online survey by answering the questions listed. It will take approximately 20 minutes to complete the survey. You can complete the survey anywhere and anytime from your digital device with online services. Answering all questions in one time is not necessary, instead, you can revisit the same link to continue your unfinished survey because the online survey tool will automatically record your answer progress for 7 days. This study will ask your life experiences with elderly people, people living with dementia, and general knowledge about dementia. Then you will be presented a written story. The study will ask your subjective views and emotions towards the target person in the story. A sample question includes, "I would feel pity for the person".

There will not be any audio/video/photographs/other recording involved. You are free to withdraw from this study at any time. You can choose to receive a lay summary of the research results at the end of the survey.

These studies should take approximately 20 minutes. This includes reading the Participant Information Statement and the full debrief of these studies at the conclusion of the survey. Everything will be kept confidential and anonymous. The responses from aged care workers are completely anonymous and their managers will not see their response nor have any way of knowing whether or not they have participated.

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. If you decide to take part in the study and then change your mind you can withdraw by stopping responding to the survey and closing your web browser before your submission. However, your withdrawal of the survey means you are not eligible to join the prize draw.

By submitting your survey, you consent to take part in the study. You can withdraw any time before you submit. At the end of the study, after reading the debrief statement, you

will have a final opportunity to withdraw from the study. However, once your responses are submitted, they cannot be withdrawn. This is because they are anonymous, and we will not be able to tell which one yours is.

6. Are there any risks or costs?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in these studies. Nonetheless, you can withdraw at any point in the studies with no consequence. You will also have an opportunity to withdraw your response after the debrief at the end of the studies.

While answering the questions on this online survey, you may experience feelings of emotional and social distress. However, the likelihood and severity of experiencing this will be low to moderate. If you feel any social distress after completing the survey, you can voluntarily withdraw anytime during the survey by closing the web browser. You can also contact Mental Health Line (NSW) 1800 011 511 and Lifeline 13 11 14 (online chat or video also available 7pm – midnight). You are also encouraged to visit their local GPs or counsellors if you experience distress from any questions of the study.

7. Are there any benefits?

You will not receive any direct financial payment for participating in the studies. However, when you successfully complete this study, you will be eligible to enter a prize draw for the chance to win 1 in 4 $50 VISA gift cards. The exact odds of winning cannot be known because it will depend on the number of people who complete both the studies. These studies are advertised nationally so the odds of winning may be low. You can choose not to enter the prize draw at the end of the study.

Please note that researchers reserve the right to refuse entry into the prize draw to participants who do not take the research seriously. Data will be screened for abnormal response patterns.

Aside from entering a prize draw, you will be contributing to psychological research whose findings may result in benefiting the wider 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. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

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 as part of a PhD thesis to be submitted to the School of Psychology, University of Sydney. This may also lead to a scientific journal publication or conference papers. In any of these publications, you will not be individually identifiable in these publications.

The electronic copy of the data will only be accessed by the study's researchers. The electronic copy of the data will be destroyed after five years upon the completion of the study. The collected data may be part of another study for investigating attitudes towards elderly people and people with dementia.

9. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can indicate your interest in receiving a lay summary of the research results by providing your contact details in the online survey, at the end of the studies, after you read the debrief. You will receive feedback after the study have concluded.

10. What if I would like further information?

If you like to know more about these studies at any stage of these studies, please feel free to contact Cherry Wan (cwan2832@uni.sydney.edu.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 [HREC Approval No: 2022/562] 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

Participant Consent Form

Community members

Pilot Study: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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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 disentangle the relationship between attitudes towards ageism and dementia.
- 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 respond to an online survey.
- I understand that my information may be used in future research conducted by the researchers.
- 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.
- I understand that I am free to withdraw from this study and that I can choose to withdraw any information I have already provided (unless the data has already been de-identified or published).
- 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 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.

If you give consent to participate in these research projects, please click 'Yes' below. If you do not wish to participate, please click 'No'.

☐ Yes, I have read the Participant Consent Form and I consent to my participation in this research project

☐ No, I have read the Participant Consent Form and I do NOT consent to my participation in this research project

Participant Debriefing Statement

Community members

Pilot Study: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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What is a 'debrief'?

A debrief is the process of giving participants a fuller explanation of the study after the study's completion than was possible before or during the research.

Thank you for participating as a research participant in the present study.

The full title of the present study is "Reducing dementia stigma". The term *stigma* has been applied to various social categories, such as group defined by ethnicity, gender, sexual orientation, and physical and mental illness or disability. In the public stigma domain, people with dementia were associated with total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017).

The negative consequences of this *public* dementia stigma are an internalising of these attitudes to create negative *private* stigma including, i) lower self-esteem, ii) decreasing social support and network ties, iii) altered family dynamics, iv) diminished emotional well-being, and v) increased vulnerability to the illness (Burgener et al., 2015; Nguyen & Li, 2020).

The present pilot study serves for validating the video vignette that is planning to be used in the main study. The pilot study can assess whether my manipulation in the four vignettes (conditions) are actually encoded by participants. In the study, participants are randomly assigned into one of the following four conditions in the second part of the study:

- An older man living with dementia
- An older woman living with dementia
- A healthy older man
- A healthy older woman

In this part, participants are asked to watch a video with a description matching their assigned conditions. After watching the video, they are asked to report their sympathy and contempt emotions elicited from the subject described in the vignette (Fiske et al., 2002). Then, they will be asked their attitudes towards ageing and dementia. We also asked the participants' contact experience with elderly people/people living with dementia and dementia knowledge because these two factors may be essential factors influencing individual's attitudes towards ageing and dementia (Kim et al., 2021).

What happens now?
After reading the debrief statement, do you still consent to your data being used in this research project (this is your final opportunity to withdraw from this study)?

☐ Yes, I consent to my data being used in this study
☐ No, I do NOT consent to my data being used in this study

(For individuals recruited in Prolific:)
Leave your contact to receive a lay summary of research report
If you want to receive a lay summary of research report after the research is concluded, you can simply click 'Yes, I want to receive a lay summary ...'. Otherwise, you are free to close this browser at any time. By clicking on 'Yes, I want to receive a lay summary..., you will be transferred to another survey website and asked to leave your name and email address. These details will only be used to communicate with you about the research results, and these details will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to receive a lay summary of research report and provide your contact details.

☐ Yes, I want to receive a lay summary of research report. I agree to provide my name and email address.

(For individuals recruited in platforms excluding Prolific:)
Leave your contact to enter the PRIZE DRAW
Should you choose, you can now enter the prize draw to win 1 of 4 VISA gift cards, each valued at $50. Simply click 'Yes, I want to enter the draw....'. Otherwise, you are free to close this browser at any time. If you want to receive a lay summary of research report after the research is concluded, you can also click on the same option. By clicking on 'Yes, I want to enter the draw..., you will be transferred to another survey website and asked to leave your name and email address. These details will only be used to communicate with you about the draw results and/or the research results, and these details will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to enter the draw and provide your contact details.

☐ Yes, I want to enter the draw to have a chance to win a gift card. I agree to provide my name and email address.

Leave your contact to receive a lay summary of research report
If you want to receive a lay summary of research report after the research is concluded, you can simply click 'Yes, I want to receive a lay summary ...'. Otherwise, you are free to close this browser at any time. By clicking on 'Yes, I want to receive a lay summary..., you will be transferred to another survey website and asked to leave your name and email address. These details will only be used to communicate with you about the research results, and these details will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to receive a lay summary of research report and provide your contact details.

☐ Yes, I want to receive a lay summary of research report. I agree to provide my email address.

If you have any questions about the study, please feel free to contact the Student Investigator, Cherry Wan at cwan2832@uni.sydney.edu.au or Chief Investigator, Fiona White at fiona.white@sydney.edu.au. If you find any questions or content in this study upsetting or distressing, please contact Mental Health Line (NSW) 1800 011 511 and Lifeline 13 11 14 (online chat or video also available 7pm – midnight). You are also encouraged to visit their local GPs or counsellors if you experience distress from any questions of the study. Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney, Australia on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).

Thank you for participating!

References:

Ballenger, J. F. (2017). Framing Confusion: Dementia, Society, and History. *AMA Journal of Ethics*, *19*(7), 713–719. https://doi.org/10.1001/journalofethics.2017.19.7.mhst1-1707

Burgener, S. C., Buckwalter, K., Perkhounkova, Y., Liu, M. F., Riley, R., Einhorn, C. J., Fitzsimmons, S., & Hahn-Swanson, C. (2015). Perceived stigma in persons with early-stage dementia: Longitudinal findings: Part 1. *Dementia*, *14*(5), 589–608. https://doi.org/10.1177/1471301213508399

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*(6), 878–902. https://doi.org/10.1037/0022-3514.82.6.878

Kim, S., Richardson, A., Werner, P., & Anstey, K. J. (2021). Dementia stigma reduction (DESeRvE) through education and virtual contact in the general public: A multi-arm

factorial randomised controlled trial. *Dementia*, *20*(6), 2152–2169. https://doi.org/10.1177/1471301220987374

Nguyen, T., & Li, X. (2020). Understanding Public-Stigma and Self-Stigma in the Context of Dementia: A Systematic Review of the Global Literature. *Dementia*. https://doi.org/10.1177/1471301218800122

B3. Community Member Sample (Prolific) Version

Participant Information Statement

Community members

Pilot Study: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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1. What is this study about?

We are conducting a research study about the factors associating with attitude towards dementia and to discover the relationship between attitudes towards elderly people and people living with dementia. The research results will provide a foundation for future studies on investigating attitude towards elderly people and people living with dementia.

Participation Information Statement tells you about the research studies. Knowing what is involved will help you decide if you want to take part in this study. Taking part in this study is voluntary. Please read this sheet carefully and ask questions about anything that you do not understand or want to know more about.

By giving your consent to take part in these studies you are telling us that you:

✓ Understand what you have read.
✓ Agree to take part in the research studies as outlined below.
✓ Agree to the use of your personal information as described.

2. Who is running the study?

The study is being carried out by the following researchers:

- Professor Fiona White, Professor, School of Psychology, Faculty of Science, University of Sydney
- Professor Sharon Naismith, Leonard P Ullman Chair in Psychology, School of Psychology, Faculty of Science, University of Sydney
- Miss Cheuk Yue Wan, PhD student, School of Psychology, Faculty of Science, University of Sydney

Miss Cheuk Yue Wan is conducting this study as partial basis for the degree Doctor of Philosophy (Science) at The University of Sydney. This will take place under the supervision of Professor Fiona White, Chief Investigator and Professor Sharon Naismith, Co-investigator.

3. Who can take part in the study?

We are seeking participants who are over 18 years old, fluent in English, living in Australia, and never been diagnosed with dementia. People who have been diagnosed with dementia are excluded because this research aims to investigate how other people view people living with dementia. You would also be required to comprehend all the information.

4. What will the study involve for me?

If you decide to take part in this study, you will be asked to complete an online survey by answering the questions listed. It will take approximately 20 minutes to complete the survey. You can complete the survey anywhere and anytime from your digital device with online services. Answering all questions in one time is not necessary, instead, you can revisit the same link to continue your unfinished survey because the online survey tool will automatically record your answer progress for 7 days. This study will ask your life experiences with elderly people, people living with dementia, and general knowledge about dementia. Then you will be presented a story. The study will ask your subjective views and emotions towards the target person in the video. A sample question includes, "I would feel pity for the person".

There will not be any audio/video/photographs/other recording involved. You are free to withdraw from this study at any time. You can choose to receive a lay summary of the research results at the end of the survey.

These studies should take approximately 20 minutes. This includes reading the Participant Information Statement and the full debrief of these studies at the conclusion of the survey. Everything will be kept confidential and anonymous. The responses from aged care workers are completely anonymous and their managers will not see their response nor have any way of knowing whether or not they have participated.

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. If you decide to take part in the study and then change your mind you can withdraw by stopping responding to the survey and closing your web browser before your submission. However, your withdrawal of the survey means you are not eligible to join the prize draw.

By submitting your survey, you consent to take part in the study. You can withdraw any time before you submit. At the end of the study, after reading the debrief statement, you will have a final opportunity to withdraw from the study. However, once your responses

are submitted, they cannot be withdrawn. This is because they are anonymous, and we will not be able to tell which one yours is.

6. Are there any risks or costs?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in these studies. Nonetheless, you can withdraw at any point in the studies with no consequence. You will also have an opportunity to withdraw your response after the debrief at the end of the studies.

While answering the questions on this online survey, you may experience feelings of emotional and social distress. However, the likelihood and severity of experiencing this will be low to moderate. If you feel any social distress after completing the survey, you can voluntarily withdraw anytime during the survey by closing the web browser. You can also contact Mental Health Line (NSW) 1800 011 511 and Lifeline 13 11 14 (online chat or video also available 7pm – midnight). You are also encouraged to visit their local GPs or counsellors if you experience distress from any questions of the study.

7. Are there any benefits?

You will receive 3GBP for participating in the studies via Prolific platform.

Please note that researchers reserve the right to reject participant submission who do not take the research seriously on Prolific. Data will be screened for abnormal response patterns.

Aside from receiving the monetary compensation, you will be contributing to psychological research whose findings may result in benefiting the wider 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. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

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 as part of a PhD thesis to be submitted to the School of Psychology, University of Sydney. This may also lead to a scientific journal publication or conference papers. In any of these publications, you will not be individually identifiable in these publications.

The electronic copy of the data will only be accessed by the study's researchers. The electronic copy of the data will be destroyed after five years upon the completion of the study. The collected data may be part of another study for investigating attitudes towards elderly people and people with dementia.

9. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can indicate your interest in receiving a lay summary of the research results by providing your contact details in the online survey, at the end of the studies, after you read the debrief. You will receive feedback after the study have concluded.

10. What if I would like further information?

If you like to know more about these studies at any stage of these studies, please feel free to contact Cherry Wan (cwan2832@uni.sydney.edu.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 [HREC Approval No: 2022/562] 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

Participant Consent Form

Community members

Pilot Study: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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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 disentangle the relationship between attitudes towards ageism and dementia.
- 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 respond to an online survey.
- I understand that my information may be used in future research conducted by the researchers.
- 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.
- I understand that I am free to withdraw from this study and that I can choose to withdraw any information I have already provided (unless the data has already been de-identified or published).
- 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 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.

If you give consent to participate in these research projects, please click ‘Yes’ below. If you do not wish to participate, please click ‘No’.

☐ Yes, I have read the Participant Consent Form and I consent to my participation in this research project

☐ No, I have read the Participant Consent Form and I do NOT consent to my participation in this research project

Participant Debriefing Statement

Community members

Pilot Study: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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What is a 'debrief'?

A debrief is the process of giving participants a fuller explanation of the study after the study's completion than was possible before or during the research.

Thank you for participating as a research participant in the present study.

The full title of the present study is "Reducing dementia stigma". The term *stigma* has been applied to various social categories, such as group defined by ethnicity, gender, sexual orientation, and physical and mental illness or disability. In the public stigma domain, people with dementia were associated with total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017).

The negative consequences of this *public* dementia stigma are an internalising of these attitudes to create negative *private* stigma including, i) lower self-esteem, ii) decreasing social support and network ties, iii) altered family dynamics, iv) diminished emotional well-being, and v) increased vulnerability to the illness (Burgener et al., 2015; Nguyen & Li, 2020).

The present pilot study serves for validating the video vignette that is planning to be used in the main study. The pilot study can assess whether my manipulation in the four vignettes (conditions) are actually encoded by participants. In the study, participants are randomly assigned into one of the following four conditions in the second part of the study:

- An older man living with dementia
- An older woman living with dementia
- A healthy older man
- A healthy older woman

In this part, participants are asked to watch a video with a description matching their assigned conditions. After watching the video, they are asked to report their sympathy and contempt emotions elicited from the subject described in the vignette (Fiske et al., 2002). Then, they will be asked their attitudes towards ageing and dementia. We also asked the participants' contact experience with elderly people/people living with dementia and dementia knowledge because these two factors may be essential factors influencing individual's attitudes towards ageing and dementia (Kim et al., 2021).

What happens now?

After reading the debrief statement, do you still consent to your data being used in this research project (this is your final opportunity to withdraw from this study)?

☐ Yes, I consent to my data being used in this study

☐ No, I do NOT consent to my data being used in this study

(For individuals recruited in Prolific:)

Leave your contact to receive a lay summary of research report

If you want to receive a lay summary of research report after the research is concluded, you can simply click 'Yes, I want to receive a lay summary …'. Otherwise, you are free to close this browser at any time. By clicking on 'Yes, I want to receive a lay summary..., you will be transferred to another survey website and asked to leave your name and email address. These details will only be used to communicate with you about the research results, and these details will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to receive a lay summary of research report and provide your contact details.

☐ Yes, I want to receive a lay summary of research report. I agree to provide my name and email address.

(For individuals recruited in platforms excluding Prolific:)

Leave your contact to enter the PRIZE DRAW

Should you choose, you can now enter the prize draw to win 1 of 4 VISA gift cards, each valued at $50. Simply click 'Yes, I want to enter the draw....'. Otherwise, you are free to close this browser at any time. If you want to receive a lay summary of research report after the research is concluded, you can also click on the same option. By clicking on 'Yes, I want to enter the draw..., you will be transferred to another survey website and asked to leave your name and email address. These details will only be used to communicate with you about the draw results and/or the research results, and these details will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to enter the draw and provide your contact details.

☐ Yes, I want to enter the draw to have a chance to win a gift card. I agree to provide my name and email address.

Leave your contact to receive a lay summary of research report

If you want to receive a lay summary of research report after the research is concluded, you can simply click 'Yes, I want to receive a lay summary …'. Otherwise, you are free to close this browser at any time. By clicking on 'Yes, I want to receive a lay summary..., you will be transferred to another survey website and asked to leave your name and email address. These details will only be used to communicate with you about the research results, and these details will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to receive a lay summary of research report and provide your contact details.

☐ Yes, I want to receive a lay summary of research report. I agree to provide my email address.

If you have any questions about the study, please feel free to contact the Student Investigator, Cherry Wan at cwan2832@uni.sydney.edu.au or Chief Investigator, Fiona White at fiona.white@sydney.edu.au.

If you find any questions or content in this study upsetting or distressing, please contact Mental Health Line (NSW) 1800 011 511 and Lifeline 13 11 14 (online chat or video also available 7pm – midnight). You are also encouraged to visit their local GPs or counsellors if you experience distress from any questions of the study.

Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney, Australia on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).

Thank you for participating!

References:

Ballenger, J. F. (2017). Framing Confusion: Dementia, Society, and History. *AMA Journal of Ethics*, *19*(7), 713–719. https://doi.org/10.1001/journalofethics.2017.19.7.mhst1-1707

Burgener, S. C., Buckwalter, K., Perkhounkova, Y., Liu, M. F., Riley, R., Einhorn, C. J., Fitzsimmons, S., & Hahn-Swanson, C. (2015). Perceived stigma in persons with early-stage dementia: Longitudinal findings: Part 1. *Dementia*, *14*(5), 589–608. https://doi.org/10.1177/1471301213508399

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*(6), 878–902. https://doi.org/10.1037/0022-3514.82.6.878

Kim, S., Richardson, A., Werner, P., & Anstey, K. J. (2021). Dementia stigma reduction (DESeRvE) through education and virtual contact in the general public: A multi-arm

factorial randomised controlled trial. *Dementia*, *20*(6), 2152–2169. https://doi.org/10.1177/1471301220987374

Nguyen, T., & Li, X. (2020). Understanding Public-Stigma and Self-Stigma in the Context of Dementia: A Systematic Review of the Global Literature. *Dementia*. https://doi.org/10.1177/1471301218800122

Appendix C

Study 1 Materials and Measures

PLEASE READ THE FOLLOWING STATEMENT ABOUT HARRY/JANE.

	Dementia	Without dementia
55-year-old	Harry/Jane is a 55-year-old widowered wo/man with two children and sees his/her grandchildren regularly. Harry/Jane likes listening to jazz music and collecting antiques and has a small room in his/her home to store all the music collections from the 80s. These days Harry/Jane prefers reading the newspaper to using the internet. Harry/Jane is also a retired government employee, but recently s/he has been forgetting where s/he last left his/her keys to enter his/her home. A geriatric psychiatrist has since assessed Harry/Jane and s/he was diagnosed with dementia.	Harry/Jane is a 55-year-old widowered wo/man with two children and sees his/her grandchildren regularly. Sometimes Harry/Jane forgets where he/she last left his keys to enter his home. Harry/Jane likes listening to jazz music and collecting antiques. Harry/Jane has a small room in his/her home to store all the music collections from the 80s. These days Harry/Jane prefers reading the newspaper to using the internet. Harry/Jane is also a retired government employee, but recently s/he got an electricity bill that was higher than expected, and s/he is now thinking of how he will be able to pay it on time.
85-year-old	Harry/Jane is an 85-year-old widowered wo/man with two children and sees his/her grandchildren regularly. Harry/Jane likes listening to jazz music and collecting antiques and has a small room in his/her home to	Harry/Jane is an 85-year-old widowered wo/man with two children and sees his/her grandchildren regularly. Sometimes Harry/Jane forgets where he/she last left his keys to enter his home. Harry/Jane likes listening to jazz music and collecting

	store all the music collections from the 50s. These days Harry/Jane prefers reading the newspaper to using the internet. Harry/Jane is also a retired government employee, but recently s/he has been forgetting where s/he last left his/her keys to enter his/her home. A geriatric psychiatrist has since assessed Harry/Jane and s/he was diagnosed with dementia.	antiques. Harry/Jane has a small room in his/her home to store all the music collections from the 50s. These days Harry/Jane prefers reading the newspaper to using the internet. Harry/Jane is also a retired government employee, but recently s/he got an electricity bill that was higher than expected, and s/he is now thinking of how he will be able to pay it on time.

Negative Emotions and Behavioural Intentions towards People living with Dementia

1. I would feel aggravated by Harry/Jane.
2. Harry/Jane would terrify me.
3. How angry would you feel at Harry/Jane?
4. If I were an employer, I would interview Harry/Jane for a job.
5. I would be willing to talk to Harry/Jane about his/her problems.
6. How irritated would you feel by Harry/Jane?
7. I would share a carpool with Harry/Jane every day.
8. How scared of Harry/Jane would you feel?
9. How likely is it that you would help Harry/Jane?
10. How certain would you feel that you would help Harry/Jane?
11. How frightened of Harry/Jane would you feel?
12. If I were a landlord, I probably would rent an apartment to Harry/Jane.

Negative Attitudes towards People living with Dementia

1. Persons with dementia should be institutionalized. (reverse-coded)

2. Persons with dementia are not as dangerous as people think.
3. Only those with a low education level would develop dementia. (reverse-coded)
4. People who live at home with relatives with dementia would be looked down upon by others. (reverse-coded)
5. Research on dementia is nothing but a good way for pharmaceutical companies to make profits. (reverse-coded)
6. Resources for medical research should be devoted to the acute conditions of those with productive activities. (reverse-coded)
7. Society should treat persons with dementia with more tolerance.
8. I would avoid contact with people with dementia. [b]
9. I would avoid disclosing the truth if my relatives or friends had dementia. (reverse-coded)
10. I would feel embarrassed going out with a relative or friend who has dementia. (reverse-coded)
11. Increasing spending for dementia care services is a waste of money. (reverse-coded)

Dementia Knowledge

1. Dementia is a normal part of the ageing process. (reverse-coded)
2. Alzheimer's disease is the most common form of dementia.
3. People can recover from the most common forms of dementia. (reverse-coded)
4. Dementia does not result from physical changes in the brain. (reverse-coded)
5. Planning for end of life care is generally not necessary following a diagnosis of dementia.
6. Blood vessel disease (vascular dementia) is the most common form of dementia. (reverse-coded)
7. Most forms of dementia do not generally shorten a person's life. (reverse-coded)
8. Having high blood pressure increases a person's risk of developing dementia.
9. Maintaining a healthy lifestyle does not reduce the risk of developing the most common forms of dementia. (reverse-coded)
10. Symptoms of depression can be mistaken for symptoms of dementia.
11. Exercise is generally beneficial for people experiencing dementia.

12. Early diagnosis of dementia does not generally improve quality of life for people experiencing the condition. (reverse-coded)
13. The sudden onset of cognitive problems is characteristic of common forms of dementia. (reverse-coded)
14. It is impossible to communicate with a person who has advanced dementia. (reverse-coded)
15. A person experiencing advanced dementia will not generally respond to changes in their physical environment. (reverse-coded)
16. It is important to correct a person with dementia when they are confused. (reverse-coded)
17. People experiencing advanced dementia often communicate through body language.
18. Uncharacteristic behaviors in a person experiencing dementia are generally a response to unmet needs.
19. Medications are the most effective way of treating behavioral symptoms of dementia. (reverse-coded)
20. People experiencing dementia do not generally have problems making decision. (reverse-coded)
21. Movement is generally affected in the later stages of dementia.
22. People with advanced dementia may have difficulty speaking.
23. People experiencing dementia often have difficulty learning new skills.
24. Difficulty eating and drinking generally occurs in the later stages of dementia.
25. Daily care for a person with advanced dementia is effective when it focuses on providing comfort.

Contact Quality with People living with Dementia and Older People

To what extent did you experience the contact with people living with dementia as…

1. …equal (1 = *definitely not* to 7 = *definitely yes*)
2. …involuntary or voluntary (*1 = definitely involuntary* to *7 = definitely voluntary*)

3. …superficial or intimate (*1 = very superficial* to *7 = very intimate*)
4. …pleasant (1 = *not at all* to 7 = *very*)
5. …competitive or cooperative (1 = *very competitive* to *7 = very cooperative*)

To what extent did you experience the contact with elderly people as…

1. …equal (1 = *definitely not* to 7 = *definitely yes*)
2. …involuntary or voluntary (*1 = definitely involuntary* to *7 = definitely voluntary*)
3. …superficial or intimate (*1 = very superficial* to *7 = very intimate*)
4. …pleasant (1 = *not at all* to 7 = *very*)
5. …competitive or cooperative (1 = *very competitive* to *7 = very cooperative*)

Appendix D

Study 2 and Study 3 Ethics Approval Letter

Research Integrity & Ethics Administration
HUMAN RESEARCH ETHICS COMMITTEE

Thursday, 27 July 2023

Prof Fiona White
Psychology; Faculty of Science
Email: fiona.white@sydney.edu.au

Dear Fiona,

Your request to modify this project, which was submitted on 16/06/2023, has been considered.

After consideration of your response to the comments raised, this project has been approved to proceed with the proposed amendments.

Protocol Number: **2022/562**
Protocol Title: **Ageism and dementia attitude**

Annual Report Due: **2/08/2023**

Documents Approved:

Date Uploaded	Version Number	Document Name
19/07/2023	Version 5	Consent form(community member)(clean)
19/07/2023	Version 5	Consent form(student)(clean)
19/07/2023	Version 5	debriefing(community member prolific)(clean)
19/07/2023	Version 5	debriefing(community member)(clean)
19/07/2023	Version 5	debriefing(student)(clean)
19/07/2023	Version 5	Participant infor statement(community member prolific)(clean
19/07/2023	Version 5	Participant infor statement(community member)(clean)
19/07/2023	Version 5	Participant infor statement(student)(clean)
19/07/2023		Prolific advertisement_R5
19/07/2023		SONA and community word advertisements(clean)
16/06/2023		Questionnaire_R5_clean

Please contact the ethics office should you require further information.

Sincerely,

Associate Professor Carolyn Maccann
Chair
Psychology Review Committee (Low Risk)

The University of Sydney of Sydney HRECs are constituted and operate in accordance with the National Health and Medical Research Council's (NHMRC) National Statement on Ethical Conduct in Human Research (2018) and the NHMRC's Australian Code for the Responsible Conduct of Research (2018)

Research Integrity & Ethics Administration
Research Portfolio
Level 3, F23 Administration Building
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ABN 15 211 513 464
CRICOS 00026A

Appendix E

Study 2 and Study 3 Participant Information Statement, Consent Form, and Debriefing Statement

E1. Student Sample Version

Participant Information Statement

Students

Study 2: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

1. What is this study about?

We are conducting a research study about the factors associating with attitude towards dementia and to discover the relationship between attitudes towards elderly people and people living with dementia. In addition, we will investigate whether the cultural ancestry of the elderly person and the person living with dementia will influence your ageism attitude and dementia attitude. The research results will provide a foundation for future studies on investigating attitudes towards elderly people and people living with dementia.

Participation Information Statement tells you about the research studies. Knowing what is involved will help you decide if you want to take part in this study. Taking part in this study is voluntary. Please read this sheet carefully and ask questions about anything that you do not understand or want to know more about.

By giving your consent to take part in these studies you are telling us that you:

✓ Understand what you have read.
✓ Agree to take part in the research studies as outlined below.
✓ Agree to the use of your personal information as described.

2. Who is running the study?

The study is being carried out by the following researchers:

- Professor Fiona White, Professor, School of Psychology, Faculty of Science, University of Sydney
- Professor Sharon Naismith, Leonard P Ullman Chair in Psychology, School of Psychology, Faculty of Science, University of Sydney
- Miss Cheuk Yue Wan, PhD student, School of Psychology, Faculty of Science, University of Sydney

Miss Cheuk Yue Wan is conducting this study as partial basis for the degree Doctor of Philosophy (Science) at The University of Sydney. This will take place under the

HREC Approval No.: 2022/562 1 [Version 5 and 18/07/2023]

By submitting your survey, you consent to take part in the study. You can withdraw any time before you submit. At the end of the study, after reading the debrief statement, you will have a final opportunity to withdraw from the study. However, once your responses are submitted, they cannot be withdrawn. This is because they are anonymous, and we will not be able to tell which one yours is.

6. Are there any risks or costs?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in these studies. Nonetheless, you can withdraw at any point in the studies with no consequence. You will also have an opportunity to withdraw your response after the debrief at the end of the studies.

While answering the questions on this online survey, you may experience feelings of emotional and social distress. However, the likelihood and severity of experiencing this will be low to moderate. If you feel any social distress after completing the survey, you can voluntarily withdraw anytime during the survey by closing the web browser. You can also contact the University of Sydney's Counselling and Psychological Services (CAPS) by phone: (02) 8627 8433 or (02) 8627 8437; or by email: counselling.service@sydney.edu.au. CAPS is located on Level 5 of the Jane Foss Russell Building (G02).

7. Are there any benefits?

Students that complete the two study will receive 0.5 course credit points (equivalent to 30 minutes) for your undergraduate psychology unit.

Other than credit points, we cannot guarantee that you will receive any other direct benefits from being part of the studies. Nevertheless, students may benefit from being exposed to first-hand psychological research.

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. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

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 as part of a PhD thesis to be submitted to the School of Psychology, University of Sydney. This may also lead to a scientific journal publication or conference papers. In any of these publications, you will not be individually identified.

The electronic copy of the data will only be accessed by the study's researchers. The electronic copy of the data will be destroyed after five years upon the completion of the

supervision of Professor Fiona White, Chief Investigator and Professor Sharon Naismith, Co-investigator.

3. Who can take part in the study?

We are seeking participants who are over 18 years old, fluent in English, living in Australia, and never been diagnosed with dementia. People who have been diagnosed with dementia are excluded because this research aims to investigate how other people view people living with dementia. You would also be required to comprehend all the information.

4. What will the study involve for me?

If you decide to take part in this study, you will be asked to complete an online survey by answering the questions listed. It will take approximately 25 minutes to complete the survey. You can complete the survey anywhere and anytime from your digital device with online services. Answering all questions in one time is not necessary, instead, you can revisit the same link to continue your unfinished survey because the online survey tool will automatically record your answer progress for 7 days. This study will ask your life experiences with elderly people, people living with dementia, general knowledge about dementia, your personality, and subjective views towards elderly people and people living with dementia. Then you will be presented a video. You will report your subjective views and emotions towards the target person described in the video. A sample question includes, “I would feel pity for the person”.

There will not be any audio/video/photographs/other recording involved. You are free to withdraw from this study at any time. You can choose to receive a lay summary of the research results at the end of the survey.

These studies should take approximately 25 minutes. This includes reading the Participant Information Statement and the full debrief of these studies at the conclusion of the survey. Everything will be kept confidential and anonymous.

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. If you decide to take part in the study and then change your mind you can withdraw by stopping responding to the survey and closing your web browser before your submission. Should you decide to withdraw from the survey, you will not be eligible to the 0.5 course credit points (equivalent to 30 minutes) for your undergraduate psychology unit.

study. The collected data may be part of another study for investigating attitudes towards elderly people and people with dementia.

9. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can indicate your interest in receiving a lay summary of the research results by providing your contact details in the online survey at the end of this study, after you read the debrief. You will receive feedback after the study have concluded.

10. What if I would like further information?

If you like to know more about these studies at any stage of these studies, please feel free to contact Cherry Wan (cwan2832@uni.sydney.edu.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 [HREC Approval No: *2022/562*] 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

Participant Consent Form

Students

Study 2: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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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 (1) to investigate what factors associating with dementia prejudice, and (2) to entangle the relationship between ageism prejudice and dementia prejudice.
- 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 respond to an online survey.
- I understand that my information may be used in future research conducted by the researchers.
- 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.
- I understand that I am free to withdraw from this study and that I can choose to withdraw any information I have already provided (unless the data has already been de-identified or published).
- 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 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.

If you give consent to participate in these research projects, please click 'Yes' below. If you do not wish to participate, please click 'No'.

☐ Yes, I have read the Participant Consent Form and I consent to my participation in this research project

☐ No, I have read the Participant Consent Form and I do NOT consent to my participation in this research project

Participant Debriefing Statement

Students

Study 2: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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Thank you for participating as a research participant in the present study.

This is a study for the study titled, "Reducing ageism and dementia stigma from a social psychology perspective". The term *stigma* was first coined by Goffman (1963) describing stigma is an attribute that is deeply discrediting. The term has been applied to various social categories, such as group defined by ethnicity, gender, sexual orientation, and physical and mental illness or disability. In the public stigma domain, people with dementia were associated with total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017).

Dementia is a neurodegenerative disease relating to loss of memory and other thinking abilities severe enough to interfere with daily life. People with dementia may not show obvious difference from the public in terms of physical appearance at the first glance, others may link the stereotype of dementia with the easily observed aged physical appearance, a scientifically approved associating factor with dementia. In that sense, others can attribute forgetfulness and erasure of self towards old people because old age is the only salient observable physical cue of people with dementia as portrayed by mass media (Low & Purwaningrum, 2020).

The study 2 aims to use video to elicit the emotional reactions to the target person from an East Asian ancestry background. In the second part of the study, participants were randomly assigned to watch either a male or female version of the following four conditions:

- elderly people with dementia
- elderly people without dementia
- younger people with dementia, and
- younger people without dementia

In this part, participants are asked to watch a particular video vignette with a description matching their assigned conditions. After watching the video vignette, they are asked to report their sympathy and contempt emotions elicited from the subject described in the vignette (Fiske et al., 2002).

We also measured your personality of openness to see the individual differences on attitudes towards older people. Finally, we asked your behavioural tendency under a certain occasion that you may face in real life. We want to know whether your attitude and emotional

reactions will be directly reflected in your behaviour when interacting with our research target population.

In addition, the current study showing a target person from an East Asian ancestry background will be compared with the results from a previous study showing a target person from a White ancestry background. Compared to Western counterparts, Chinese students held more negative attitudes toward aging and older people (Luo et al., 2013). However, it is not clear whether the participants' attitudes were based on the general participant's attitude towards dementia or whether the attitudes were based on the participants' imagined target person, who could be an elderly stranger, their grandparents, and from different cultural backgrounds. In order to control this unknown variable, we will compare the results from presenting them with video stimulus showing an elderly stranger from East Asian and Anglo-European cultural backgrounds respectively.

What happens now?

After reading the debrief statement, do you still consent to your data being used in this research project (this is your final opportunity to withdraw from this study)?

☐ Yes, I consent to my data being used in this study
☐ No, I do NOT consent to my data being used in this study

Leave your contact to receive a lay summary of research report

If you want to receive a lay summary of research report after the research is concluded, you can simply click 'Yes, I want to receive a lay summary …'. Otherwise, you are free to close this browser at any time. By clicking on 'Yes, I want to receive a lay summary..., you will be transferred to another survey website and asked to leave your name and email address. These details will only be used to communicate with you about the research results, and these details will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to receive a lay summary of research report and provide your contact details.

☐ Yes, I want to receive a lay summary of research report. I agree to provide my name and email address.

If you have any questions about the study, please feel free to contact the Student Investigator, Cherry Wan at cwan2832@uni.sydney.edu.au or Chief Investigator, Fiona White at fiona.white@sydney.edu.au.

If you find any questions or content in this study upsetting or distressing, please contact the University of Sydney's Counselling and Psychological Services (CAPS) by phone: (02) 8627 8433 or (02) 8627 8437; or by email: counselling.service@sydney.edu.au for confidential support from qualified counsellors and trained volunteers. CAPS is located on Level 5 of the Jane Foss Russell Building (G02).

Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney, Australia on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).

Thank you for participating!

References:

Ballenger, J. F. (2017). Framing Confusion: Dementia, Society, and History. *AMA Journal of Ethics*, *19*(7), 713–719. https://doi.org/10.1001/journalofethics.2017.19.7.mhst1-1707

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Nguyen, T., & Li, X. (2020). Understanding public-stigma and self-stigma in the context of dementia: A systematic review of the global literature. *Dementia*, *19*(2), 148–181. https://doi.org/10.1177/1471301218800122

E2. Community Member Sample Version

Participant Information Statement

Community members

Study 2: Ageism and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

---

1. What is this study about?

We are conducting a research study about the factors associating with attitude towards dementia and to discover the relationship between attitudes towards elderly people and people living with dementia. In addition, we will investigate whether the cultural ancestry of the elderly person and the person living with dementia will influence your ageism attitude and dementia attitude. The research results will provide a foundation for future studies on investigating attitudes towards elderly people and people living with dementia.

Participation Information Statement tells you about the research studies. Knowing what is involved will help you decide if you want to take part in this study. Taking part in this study is voluntary. Please read this sheet carefully and ask questions about anything that you do not understand or want to know more about.

By giving your consent to take part in these studies you are telling us that you:

✓ Understand what you have read.
✓ Agree to take part in the research studies as outlined below.
✓ Agree to the use of your personal information as described.

2. Who is running the study?

The study is being carried out by the following researchers:

- Professor Fiona White, Professor, School of Psychology, Faculty of Science, University of Sydney
- Professor Sharon Naismith, Leonard P Ullman Chair in Psychology, School of Psychology, Faculty of Science, University of Sydney
- Miss Cheuk Yue Wan, PhD student, School of Psychology, Faculty of Science, University of Sydney

Miss Cheuk Yue Wan is conducting this study as partial basis for the degree Doctor of Philosophy (Science) at The University of Sydney. This will take place under the

supervision of Professor Fiona White, Chief Investigator and Professor Sharon Naismith, Co-investigator.

3. Who can take part in the study?

We are seeking participants who are over 18 years old, fluent in English, living in Australia, and never been diagnosed with dementia. People who have been diagnosed with dementia are excluded because this research aims to investigate how other people view people living with dementia. You would also be required to comprehend all the information.

4. What will the study involve for me?

If you decide to take part in this study, you will be asked to complete an online survey by answering the questions listed. It will take approximately 25 minutes to complete the survey. You can complete the survey anywhere and anytime from your digital device with online services. Answering all questions in one time is not necessary, instead, you can revisit the same link to continue your unfinished survey because the online survey tool will automatically record your answer progress for 7 days. This study will ask your life experiences with elderly people, people living with dementia, general knowledge about dementia, your personality, and subjective views towards elderly people and people living with dementia. Then you will be presented a video. You will report your subjective views and emotions towards the target person described in the video. A sample question includes, “I would feel pity for the person”.

There will not be any audio/video/photographs/other recording involved. You are free to withdraw from this study at any time. You can choose to receive a lay summary of the research results at the end of the survey.

These studies should take approximately 25 minutes. This includes reading the Participant Information Statement and the full debrief of these studies at the conclusion of the survey. Everything will be kept confidential and anonymous.

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. If you decide to take part in the study and then change your mind you can withdraw by stopping responding to the survey and closing your web browser before your submission. Should you decide to withdraw from the survey, you will not be eligible to join the prize draw.

By submitting your survey, you consent to take part in the study. You can withdraw any time before you submit. At the end of the study, after reading the debrief statement, you will have a final opportunity to withdraw from the study. However, once your responses are submitted, they cannot be withdrawn. This is because they are anonymous, and we will not be able to tell which one yours is.

6. Are there any risks or costs?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in these studies. Nonetheless, you can withdraw at any point in the studies with no consequence. You will also have an opportunity to withdraw your response after the debrief at the end of the studies.

While answering the questions on this online survey, you may experience feelings of emotional and social distress. However, the likelihood and severity of experiencing this will be low to moderate. If you feel any social distress after completing the survey, you can voluntarily withdraw anytime during the survey by closing the web browser. You can also contact Mental Health Line (NSW) 1800 011 511 and Lifeline 13 11 14 (online chat or video also available 7pm – midnight). You are also encouraged to visit their local GPs or counsellors if you experience distress from any questions of the study.

7. Are there any benefits?

You will not receive any direct financial payment for participating in the studies. However, when you successfully complete this study, you will be eligible to enter a prize draw for the chance to win 1 in 4 $50 Coles e-gift cards. The exact odds of winning cannot be known because it will depend on the number of people who complete both the studies. These studies are advertised nationally so the odds of winning may be low. You can choose not to enter the prize draw at the end of the study.

Please note that researchers reserve the right to refuse entry into the prize draw to participants who do not take the research seriously. Data will be screened for abnormal response patterns.

Aside from entering a prize draw, you will be contributing to psychological research whose findings may result in benefiting the wider 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. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

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 as part of a PhD thesis to be submitted to the School

of Psychology, University of Sydney. This may also lead to a scientific journal publication or conference papers. In any of these publications, you will not be individually identified.

The electronic copy of the data will only be accessed by the study's researchers. The electronic copy of the data will be destroyed after five years upon the completion of the study. The collected data may be part of another study for investigating attitudes towards elderly people and people with dementia.

9. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can indicate your interest in receiving a lay summary of the research results by providing your contact details in the online survey at the end of this study, after you read the debrief. You will receive feedback after the study have concluded.

10. What if I would like further information?

If you like to know more about these studies at any stage of these studies, please feel free to contact Cherry Wan (cwan2832@uni.sydney.edu.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 [HREC Approval No: *2022/562*] 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

Participant Consent Form

Community members

Study 2: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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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 (1) to investigate what factors associating with dementia prejudice, and (2) to entangle the relationship between ageism prejudice and dementia prejudice.
- 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 respond to an online survey.
- I understand that my information may be used in future research conducted by the researchers.
- 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.
- I understand that I am free to withdraw from this study and that I can choose to withdraw any information I have already provided (unless the data has already been de-identified or published).
- 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 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.

If you give consent to participate in these research projects, please click 'Yes' below. If you do not wish to participate, please click 'No'.

☐ Yes, I have read the Participant Consent Form and I consent to my participation in this research project

☐ No, I have read the Participant Consent Form and I do NOT consent to my participation in this research project

Participant Debriefing Statement

Community members

Study 2: Ageism and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

What is a 'debrief'?

A debrief is the process of giving participants a fuller explanation of the study after the study's completion than was possible before or during the research.

Thank you for participating as a research participant in the present study.

This is a study for the study titled, "Reducing ageism and dementia stigma from a social psychology perspective". The term *stigma* was first coined by Goffman (1963) describing stigma is an attribute that is deeply discrediting. The term has been applied to various social categories, such as group defined by ethnicity, gender, sexual orientation, and physical and mental illness or disability. In the public stigma domain, people with dementia were associated with total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017).

Dementia is a neurodegenerative disease relating to loss of memory and other thinking abilities severe enough to interfere with daily life. People with dementia may not show obvious difference from the public in terms of physical appearance at the first glance, others may link the stereotype of dementia with the easily observed aged physical appearance, a scientifically approved associating factor with dementia. In that sense, others can attribute forgetfulness and erasure of self towards old people because old age is the only salient observable physical cue of people with dementia as portrayed by mass media (Low & Purwaningrum, 2020).

The study 2 aims to use video to elicit the emotional reactions to the target person from an East Asian ancestry background. In the second part of the study, participants were randomly assigned to watch either a male or female version of the following four conditions:

- elderly people with dementia
- elderly people without dementia
- younger people with dementia, and
- younger people without dementia

In this part, participants are asked to watch a particular video vignette with a description matching their assigned conditions. After watching the video vignette, they are asked to report their sympathy and contempt emotions elicited from the subject described in the vignette (Fiske et al., 2002).

We also measured your personality of openness to see the individual differences on attitudes towards older people. Finally, we asked your behavioural tendency under a certain occasion that you may face in real life. We want to know whether your attitude and emotional reactions will be directly reflected in your behaviour when interacting with our research target population.

In addition, the current study showing a target person from an East Asian ancestry background will be compared with the results from a previous study showing a target person from a White ancestry background. Compared to Western counterparts, Chinese students held more negative attitudes toward aging and older people (Luo et al., 2013). However, it is not clear whether the participants' attitudes were based on the general participant's attitude towards dementia or whether the attitudes were based on the participants' imagined target person, who could be an elderly stranger, their grandparents, and from different cultural backgrounds. In order to control this unknown variable, we will compare the results from presenting them with video stimulus showing an elderly stranger from East Asian and Anglo-European cultural backgrounds respectively.

What happens now?

After reading the debrief statement, do you still consent to your data being used in this research project (this is your final opportunity to withdraw from this study)?

☐ Yes, I consent to my data being used in this study
☐ No, I do NOT consent to my data being used in this study

Leave your contact to receive a lay summary of research report

If you want to receive a lay summary of research report after the research is concluded, you can simply click 'Yes, I want to receive a lay summary ...'. Otherwise, you are free to close this browser at any time. By clicking on 'Yes, I want to receive a lay summary..., you will be transferred to another survey website and asked to leave your name and email address. These details will only be used to communicate with you about the research results, and these details will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to receive a lay summary of research report and provide your contact details.

☐ Yes, I want to receive a lay summary of research report. I agree to provide my email address.

Entering the prize draw?

Now that you If you want to, you can enter the draw to win 1 of 4 Coles e-gift cards, each valued at $50. Simply click Yes, I want to enter the draw....'. Otherwise, you are free to close this browser at any time. By clicking on 'Yes, I want to enter the draw...., you will be transferred to another survey website and asked to leave your name and email address. These details will be entered in the draw and will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to enter the draw and provide your contact details.

☐ Yes, I want to enter the draw to have a chance to win a gift card. I agree to provide my email address.

If you have any questions about the study, please feel free to contact the Student Investigator, Cherry Wan at cwan2832@uni.sydney.edu.au or Chief Investigator, Fiona White at fiona.white@sydney.edu.au. If you find any questions or content in this study upsetting or distressing, please contact Mental Health Line (NSW) 1800 011 511 and Lifeline 13 11 14 (online chat or video also available 7pm – midnight). You are also encouraged to visit their local GPs or counsellors if you experience distress from any questions of the study. Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney, Australia on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).

Thank you for participating!

References:

Ballenger, J. F. (2017). Framing Confusion: Dementia, Society, and History. *AMA Journal of Ethics*, *19*(7), 713–719. https://doi.org/10.1001/journalofethics.2017.19.7.mhst1-1707

Fiske, S. T. (2018). Stereotype Content: Warmth and Competence Endure. *Current Directions in Psychological Science*, *27*(2), 67–73.

Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology*, *82*(6), 878–902. https://doi.org/10.1037/0022-3514.82.6.878

Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. Simon and Schuster.

Low, L.-F., & Purwaningrum, F. (2020). Negative stereotypes, fear and social distance: A systematic review of depictions of dementia in popular culture in the context of stigma. *BMC Geriatrics*, *20*, 477–494.

Nguyen, T., & Li, X. (2020). Understanding public-stigma and self-stigma in the context of dementia: A systematic review of the global literature. *Dementia*, *19*(2), 148–181. https://doi.org/10.1177/1471301218800122

E3. Community Member Sample (Prolific) Version

Participant Information Statement

Community members

Study 2: Ageism and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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1. What is this study about?

We are conducting a research study about the factors associating with attitude towards dementia and to discover the relationship between attitudes towards elderly people and people living with dementia. In addition, we will investigate whether the cultural ancestry of the elderly person and the person living with dementia will influence your ageism attitude and dementia attitude. The research results will provide a foundation for future studies on investigating attitudes towards elderly people and people living with dementia.

Participation Information Statement tells you about the research studies. Knowing what is involved will help you decide if you want to take part in this study. Taking part in this study is voluntary. Please read this sheet carefully and ask questions about anything that you do not understand or want to know more about.

By giving your consent to take part in these studies you are telling us that you:

✓ Understand what you have read.
✓ Agree to take part in the research studies as outlined below.
✓ Agree to the use of your personal information as described.

2. Who is running the study?

The study is being carried out by the following researchers:

- Professor Fiona White, Professor, School of Psychology, Faculty of Science, University of Sydney
- Professor Sharon Naismith, Leonard P Ullman Chair in Psychology, School of Psychology, Faculty of Science, University of Sydney
- Miss Cheuk Yue Wan, PhD student, School of Psychology, Faculty of Science, University of Sydney

Miss Cheuk Yue Wan is conducting this study as partial basis for the degree Doctor of Philosophy (Science) at The University of Sydney. This will take place under the

supervision of Professor Fiona White, Chief Investigator and Professor Sharon Naismith, Co-investigator.

3. Who can take part in the study?

We are seeking participants who are over 18 years old, fluent in English, living in Australia, and never been diagnosed with dementia. People who have been diagnosed with dementia are excluded because this research aims to investigate how other people view people living with dementia. You would also be required to comprehend all the information.

4. What will the study involve for me?

If you decide to take part in this study, you will be asked to complete an online survey by answering the questions listed. It will take approximately 25 minutes to complete the survey. You can complete the survey anywhere and anytime from your digital device with online services. Answering all questions in one time is not necessary, instead, you can revisit the same link to continue your unfinished survey because the online survey tool will automatically record your answer progress for 7 days. This study will ask your life experiences with elderly people, people living with dementia, general knowledge about dementia, your personality, and subjective views towards elderly people and people living with dementia. Then you will be presented a video. You will report your subjective views and emotions towards the target person described in the video. A sample question includes, “I would feel pity for the person”.

There will not be any audio/video/photographs/other recording involved. You are free to withdraw from this study at any time. You can choose to receive a lay summary of the research results at the end of the survey.

These studies should take approximately 25 minutes. This includes reading the Participant Information Statement and the full debrief of these studies at the conclusion of the survey. Everything will be kept confidential and anonymous.

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. If you decide to take part in the study and then change your mind you can withdraw by stopping responding to the survey and closing your web browser before your submission. Should you decide to withdraw from the survey, you will not be eligible to join the prize draw.

By submitting your survey, you consent to take part in the study. You can withdraw any time before you submit. At the end of the study, after reading the debrief statement, you will have a final opportunity to withdraw from the study. However, once your responses are submitted, they cannot be withdrawn. This is because they are anonymous, and we will not be able to tell which one yours is.

6. Are there any risks or costs?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in these studies. Nonetheless, you can withdraw at any point in the studies with no consequence. You will also have an opportunity to withdraw your response after the debrief at the end of the studies.

While answering the questions on this online survey, you may experience feelings of emotional and social distress. However, the likelihood and severity of experiencing this will be low to moderate. If you feel any social distress after completing the survey, you can voluntarily withdraw anytime during the survey by closing the web browser. You can also contact Mental Health Line (NSW) 1800 011 511 and Lifeline 13 11 14 (online chat or video also available 7pm – midnight). You are also encouraged to visit their local GPs or counsellors if you experience distress from any questions of the study.

7. Are there any benefits?

You will receive £3 financial payment for participating in the studies.

Please note that researchers reserve the right to reject participant submissions if the participants do not take the research seriously. Data will be screened for abnormal response patterns.

Aside from receiving the financial payment, you will be contributing to psychological research whose findings may result in benefiting the wider 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. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

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 as part of a PhD thesis to be submitted to the School of Psychology, University of Sydney. This may also lead to a scientific journal publication or conference papers. In any of these publications, you will not be individually identified.

The electronic copy of the data will only be accessed by the study's researchers. The electronic copy of the data will be destroyed after five years upon the completion of the

study. The collected data may be part of another study for investigating attitudes towards elderly people and people with dementia.

9. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can indicate your interest in receiving a lay summary of the research results by providing your contact details in the online survey at the end of this study, after you read the debrief. You will receive feedback after the study have concluded.

10. What if I would like further information?

If you like to know more about these studies at any stage of these studies, please feel free to contact Cherry Wan (cwan2832@uni.sydney.edu.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 [HREC Approval No: *2022/562*] 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

Participant Consent Form

Community members

Study 2: Ageism attitude and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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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 (1) to investigate what factors associating with dementia prejudice, and (2) to entangle the relationship between ageism prejudice and dementia prejudice.
- 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 respond to an online survey.
- I understand that my information may be used in future research conducted by the researchers.
- 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.
- I understand that I am free to withdraw from this study and that I can choose to withdraw any information I have already provided (unless the data has already been de-identified or published).
- 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 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.

If you give consent to participate in these research projects, please click ‘Yes’ below. If you do not wish to participate, please click ‘No’.

☐ Yes, I have read the Participant Consent Form and I consent to my participation in this research project

☐ No, I have read the Participant Consent Form and I do NOT consent to my participation in this research project

Participant Debriefing Statement

Community members

Study 2: Ageism and dementia attitude

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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What is a 'debrief'?

A debrief is the process of giving participants a fuller explanation of the study after the study's completion than was possible before or during the research.

Thank you for participating as a research participant in the present study.

This is a study for the study titled, "Reducing ageism and dementia stigma from a social psychology perspective". The term *stigma* was first coined by Goffman (1963) describing stigma is an attribute that is deeply discrediting. The term has been applied to various social categories, such as group defined by ethnicity, gender, sexual orientation, and physical and mental illness or disability. In the public stigma domain, people with dementia were associated with total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017).

Dementia is a neurodegenerative disease relating to loss of memory and other thinking abilities severe enough to interfere with daily life. People with dementia may not show obvious difference from the public in terms of physical appearance at the first glance, others may link the stereotype of dementia with the easily observed aged physical appearance, a scientifically approved associating factor with dementia. In that sense, others can attribute forgetfulness and erasure of self towards old people because old age is the only salient observable physical cue of people with dementia as portrayed by mass media (Low & Purwaningrum, 2020).

The study 2 aims to use video to elicit the emotional reactions to the target person from an East Asian ancestry background. In the second part of the study, participants were randomly assigned to watch either a male or female version of the following four conditions:

- elderly people with dementia
- elderly people without dementia
- younger people with dementia, and
- younger people without dementia

In this part, participants are asked to watch a particular video vignette with a description matching their assigned conditions. After watching the video vignette, they are asked to report their sympathy and contempt emotions elicited from the subject described in the vignette (Fiske et al., 2002).

We also measured your personality of openness to see the individual differences on attitudes towards older people. Finally, we asked your behavioural tendency under a certain occasion that you may face in real life. We want to know whether your attitude and emotional reactions will be directly reflected in your behaviour when interacting with our research target population.

In addition, the current study showing a target person from an East Asian ancestry background will be compared with the results from a previous study showing a target person from a White ancestry background. Compared to Western counterparts, Chinese students held more negative attitudes toward aging and older people (Luo et al., 2013). However, it is not clear whether the participants' attitudes were based on the general participant's attitude towards dementia or whether the attitudes were based on the participants' imagined target person, who could be an elderly stranger, their grandparents, and from different cultural backgrounds. In order to control this unknown variable, we will compare the results from presenting them with video stimulus showing an elderly stranger from East Asian and Anglo-European cultural backgrounds respectively.

What happens now?

After reading the debrief statement, do you still consent to your data being used in this research project (this is your final opportunity to withdraw from this study)?

☐ Yes, I consent to my data being used in this study
☐ No, I do NOT consent to my data being used in this study

Leave your contact to receive a lay summary of research report
If you want to receive a lay summary of research report after the research is concluded, you can simply click 'Yes, I want to receive a lay summary …'. Otherwise, you are free to close this browser at any time. By clicking on 'Yes, I want to receive a lay summary..., you will be transferred to another survey website and asked to leave your name and email address. These details will only be used to communicate with you about the research results, and these details will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to receive a lay summary of research report and provide your contact details.

☐ Yes, I want to receive a lay summary of research report. I agree to provide my name and email address.

If you have any questions about the study, please feel free to contact the Student Investigator, Cherry Wan at cwan2832@uni.sydney.edu.au or Chief Investigator, Fiona White at fiona.white@sydney.edu.au.

If you find any questions or content in this study upsetting or distressing, please contact Mental Health Line (NSW) 1800 011 511 and Lifeline 13 11 14 (online chat or video also

available 7pm – midnight). You are also encouraged to visit their local GPs or counsellors if you experience distress from any questions of the study.

Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney, Australia on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).

Thank you for participating!

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Appendix F

Study 2 Materials and Measures

Vignette condition 1 (Male, old, dementia; video link: https://youtu.be/2o0rpP7FuG4)

Harry is an 85-year-old widowered man with two children and sees his grandchildren regularly. Harry likes listening to jazz music and collecting antiques and has a small room in his home to store all the music collections from the 50s. These days Harry prefers reading the newspaper to using the internet. Harry is also a retired government employee, but recently he has been forgetting where he last left his keys to enter his home. A geriatric psychiatrist has since assessed Harry and he was diagnosed with dementia.

Vignette condition 2 (Male, old, healthy; video link: https://youtu.be/N76cL4AupUk)

Harry is an 85-year-old widowered man with two children and sees his grandchildren regularly. Harry likes listening to jazz music and collecting antiques. Harry has a small room in his home to store all the music collections from the 50s. These days Harry prefers reading the newspaper to using the internet. Harry is also a retired government employee, but recently he got an electricity bill that was higher than expected, and he is now thinking of how he will be able to pay it on time.

Vignette condition 3 (Male, middle-aged, dementia; video link: https://youtu.be/PWjGwpFUaZk)

Harry is a 60-year-old widowered man with two children and sees his grandchildren regularly. Harry likes listening to jazz music and collecting antiques and has a small room in his home to store all the music collections from the 50s. These days Harry prefers reading the newspaper to using the internet. Harry is also a retired government employee, but recently he

has been forgetting where he last left his keys to enter his home. A geriatric psychiatrist has since assessed Harry and he was diagnosed with dementia.

Vignette condition 4 (Male, middle-aged, healthy; video link: https://youtu.be/8mfGsvPUFk4)

Harry is a 60-year-old widowered man with two children and sees his grandchildren regularly. Harry likes listening to jazz music and collecting antiques. Harry has a small room in his home to store all the music collections from the 50s. These days Harry prefers reading the newspaper to using the internet. Harry is also a retired government employee, but recently he got an electricity bill that was higher than expected, and he is now thinking of how he will be able to pay it on time.

Vignette condition 5 (Female, old, dementia; video link: https://youtu.be/1qaOAaBgSXA)

Jane is an 85-year-old widowered woman with two children and sees her grandchildren regularly. Jane likes listening to jazz music and collecting antiques and has a small room in her home to store all the music collections from the 50s. These days Jane prefers reading the newspaper to using the internet. Jane is also a retired government employee, but recently she has been forgetting where she last left her keys to enter his/her home. A geriatric psychiatrist has since assessed Jane and she was diagnosed with dementia.

Vignette condition 6 (Female, old, healthy; video link: https://youtu.be/zhOjhlOvtfs)

Jane is an 85-year-old widowered woman with two children and sees her grandchildren regularly. Jane likes listening to jazz music and collecting antiques. Jane has a small room in her home to store all the music collections from the 50s. These days Jane prefers reading the newspaper to using the internet. Jane is also a retired government employee, but recently she

got an electricity bill that was higher than expected, and she is now thinking of how she will be able to pay it on time.

Vignette condition 7 (Female, middle-aged, dementia; video link: https://youtu.be/dbmheSvmiFI)

Jane is a 60-year-old widowered woman with two children and sees her grandchildren regularly. Jane likes listening to jazz music and collecting antiques and has a small room in her home to store all the music collections from the 50s. These days Jane prefers reading the newspaper to using the internet. Jane is also a retired government employee, but recently she has been forgetting where she last left her keys to enter his/her home. A geriatric psychiatrist has since assessed Jane and she was diagnosed with dementia.

Vignette condition 8 Female, middle-aged, healthy: https://youtu.be/9clBAg2CnE0

Jane is a 60-year-old widowered woman with two children and sees her grandchildren regularly. Jane likes listening to jazz music and collecting antiques. Jane has a small room in her home to store all the music collections from the 50s. These days Jane prefers reading the newspaper to using the internet. Jane is also a retired government employee, but recently she got an electricity bill that was higher than expected, and she is now thinking of how she will be able to pay it on time.

Negative Emotions and Behavioural Intentions towards People living with Dementia

1. I would feel aggravated by Harry/Jane.
2. Harry/Jane would terrify me.
3. How angry would you feel at Harry/Jane?
4. If I were an employer, I would interview Harry/Jane for a job.
5. I would be willing to talk to Harry/Jane about his/her problems.

6. How irritated would you feel by Harry/Jane?
7. I would share a carpool with Harry/Jane every day.
8. How scared of Harry/Jane would you feel?
9. How likely is it that you would help Harry/Jane?
10. How certain would you feel that you would help Harry/Jane?
11. How frightened of Harry/Jane would you feel?
12. If I were a landlord, I probably would rent an apartment to Harry/Jane.

Negative Attitudes towards People living with Dementia

1. Persons with dementia should be institutionalized. (reverse-coded)
2. Persons with dementia are not as dangerous as people think.
3. Only those with a low education level would develop dementia. (reverse-coded)
4. People who live at home with relatives with dementia would be looked down upon by others. (reverse-coded)
5. Research on dementia is nothing but a good way for pharmaceutical companies to make profits. (reverse-coded)
6. Resources for medical research should be devoted to the acute conditions of those with productive activities. (reverse-coded)
7. Society should treat persons with dementia with more tolerance.
8. I would avoid contact with people with dementia. [b]
9. I would avoid disclosing the truth if my relatives or friends had dementia. (reverse-coded)
10. I would feel embarrassed going out with a relative or friend who has dementia. (reverse-coded)
11. Increasing spending for dementia care services is a waste of money. (reverse-coded)

Dementia Knowledge

1. Dementia is a normal part of the ageing process. (reverse-coded)
2. Alzheimer's disease is the most common form of dementia.
3. People can recover from the most common forms of dementia. (reverse-coded)

4. Dementia does not result from physical changes in the brain. (reverse-coded)
5. Planning for end of life care is generally not necessary following a diagnosis of dementia.
6. Blood vessel disease (vascular dementia) is the most common form of dementia. (reverse-coded)
7. Most forms of dementia do not generally shorten a person's life. (reverse-coded)
8. Having high blood pressure increases a person's risk of developing dementia.
9. Maintaining a healthy lifestyle does not reduce the risk of developing the most common forms of dementia. (reverse-coded)
10. Symptoms of depression can be mistaken for symptoms of dementia.
11. Exercise is generally beneficial for people experiencing dementia.
12. Early diagnosis of dementia does not generally improve quality of life for people experiencing the condition. (reverse-coded)
13. The sudden onset of cognitive problems is characteristic of common forms of dementia. (reverse-coded)
14. It is impossible to communicate with a person who has advanced dementia. (reverse-coded)
15. A person experiencing advanced dementia will not generally respond to changes in their physical environment. (reverse-coded)
16. It is important to correct a person with dementia when they are confused. (reverse-coded)
17. People experiencing advanced dementia often communicate through body language.
18. Uncharacteristic behaviors in a person experiencing dementia are generally a response to unmet needs.
19. Medications are the most effective way of treating behavioral symptoms of dementia. (reverse-coded)
20. People experiencing dementia do not generally have problems making decision. (reverse-coded)
21. Movement is generally affected in the later stages of dementia.
22. People with advanced dementia may have difficulty speaking.
23. People experiencing dementia often have difficulty learning new skills.

24. Difficulty eating and drinking generally occurs in the later stages of dementia.
25. Daily care for a person with advanced dementia is effective when it focuses on providing comfort.

Contact Quality with People living with Dementia and Older People

To what extent did you experience the contact with people living with dementia as…

1. …equal (1 = *definitely not* to 7 = *definitely yes*)
2. …involuntary or voluntary (*1 = definitely involuntary* to *7 = definitely voluntary*)
3. …superficial or intimate (*1 = very superficial* to *7 = very intimate*)
4. …pleasant (1 = *not at all* to 7 = *very*)
5. …competitive or cooperative (1 = *very competitive* to *7 = very cooperative*)

To what extent did you experience the contact with elderly people as…

1. …equal (1 = *definitely not* to 7 = *definitely yes*)
2. …involuntary or voluntary (*1 = definitely involuntary* to *7 = definitely voluntary*)
3. …superficial or intimate (*1 = very superficial* to *7 = very intimate*)
4. …pleasant (1 = *not at all* to 7 = *very*)
5. …competitive or cooperative (1 = *very competitive* to *7 = very cooperative*)

Appendix G

Study 3 Materials and Measures

Video-based vignettes used in Study 3

Target's characteristics:	Video links:
White, male, older, living with dementia	https://youtu.be/2o0rpP7FuG4
White, male, older, healthy	https://youtu.be/N76cL4AupUk
White, male, middle-aged, living with dementia	https://youtu.be/PWjGwpFUaZk
White, male, middle-aged, healthy	https://youtu.be/8mfGsvPUFk4
White, female, older, living with dementia	https://youtu.be/1qaOAaBgSXA
White, female, older, healthy	https://youtu.be/zhOjhlOvtfs
White, female, middle-aged, living with dementia	https://youtu.be/dbmheSvmiFI
White, female, middle-aged, healthy	https://youtu.be/9clBAg2CnE0
East Asian, male, older, living with dementia	https://youtu.be/XGFw06_q-H0
East Asian, male, older, healthy	https://youtu.be/33AgUKW563g
East Asian, male, middle-aged, living with dementia	https://youtu.be/eYCQJpn-xfg
East Asian, male, middle-aged, healthy	https://youtu.be/Z0KH3pnlLC0
East Asian, female, older, living with dementia	https://youtu.be/GVf00HTTbzU
East Asian, female, older, healthy	https://youtu.be/wIW_ETkIIlE
East Asian, female, middle-aged, living with dementia	https://youtu.be/qjk2PEY80e8
East Asian, female, middle-aged, healthy	https://youtu.be/AH3b5fj2Cmw

The audio content of the video (the narrative will be read out by the same voice actress across four conditions):

	Dementia	Without dementia
60-year-old	Li Ming/Liu Mei is a 60-year-old widowered wo/man with two children and sees his/her grandchildren regularly. Li Ming/Liu Mei likes listening to jazz music and collecting antiques and has a small room in his/her home to store all the music collections from the 80s. These days Li Ming/Liu Mei prefers reading the newspaper to using the internet. Li Ming / Liu Mei is also a retired government employee, but recently s/he has been forgetting where s/he last left his/her keys to enter his/her home. A geriatric psychiatrist has since assessed Li Ming/ Liu Mei and s/he was diagnosed with dementia.	Li Ming/Jane is a 60-year-old widowered wo/man with two children and sees his/her grandchildren regularly. Sometimes Li Ming/Liu Mei forgets where he/she last left his keys to enter his home. Li Ming/Liu Mei likes listening to jazz music and collecting antiques. Li Ming/Liu Mei has a small room in his/her home to store all the music collections from the 80s. These days Li Ming/Liu Mei prefers reading the newspaper to using the internet. Li Ming/Liu Mei is also a retired government employee, but recently s/he got an electricity bill that was higher than expected, and s/he is now thinking of how he will be able to pay it on time.
85-year-old	Li Ming/ Liu Mei is an 85-year-old widowered wo/man with two children and sees his/her grandchildren regularly. Li Ming/ Liu Mei likes listening to jazz music and collecting antiques and has a small room in his/her home to store all the music collections from the 50s. These days Li Ming/ Liu Mei prefers reading the newspaper to using the internet. Li Ming/ Liu Mei is also a retired government employee, but recently s/he has been forgetting where s/he last left his/her keys to enter his/her home. A geriatric psychiatrist has since assessed Li Ming/ Liu Mei and s/he was diagnosed with dementia.	Li Ming/ Liu Mei is an 85-year-old widowered wo/man with two children and sees his/her grandchildren regularly. Sometimes Li Ming/ Liu Mei forgets where he/she last left his keys to enter his home. Li Ming/ Liu Mei likes listening to jazz music and collecting antiques. Li Ming/Liu Mei has a small room in his/her home to store all the music collections from the 50s. These days Li Ming/Liu Mei prefers reading the newspaper to using the internet. Li Ming/ Liu Mei is also a retired government employee, but recently s/he got an electricity bill that was higher than expected, and s/he is now thinking of how he will be able to pay it on time.

Negative Emotions and Behavioural Intentions towards People living with Dementia

1. I would feel aggravated by Harry/Jane.
2. Harry/Jane would terrify me.
3. How angry would you feel at Harry/Jane?
4. If I were an employer, I would interview Harry/Jane for a job.
5. I would be willing to talk to Harry/Jane about his/her problems.

6. How irritated would you feel by Harry/Jane?
7. I would share a carpool with Harry/Jane every day.
8. How scared of Harry/Jane would you feel?
9. How likely is it that you would help Harry/Jane?
10. How certain would you feel that you would help Harry/Jane?
11. How frightened of Harry/Jane would you feel?
12. If I were a landlord, I probably would rent an apartment to Harry/Jane.

Negative Attitudes towards People living with Dementia

1. Persons with dementia should be institutionalized. (reverse-coded)
2. Persons with dementia are not as dangerous as people think.
3. Only those with a low education level would develop dementia. (reverse-coded)
4. People who live at home with relatives with dementia would be looked down upon by others. (reverse-coded)
5. Research on dementia is nothing but a good way for pharmaceutical companies to make profits. (reverse-coded)
6. Resources for medical research should be devoted to the acute conditions of those with productive activities. (reverse-coded)
7. Society should treat persons with dementia with more tolerance.
8. I would avoid contact with people with dementia. [b]
9. I would avoid disclosing the truth if my relatives or friends had dementia. (reverse-coded)
10. I would feel embarrassed going out with a relative or friend who has dementia. (reverse-coded)
11. Increasing spending for dementia care services is a waste of money. (reverse-coded)

Appendix H

Study 4 Ethics Approval Letter

RESEARCH INTEGRITY
& ETHICS ADMINISTRATION

HUMAN RESEARCH ETHICS APPROVAL

The University of Sydney confirms that this project meets the requirements of the National Statement on Ethical Conduct in Human Research.

Project identifier:	2024/HE000615
Project title:	Vicarious contact to reduce dementia stigma
Version:	0.01
Chief Investigator:	Professor Fiona White
Authorised project team:	Miss Cheuk Yue Wan Professor Sharon Naismith
Date of approval:	Wednesday, 5 June, 2024
Project end date:	4. June 2028

Provisos

2024/HE000615 0.01 - Initial Application - Approval with provisos

1. The application includes 'We do not foresee the data collected in this project will be shared with other researchers.' That is acceptable, but as no reasons were given, please consider the National Statement's section on the commitment to "disseminating and communicating results", it also states that research conducted with integrity involves a commitment to communicate results "in ways that permit scrutiny", and publishing de-identified data (open data) would facilitate such scrutiny. Have you considered if it is appropriate and valuable to share deidentified/anonymous data with a relevant public data bank for use in future research, instead of simply deleting it? If you think it is appropriate and valuable, consider updating the Participant Information Statement to include this information.
2. Please ensure that contact details for giftcard/feedback are collected by linking to a separate survey. This preserves patient confidentiality by ensuring that participant names aren't linked with survey responses. Both Qualtrics and RedCap provide this feature.
3. Correct typos before use: Advertisement should say "Never been", not "Never being diagnosed with dementia", and "persionality" has an extra 'i' in it. In Scenarios: "After listening to you, this old wo/man keeps smiling to you, but murmured something you did not mention." Should this be "hear"?
4. It will be a condition of approval that permission to post adverts is obtained and kept on file. You do not need to provide a copy to the Ethics Office.

Project summary

People with dementia may have received different forms of public stigma, such as stereotype, prejudice, and discrimination (Corrigan & Watson, 2002; Nguyen & Li, 2020). People with dementia were associated with total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017). In order to address this problem, we are aiming to research the effectiveness of a prejudice reduction method, vicarious contact, on dementia stigma reduction. Vicarious contact consists of the observation of an interaction between ingroup and outgroup members (White et al., 2020; Dovidio et al., 2011). Drawing from the social learning theory (Bandura, 1986), observing the actions of another person, particularly someone with whom one identifies, can expand one's knowledge and repertoire about how one can behave. Vicarious contact intervention has been found to reduce prejudice for outgroup members, but it was never tested in people without dementia and people with dementia context.

Human Ethics Approval certificate

Documents approved

Document type	File name	Document version	Application version
Participant Consent Form (PCF)	consent form_study 3_community.docx	1	0.1
Participant Consent Form (PCF)	consent form_study 3_student.docx	1	0.1
Other	debriefing statement_study3_community.docx	1	0.1
Other	debriefing statement_study3_student.docx	1	0.1
Participant Information Statement (PIS)	information statement_study3_community.docx	1	0.1
Participant Information Statement (PIS)	information statement_study3_community_prolific.docx	1	0.1
Participant Information Statement (PIS)	information statement_study3_students.docx	1	0.1
Recruitment or advertising material	poster.pdf	1	0.1
Application Attachment	project-description-vicarious.docx	1	0.1
Recruitment or advertising material	prolific advertisement.docx	1	0.1
Survey or questionnaire	Questionnaire measures_study3.docx	1	0.1
Recruitment or advertising material	SONA word advertisements_study3.docx	1	0.1

Conditions of Approval for Clinical Trials

This letter constitutes ethical approval only. This project cannot proceed at any site until the necessary research governance authorisation is obtained.

- If your study is sponsored by the University or is to be conducted on a University of Sydney site, you must comply with additional University governance requirements prior to commencing at each site. Please contact the Clinical Trials Support Office at clinical-trials.research@sydney.edu.au.
- Clinical Trials must be registered on a clinical trials registry that complies with the International Committee of Medical Journal Editors (ICMJE). For trials conducted in Australia or New Zealand registration should be on the Australian New Zealand Clinical Trial Registry before recruitment of the first subject (http://www.anzctr.org.au/).
- If your trial is to be conducted under the Clinical Trials Notification (CTN) or Clinical Trials Approval (CTA) schemes should not commence until it has been notified to the Therapeutic Goods Administration (TGA).

Conditions of Approval

- Research must be conducted according to the approved proposal.

Human Ethics Approval certificate

- An annual progress report must be submitted on or before the anniversary of approval and a final report on completion of the project.
- You must report as soon as practicable anything that might warrant review of ethical approval of the project including:
  - Serious or unexpected adverse events (which should be reported within 72 hours).
  - Unforeseen events that might affect continued ethical acceptability of the project.
- Any changes to the proposal must be approved prior to their implementation (except where an amendment is undertaken to eliminate *immediate* risk to participants).
- Researchers working on this project must be sufficiently qualified by education, training, and experience for their role, or adequately supervised. Changes to the project team must be reported and approved.
- Researchers must disclose any actual, potential of perceived conflicts of interest, including any financial or other interest or affiliation, as relevant to this project.
- Research data and primary materials must be retained and stored in accordance with relevant legislation and University guidelines.
- Ethics approval is dependent upon ongoing compliance of the research with the *National Statement on Ethical Conduct in Human Research*, the *Australian Code for the Responsible Conduct of Research*, applicable legal requirements, and with University policies, procedures, and governance requirements.
- If your research project is a clinical trial and is being sponsored by the University or is to be conducted on a University of Sydney site, you must comply with additional University governance requirements prior to commencing your Clinical Trial.
- The University may conduct audits on approved projects.
- The Chief Investigator has ultimate responsibility for the conduct of the research and is responsible for ensuring all others involved will conduct the research in accordance with the above.

Ethics Committee Representative

HREC 1
On behalf of the University of Sydney

The University of Sydney HRECs are constituted and operate in accordance with the National Statement on Ethical Conduct in Human Research and the Australian Code for the Responsible Conduct of Research (NHMRC). All personnel named on the project should be acquainted with these documents.

Research Integrity & Ethics Administration
Research Portfolio
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CRICOS 00026A

Appendix I

Study 4 Detailed Design Rationale for Vicarious Contact Videos

Concerns were raised regarding the perceived artificiality of certain scenes in the vicarious contact videos (e.g., cooking posture and scripted dialogue), and whether alternative approaches, such as recruiting people living with dementia, using professional actors, or leveraging existing authentic materials, could enhance realism and credibility.

The video stimuli were intentionally scripted to operationalise Allport's (1954) optimal contact conditions—equal status, cooperation, shared goals, and institutional support—which form the theoretical foundation of the intervention. Accurately embedding these conditions required precise control over interaction structure, dialogue, and behavioural cues. As such, the scenes were designed to prioritise theoretical fidelity over naturalistic spontaneity, ensuring that each condition systematically reflected the intended mechanism of stigma reduction.

To achieve this, trained and experienced actors were employed and followed structured scripts and behavioural protocols. This ensured consistency in message delivery, interaction tone, and non-verbal cues across all experimental conditions. Such standardisation is critical in experimental research, as it reduces unintended variability and allows observed effects to be more confidently attributed to the manipulated variables rather than uncontrolled differences in performance or interaction dynamics.

This approach is consistent with theory-driven intervention design frameworks (Michie et al., 2011), which emphasise the importance of explicitly specifying intervention components, mechanisms, and delivery formats. In this context, scripting was not a limitation but a methodological necessity, enabling the systematic translation of abstract theoretical principles (i.e., Allport's contact conditions) into observable and replicable interaction sequences.

Alternative approaches were carefully considered. Recruiting people living with dementia could potentially enhance ecological validity; however, this approach introduces both methodological and ethical challenges. From a methodological perspective, naturally occurring interactions are inherently variable in terms of communication style, cognitive capacity, and responsiveness, which would reduce experimental control and compromise comparability across participants. From an ethical standpoint, filming individuals living with dementia raises important considerations regarding informed consent, fluctuating capacity, potential distress, and the burden of repeated or staged performances required for experimental standardisation.

Similarly, the use of existing authentic materials (e.g., documentary footage) or unscripted interactions may increase perceived realism but would limit the ability to manipulate and isolate theoretically relevant variables, such as equal status or cooperative goal structure. These approaches are therefore less suitable for hypothesis-driven experimental designs that aim to test specific mechanisms of stigma reduction.

To balance experimental control and ecological plausibility, actors were recruited via StarNow.com and local casting networks, with selection criteria including gender, age group, cultural background, and prior acting experience. All actors were compensated at an hourly rate of AUD $50. Prior to filming, actors attended a paid one-hour online briefing session in which they were trained on the study objectives, theoretical framework, behavioural expectations, and delivery of scripted dialogue. During filming, actors adhered to structured protocols designed to model positive, cooperative, and respectful interactions consistent with the intervention aims.

It is acknowledged that scripted interactions may appear somewhat artificial. However, in the context of experimental research, such structure enables the isolation of theoretically

meaningful components and ensures reproducibility across participants and future studies. Importantly, a pilot manipulation check (see Appendix L) indicated that participants were able to recognise key intended features of the stimuli, including ingroup identification and the presence of Allport's contact conditions, suggesting that the videos successfully conveyed the targeted mechanisms despite their structured format.

Future research may build on this work by exploring hybrid approaches, such as semi-scripted or co-produced interactions involving people living with dementia, to further enhance ecological validity while maintaining sufficient experimental control.

Appendix J

Study 4 Participant Information Statement, Consent Form and Debriefing Statement

J1. Student Sample Version

Participant Information Statement

Students

Contact experience and attitude towards people with dementia

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

1. What is this study about?

We are conducting a research study about how contact experience is associated with one's attitude toward people with dementia.

Participation Information Statement tells you about the research studies. Knowing what is involved will help you decide if you want to take part in this study. Taking part in this study is voluntary. Please read this sheet carefully and ask questions about anything that you do not understand or want to know more about.

By giving your consent to take part in these studies you are telling us that you:

✓ Understand what you have read.
✓ Agree to take part in the research studies as outlined below.
✓ Agree to the use of your personal information as described.

2. Who is running the study?

The study is being carried out by the following researchers:

- Professor Fiona White, Professor, School of Psychology, Faculty of Science, University of Sydney
- Professor Sharon Naismith, Leonard P Ullman Chair in Psychology, School of Psychology, Faculty of Science, University of Sydney
- Miss Cheuk Yue Wan, PhD student, School of Psychology, Faculty of Science, University of Sydney

Miss Cheuk Yue Wan is conducting this study as partial basis for the degree Doctor of Philosophy (Science) at The University of Sydney. This will take place under the supervision of Professor Fiona White, Chief Investigator and Professor Sharon Naismith, Co-investigator.

3. Who can take part in the study?

We are seeking participants who are over 18 years old, fluent in English, living in Australia, from an East Asian cultural background, currently university students, cisgender, and never been diagnosed with dementia. People who have been diagnosed with dementia are excluded because this research aims to investigate how other people view people living with dementia. You would also be required to comprehend all the information.

4. What will the study involve for me?

If you decide to take part in this study, you will be asked to complete an online survey by answering the questions listed. It will take approximately 25 minutes to complete the survey. You can complete the survey anywhere and anytime from your digital device with online services. Answering all questions in one time is not necessary, instead, you can revisit the same link to continue your unfinished survey because the online survey tool will automatically record your answer progress for 7 days. This study will ask your life experiences with elderly people, people living with dementia, general knowledge about dementia, your personality, and subjective views towards elderly people and people living with dementia. Then you will have a chance to be presented a video. You will report your subjective views and emotions towards a target person. A sample question includes, "I would feel pity for the person".

There will not be any audio/video/photographs/other recording involved. You are free to withdraw from this study at any time. You can choose to receive a lay summary of the research results at the end of the survey.

These studies should take approximately 25 minutes. This includes reading the Participant Information Statement and the full debrief of these studies at the conclusion of the survey. Everything will be kept confidential and anonymous.

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. If you decide to take part in the study and then change your mind you can withdraw by stopping responding to the survey and closing your web browser before your submission. Should you decide to withdraw from the survey, you will not be eligible to the 0.5 course credit points (equivalent to 30 minutes) for your undergraduate psychology unit.

By submitting your survey, you consent to take part in the study. You can withdraw any time before you submit. At the end of the study, after reading the debrief statement, you will have a final opportunity to withdraw from the study. However, once your responses are submitted, they cannot be withdrawn. This is because they are anonymous, and we will not be able to tell which one yours is.

6. Are there any risks or costs?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in these studies. Nonetheless, you can withdraw at any point in the studies with no consequence. You will also have an opportunity to withdraw your response after the debrief at the end of the studies.

While answering the questions on this online survey, you may experience feelings of emotional and social distress. However, the likelihood and severity of experiencing this will be low to moderate. If you feel any social distress after completing the survey, you can voluntarily withdraw anytime during the survey by closing the web browser. You can also contact the University of Sydney's Counselling and Psychological Services (CAPS) by phone: (02) 8627 8433 or (02) 8627 8437; or by email: counselling.service@sydney.edu.au. CAPS is located on Level 5 of the Jane Foss Russell Building (G02).

7. Are there any benefits?

Students that complete the two study will receive 0.5 course credit points (equivalent to 30 minutes) for your undergraduate psychology unit.

Other than credit points, we cannot guarantee that you will receive any other direct benefits from being part of the studies. Nevertheless, students may benefit from being exposed to first-hand psychological research.

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. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

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 as part of a PhD thesis to be submitted to the School of Psychology, University of Sydney. This may also lead to a scientific journal publication or conference papers. In any of these publications, you will not be individually identified.

The electronic copy of the original data will only be accessed by the study's researchers. After deidentifying the data, it is possible that the deidentified/anonymous data will be shared with a relevant public data bank for use in future research including but not limited to the topic related to attitudes towards elderly people and people with dementia.

9. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can indicate your interest in receiving a lay summary of the research results by providing your

contact details in the online survey at the end of this study, after you read the debrief. You will receive feedback after the study have concluded.

10. What if I would like further information?

If you like to know more about these studies at any stage of these studies, please feel free to contact Cherry Wan (cwan2832@uni.sydney.edu.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 [HREC Approval No: *2024/615*] 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

Participant Consent Form

Students

Contact experience and attitude towards people with dementia

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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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 explore the relationship of contact experience and one's attitude towards people living with dementia.
- 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 respond to an online survey.
- I understand that my information may be used in future research conducted by the researchers.
- 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.
- I understand that I am free to withdraw from this study and that I can choose to withdraw any information I have already provided (unless the data has already been de-identified or published).
- 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 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.

If you give consent to participate in these research projects, please click 'Yes' below. If you do not wish to participate, please click 'No'.

☐ Yes, I have read the Participant Consent Form and I consent to my participation in this research project

☐ No, I have read the Participant Consent Form and I do NOT consent to my participation in this research project

Participant Debriefing Statement

Students

Contact experience and attitude towards people with dementia

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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Thank you for participating as a research participant in the present study.

This is a study for the study titled, "Reducing ageism and dementia stigma from a social psychology perspective". The term *stigma* was first coined by Goffman (1963) describing stigma is an attribute that is deeply discrediting. The term has been applied to various social categories, such as group defined by ethnicity, gender, sexual orientation, and physical and mental illness or disability. In the public stigma domain, people with dementia were associated with total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017).

Dementia is a neurodegenerative disease relating to loss of memory and other thinking abilities severe enough to interfere with daily life. People with dementia may not show obvious difference from the public in terms of physical appearance at the first glance, others may link the stereotype of dementia with the easily observed aged physical appearance, a scientifically approved associating factor with dementia. In that sense, others can attribute forgetfulness and erasure of self towards old people because old age is the only salient observable physical cue of people with dementia as portrayed by mass media (Low & Purwaningrum, 2020).

This study aims to test whether dementia attitude will be improved after exposing participants to a video portraying the interaction of their identified ingroup member and outgroup member (people living with dementia). This type of mediated contact is also vicarious contact (Joyce & Harwood, 2014). A meta-analysis showed that vicarious contact that portray a positive interaction can reduce prejudice (Banas et al., 2020). However, to the best of our knowledge, none of the vicarious contact studies focused on people with dementia as an outgroup member. Therefore, this study would provide empirical evidence to support this hypothesis.

We also measured your personality of openness to see the individual differences on attitudes towards older people. Finally, we asked your behavioural tendency under a certain occasion that you may face in real life. We want to know whether your attitude and emotional reactions will be directly reflected in your behaviour when interacting with our research target population.

What happens now?

After reading the debrief statement, do you still consent to your data being used in this research project (this is your final opportunity to withdraw from this study)?

☐ Yes, I consent to my data being used in this study
☐ No, I do NOT consent to my data being used in this study

Leave your contact to receive a lay summary of research report
If you want to receive a lay summary of research report after the research is concluded, you can simply click 'Yes, I want to receive a lay summary …'. Otherwise, you are free to close this browser at any time. By clicking on 'Yes, I want to receive a lay summary..., you will be transferred to another survey website and asked to leave your name and email address. These details will only be used to communicate with you about the research results, and these details will be kept separately from your survey responses to protect your privacy. Clicking on the link shows that you agree to receive a lay summary of research report and provide your contact details.

☐ Yes, I want to receive a lay summary of research report. I agree to provide my name and email address.

If you have any questions about the study, please feel free to contact the Student Investigator, Cherry Wan at cwan2832@uni.sydney.edu.au or Chief Investigator, Fiona White at fiona.white@sydney.edu.au.

If you find any questions or content in this study upsetting or distressing, please contact the University of Sydney's Counselling and Psychological Services (CAPS) by phone: (02) 8627 8433 or (02) 8627 8437; or by email: counselling.service@sydney.edu.au for confidential support from qualified counsellors and trained volunteers. CAPS is located on Level 5 of the Jane Foss Russell Building (G02).

Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney, Australia on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).

Thank you for participating!

References:
Ballenger, J. F. (2017). Framing Confusion: Dementia, Society, and History. *AMA Journal of Ethics*, *19*(7), 713–719. https://doi.org/10.1001/journalofethics.2017.19.7.mhst1-1707

Banas, J. A., Bessarabova, E., & Massey, Z. B. (2020). Meta-Analysis on Mediated Contact and Prejudice. *Human Communication Research*, *46*(2–3), 120–160. https://doi.org/10.1093/hcr/hqaa004

Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. Simon and Schuster.

Joyce, N., & Harwood, J. (2014). Improving Intergroup Attitudes through Televised Vicarious Intergroup Contact: Social Cognitive Processing of Ingroup and Outgroup Information. *Communication Research*, *41*(5), 627–643. https://doi.org/10.1177/0093650212447944

Low, L.-F., & Purwaningrum, F. (2020). Negative stereotypes, fear and social distance: A systematic review of depictions of dementia in popular culture in the context of stigma. *BMC Geriatrics*, *20*(1), 477–494. https://doi.org/10.1186/s12877-020-01754-x

J2. Community Member Sample Version

Participant Information Statement

Community members

Contact experience and attitude towards people with dementia

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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1. What is this study about?

We are conducting a research study about how contact experience is associated with one's attitude toward people with dementia.

Participation Information Statement tells you about the research studies. Knowing what is involved will help you decide if you want to take part in this study. Taking part in this study is voluntary. Please read this sheet carefully and ask questions about anything that you do not understand or want to know more about.

By giving your consent to take part in these studies you are telling us that you:

✓ Understand what you have read.
✓ Agree to take part in the research studies as outlined below.
✓ Agree to the use of your personal information as described.

2. Who is running the study?

The study is being carried out by the following researchers:

- Professor Fiona White, Professor, School of Psychology, Faculty of Science, University of Sydney
- Professor Sharon Naismith, Leonard P Ullman Chair in Psychology, School of Psychology, Faculty of Science, University of Sydney
- Miss Cheuk Yue Wan, PhD student, School of Psychology, Faculty of Science, University of Sydney

Miss Cheuk Yue Wan is conducting this study as partial basis for the degree Doctor of Philosophy (Science) at The University of Sydney. This will take place under the supervision of Professor Fiona White, Chief Investigator and Professor Sharon Naismith, Co-investigator.

3. Who can take part in the study?

We are seeking participants who are over 18 years old, fluent in English, living in Australia, and never been diagnosed with dementia. People who have been diagnosed with dementia are excluded because this research aims to investigate how other people view people living with dementia. You would also be required to comprehend all the information.

4. What will the study involve for me?

If you decide to take part in this study, you will be asked to complete an online survey by answering the questions listed. It will take approximately 25 minutes to complete the survey. You can complete the survey anywhere and anytime from your digital device with online services. Answering all questions in one time is not necessary, instead, you can revisit the same link to continue your unfinished survey because the online survey tool will automatically record your answer progress for 7 days. This study will ask your life experiences with elderly people, people living with dementia, general knowledge about dementia, your personality, and subjective views towards elderly people and people living with dementia. Then you will be presented a video. You will report your subjective views and emotions towards the target person described in the video. A sample question includes, "I would feel pity for the person".

There will not be any audio/video/photographs/other recording involved. You are free to withdraw from this study at any time. You can choose to receive a lay summary of the research results at the end of the survey.

These studies should take approximately 25 minutes. This includes reading the Participant Information Statement and the full debrief of these studies at the conclusion of the survey. Everything will be kept confidential and anonymous.

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. If you decide to take part in the study and then change your mind you can withdraw by stopping responding to the survey and closing your web browser before your submission. Should you decide to withdraw from the survey, you will not be eligible to join the prize draw.

By submitting your survey, you consent to take part in the study. You can withdraw any time before you submit. At the end of the study, after reading the debrief statement, you will have a final opportunity to withdraw from the study. However, once your responses are submitted, they cannot be withdrawn. This is because they are anonymous, and we will not be able to tell which one yours is.

6. Are there any risks or costs?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in these studies. Nonetheless, you can withdraw at any point in the studies with no consequence. You will also have an opportunity to withdraw your response after the debrief at the end of the studies.

While answering the questions on this online survey, you may experience feelings of emotional and social distress. However, the likelihood and severity of experiencing this will be low to moderate. If you feel any social distress after completing the survey, you can voluntarily withdraw anytime during the survey by closing the web browser. You can also contact the University of Sydney's Counselling and Psychological Services (CAPS) by phone: (02) 8627 8433 or (02) 8627 8437; or by email: counselling.service@sydney.edu.au. CAPS is located on Level 5 of the Jane Foss Russell Building (G02).

7. Are there any benefits?

You will not receive any direct financial payment for participating in the studies. However, when you successfully complete this study, you will be eligible to enter a prize draw for the chance to win 1 in 4 $50 VISA e-gift cards. The exact odds of winning cannot be known because it will depend on the number of people who complete both the studies. These studies are advertised nationally so the odds of winning may be low. You can choose not to enter the prize draw at the end of the study.

Please note that researchers reserve the right to refuse entry into the prize draw to participants who do not take the research seriously. Data will be screened for abnormal response patterns.

Aside from entering a prize draw, you will be contributing to psychological research whose findings may result in benefiting the wider 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. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

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 as part of a PhD thesis to be submitted to the School of Psychology, University of Sydney. This may also lead to a scientific journal publication or conference papers. In any of these publications, you will not be individually identified.

The electronic copy of the original data will only be accessed by the study's researchers. After deidentifying the data, it is possible that the deidentified/anonymous data will be shared with a relevant public data bank for use in future research including but not limited to the topic related to attitudes towards elderly people and people with dementia.

9. **Will I be told the results of the study?**

You have a right to receive feedback about the overall results of this study. You can indicate your interest in receiving a lay summary of the research results by providing your contact details in the online survey at the end of this study, after you read the debrief. You will receive feedback after the study have concluded.

10. **What if I would like further information?**

If you like to know more about these studies at any stage of these studies, please feel free to contact Cherry Wan (cwan2832@uni.sydney.edu.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 [HREC Approval No: *2024/615*] 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

Participant Consent Form

Community members

Contact experience and attitude towards people with dementia

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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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 explore the relationship of contact experience and one's attitude towards people living with dementia.
- 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 respond to an online survey.
- I understand that my information may be used in future research conducted by the researchers.
- 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.
- I understand that I am free to withdraw from this study and that I can choose to withdraw any information I have already provided (unless the data has already been de-identified or published).
- 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 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.

If you give consent to participate in these research projects, please click ‘Yes’ below. If you do not wish to participate, please click ‘No’.

☐ Yes, I have read the Participant Consent Form and I consent to my participation in this research project

☐ No, I have read the Participant Consent Form and I do NOT consent to my participation in this research project

Participant Debriefing Statement

Community members

Contact experience and attitude towards people with dementia

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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What is a 'debrief'?

A debrief is the process of giving participants a fuller explanation of the study after the study's completion than was possible before or during the research.

Thank you for participating as a research participant in the present study.

This is a study titled, "Reducing ageism and dementia stigma from a social psychology perspective". The term *stigma* was first coined by Goffman (1963), describing stigma as an attribute that is deeply discrediting. The term has been applied to various social categories, such as groups defined by ethnicity, gender, sexual orientation, and physical and mental illness or disability. In the public stigma domain, people with dementia were associated with total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017).

Dementia is a neurodegenerative disease relating to loss of memory and other thinking abilities severe enough to interfere with daily life. People with dementia may not show obvious difference from the public in terms of physical appearance at the first glance, while others may link the stereotype of dementia with the easily observed aged physical appearance, a scientifically approved factor associated with dementia. In that sense, others can attribute forgetfulness and erasure of self towards old people because old age is the only salient observable physical cue of people with dementia as portrayed by mass media (Low & Purwaningrum, 2020).

This study aims to test whether dementia attitude will be improved after exposing participants to a video portraying the interaction of their identified ingroup member and outgroup member (people living with dementia). This type of mediated contact is also vicarious contact (Joyce & Harwood, 2014). A meta-analysis showed that vicarious contact that portray a positive interaction can reduce prejudice (Banas et al., 2020). However, to the best of our knowledge, none of the vicarious contact studies focused on people with dementia as an outgroup member. Therefore, this study would provide empirical evidence to support this hypothesis.

We also measured your openness personality to see the individual differences on attitudes towards older people. Finally, we asked your behavioural tendency under a certain occasion

that you may face in real life. We want to know whether your attitude and emotional reactions will be directly reflected in your behaviour when interacting with our research target population.

If you have any questions about the study, please feel free to contact the Student Investigator, Cherry Wan at cwan2832@uni.sydney.edu.au or Chief Investigator, Fiona White at fiona.white@sydney.edu.au.

If you find any questions or content in this study upsetting or distressing, please contact Mental Health Line (NSW) 1800 011 511 and Lifeline 13 11 14 (online chat or video also available 7pm – midnight). You are also encouraged to visit their local GPs or counsellors if you experience distress from any questions of the study.

Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney, Australia on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).

Thank you for participating!

References:

Ballenger, J. F. (2017). Framing Confusion: Dementia, Society, and History. *AMA Journal of Ethics*, *19*(7), 713–719. https://doi.org/10.1001/journalofethics.2017.19.7.mhst1-1707

Banas, J. A., Bessarabova, E., & Massey, Z. B. (2020). Meta-Analysis on Mediated Contact and Prejudice. *Human Communication Research*, *46*(2–3), 120–160. https://doi.org/10.1093/hcr/hqaa004

Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. Simon and Schuster.

Joyce, N., & Harwood, J. (2014). Improving Intergroup Attitudes through Televised Vicarious Intergroup Contact: Social Cognitive Processing of Ingroup and Outgroup Information. *Communication Research*, *41*(5), 627–643. https://doi.org/10.1177/0093650212447944

Low, L.-F., & Purwaningrum, F. (2020). Negative stereotypes, fear and social distance: A systematic review of depictions of dementia in popular culture in the context of stigma. *BMC Geriatrics*, *20*(1), 477–494. https://doi.org/10.1186/s12877-020-01754-x

J3. Community Member Sample (Prolific) Version

Participant Information Statement

Community members

Contact experience and attitude towards people with dementia

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

1. What is this study about?

We are conducting a research study about how contact experience is associated with one's attitude toward people with dementia.

Participation Information Statement tells you about the research studies. Knowing what is involved will help you decide if you want to take part in this study. Taking part in this study is voluntary. Please read this sheet carefully and ask questions about anything that you do not understand or want to know more about.

By giving your consent to take part in these studies you are telling us that you:

✓ Understand what you have read.
✓ Agree to take part in the research studies as outlined below.
✓ Agree to the use of your personal information as described.

2. Who is running the study?

The study is being carried out by the following researchers:

- Professor Fiona White, Professor, School of Psychology, Faculty of Science, University of Sydney
- Professor Sharon Naismith, Leonard P Ullman Chair in Psychology, School of Psychology, Faculty of Science, University of Sydney
- Miss Cheuk Yue Wan, PhD student, School of Psychology, Faculty of Science, University of Sydney

Miss Cheuk Yue Wan is conducting this study as partial basis for the degree Doctor of Philosophy (Science) at The University of Sydney. This will take place under the supervision of Professor Fiona White, Chief Investigator and Professor Sharon Naismith, Co-investigator.

3. Who can take part in the study?

We are seeking participants who are over 18 years old, fluent in English, living in Australia, from an East Asian cultural background, currently not university students, cisgender, and never been diagnosed with dementia. People who have been diagnosed with dementia are excluded because this research aims to investigate how other people view people living with dementia. You would also be required to comprehend all the information.

4. What will the study involve for me?

If you decide to take part in this study, you will be asked to complete an online survey by answering the questions listed. It will take approximately 25 minutes to complete the survey. You can complete the survey anywhere and anytime from your digital device with online services. Answering all questions in one time is not necessary, instead, you can revisit the same link to continue your unfinished survey because the online survey tool will automatically record your answer progress for 7 days. This study will ask your life experiences with elderly people, people living with dementia, general knowledge about dementia, your personality, and subjective views towards elderly people and people living with dementia. Then you will be presented a video. You will report your subjective views and emotions towards the target person described in the video. A sample question includes, “I would feel pity for the person”.

There will not be any audio/video/photographs/other recording involved. You are free to withdraw from this study at any time. You can choose to receive a lay summary of the research results at the end of the survey.

These studies should take approximately 25 minutes. This includes reading the Participant Information Statement and the full debrief of these studies at the conclusion of the survey. Everything will be kept confidential and anonymous.

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. If you decide to take part in the study and then change your mind you can withdraw by stopping responding to the survey and closing your web browser before your submission. Should you decide to withdraw from the survey, you will not be eligible to join the prize draw.

By submitting your survey, you consent to take part in the study. You can withdraw any time before you submit. At the end of the study, after reading the debrief statement, you will have a final opportunity to withdraw from the study. However, once your responses are submitted, they cannot be withdrawn. This is because they are anonymous, and we will not be able to tell which one yours is.

6. Are there any risks or costs?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in these studies. Nonetheless, you can withdraw at any point in the studies with no consequence. You will also have an opportunity to withdraw your response after the debrief at the end of the studies.

While answering the questions on this online survey, you may experience feelings of emotional and social distress. However, the likelihood and severity of experiencing this will be low to moderate. If you feel any social distress after completing the survey, you can voluntarily withdraw anytime during the survey by closing the web browser. You can also contact the University of Sydney's Counselling and Psychological Services (CAPS) by phone: (02) 8627 8433 or (02) 8627 8437; or by email: counselling.service@sydney.edu.au. CAPS is located on Level 5 of the Jane Foss Russell Building (G02).

7. Are there any benefits?

You will receive £3 financial payment for participating in the studies.

Please note that researchers reserve the right to reject participant submissions if the participants do not take the research seriously. Data will be screened for abnormal response patterns.

Aside from receiving the financial payment, you will be contributing to psychological research whose findings may result in benefiting the wider 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. Your information will only be used for the purposes outlined in this Participant Information Statement, unless you consent otherwise.

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 as part of a PhD thesis to be submitted to the School of Psychology, University of Sydney. This may also lead to a scientific journal publication or conference papers. In any of these publications, you will not be individually identified.

The electronic copy of the original data will only be accessed by the study's researchers. After deidentifying the data, it is possible that the deidentified/anonymous data will be shared with a relevant public data bank for use in future research including but not limited to the topic related to attitudes towards elderly people and people with dementia.

9. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. You can indicate your interest in receiving a lay summary of the research results by providing your contact details in the online survey at the end of this study, after you read the debrief. You will receive feedback after the study have concluded.

10. What if I would like further information?

If you like to know more about these studies at any stage of these studies, please feel free to contact Cherry Wan (cwan2832@uni.sydney.edu.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 [HREC Approval No: *2024/615*] 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

Participant Consent Form

Community members

Contact experience and attitude towards people with dementia

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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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 explore the relationship of contact experience and one's attitude towards people living with dementia.
- 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 respond to an online survey.
- I understand that my information may be used in future research conducted by the researchers.
- 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.
- I understand that I am free to withdraw from this study and that I can choose to withdraw any information I have already provided (unless the data has already been de-identified or published).
- 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 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.

If you give consent to participate in these research projects, please click 'Yes' below. If you do not wish to participate, please click 'No'.

☐ Yes, I have read the Participant Consent Form and I consent to my participation in this research project

☐ No, I have read the Participant Consent Form and I do NOT consent to my participation in this research project

Participant Debriefing Statement

Community members

Contact experience and attitude towards people with dementia

Professor Fiona White (Responsible Researcher)
School of Psychology, Faculty of Science
Phone: +61 2 93513246 | Email: fiona.white@sydney.edu.au
Miss Cheuk Yue Wan (PhD student) | Email: cwan2832@uni.sydney.edu.au

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What is a 'debrief'?

A debrief is the process of giving participants a fuller explanation of the study after the study's completion than was possible before or during the research.

Thank you for participating as a research participant in the present study.

This is a study titled, "Reducing ageism and dementia stigma from a social psychology perspective". The term *stigma* was first coined by Goffman (1963), describing stigma as an attribute that is deeply discrediting. The term has been applied to various social categories, such as groups defined by ethnicity, gender, sexual orientation, and physical and mental illness or disability. In the public stigma domain, people with dementia were associated with total and irrecoverable loss, dependence, incompetence, and hopelessness (Ballenger, 2017).

Dementia is a neurodegenerative disease relating to loss of memory and other thinking abilities severe enough to interfere with daily life. People with dementia may not show obvious difference from the public in terms of physical appearance at the first glance, while others may link the stereotype of dementia with the easily observed aged physical appearance, a scientifically approved factor associated with dementia. In that sense, others can attribute forgetfulness and erasure of self towards old people because old age is the only salient observable physical cue of people with dementia as portrayed by mass media (Low & Purwaningrum, 2020).

This study aims to test whether dementia attitude will be improved after exposing participants to a video portraying the interaction of their identified ingroup member and outgroup member (people living with dementia). This type of mediated contact is also vicarious contact (Joyce & Harwood, 2014). A meta-analysis showed that vicarious contact that portray a positive interaction can reduce prejudice (Banas et al., 2020). However, to the best of our knowledge, none of the vicarious contact studies focused on people with dementia as an outgroup member. Therefore, this study would provide empirical evidence to support this hypothesis.

We also measured your openness personality to see the individual differences on attitudes towards older people. Finally, we asked your behavioural tendency under a certain occasion

that you may face in real life. We want to know whether your attitude and emotional reactions will be directly reflected in your behaviour when interacting with our research target population.

If you have any questions about the study, please feel free to contact the Student Investigator, Cherry Wan at cwan2832@uni.sydney.edu.au or Chief Investigator, Fiona White at fiona.white@sydney.edu.au.   If you find any questions or content in this study upsetting or distressing, please contact Mental Health Line (NSW) 1800 011 511 and Lifeline 13 11 14 (online chat or video also available 7pm – midnight). You are also encouraged to visit their local GPs or counsellors if you experience distress from any questions of the study.   Any person with concerns or complaints about the conduct of a research study can contact The Manager, Human Ethics Administration, University of Sydney, Australia on +61 2 8627 8176 (Telephone); +61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).

Thank you for participating!

References:

Ballenger, J. F. (2017). Framing Confusion: Dementia, Society, and History. *AMA Journal of Ethics*, *19*(7), 713–719. https://doi.org/10.1001/journalofethics.2017.19.7.mhst1-1707

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Goffman, E. (1963). *Stigma: Notes on the Management of Spoiled Identity*. Simon and Schuster.

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Appendix K

Study 4 Materials and Measures

Video-based vignettes used in Study 4

Ingroup member's characteristics:	Video links:
Male community member	https://youtu.be/SiGLVV_Yh5M
Male student	https://youtu.be/N3cYyW9MWeE
Female community member	https://youtu.be/BILxrsXxI_M
Female student	https://youtu.be/kcPWVMMYCJg

Script used in Study 4 (Male community member version)

Characters:

1. Wei Chen (a middle-aged male)

2. Li Ming (an old male living with dementia)

3. Community centre staff (a moderator)

Story background: A staff (moderator) from a community centre is organising an event celebrating Chinese festival, winter solstice. They invited two volunteers to come earlier to the event venue to prepare the dumplings for the event.

[Opening shot of a cozy kitchen setting with cooking utensils neatly arranged on the counter. Soft background music sets a warm tone.]

[Cut to the moderator, a cooking class teacher, standing in front of the kitchen counter, facing the camera. Wei Chen and Li Ming are standing behind the kitchen.]

Moderator: Thank you for coming to prepare the dumplings to celebrate the winter solstice in our community centre. I have already prepared some ingredients, but it would be great if you two can help me prepare the dumpling fillings and the wrapping. Do you want to introduce yourself to each other first?

Wei Chen: Hi, I am Wei Chen and I am an office worker. Nice to meet you.

Li Ming: Hi, I am Li Ming. I am a retired government employee. I have been a resident in this centre for many years. I was diagnosed with dementia a year ago.

Moderator: Thank you both for your time to help our centre's activity. Our goal is to create some delicious dumplings together. I hope you both can embrace each other's strengths and learn from one another.

Moderator: Alright, let's get started! First, we can start making the dumpling fillings. So mix the pork mince with 2 tablespoons of oyster sauce, 1 teaspoon of white pepper powder, 1 teaspoon of salt and 1 egg. Keep mixing the pork mince until it looks a bit sticky.

[Cut to close-ups of the Li Ming mixing the pork mince. Wei Chen stands next to him and add the sauce.]

Li Ming: I'm a bit tired. Can you help me continue to mix it?

Wei Chen: Of course.

[Cut to close-ups of Wei Chen mixing the pork mince until the pork mince is a bit hairy.]

Moderator: Now the pork mince looks a bit flavourful. We can move to the next step. We can pour 200 grams of water to the pork mince in batches. This step is important for the texture. Don't pour it all at once.

[Li Ming gets 200g of water and pours water to pork mince in batches while Wei Chen kept mixing the pork mince]

Moderator: Last, we can add some sesame oil. [Li Ming pours sesame oil to pork mince while Wei Chen keeps mixing the pork mince]

Then, we can put the the pork mince into the fridge for 30 minutes. [Li Ming puts the pork mince to the fridge]

Now, we need to finely chop the cabbage. Wei Chen, can you help me take the cabbage from the fridge?

[Wei Chen takes out cabbage from the fridge and starts using a wrong method to chop the cabbage slowly.]

Li Ming: I can show you how to chop the cabbage finely.

[Li Ming chops the cabbage finely in a correct way.]

Wei Chen: [show appreciation] Oh! I did not know I can chop cabbage in this way. It is safer and faster.

[After cutting all the cabbage]

Moderator: Okay. Now we can add the cabbage to the pork mince and mix them well.

[Wei Chen mixes the vegetables with the pork mince.]

Moderator: Now we can wrap the dumplings together. Li Ming can you help me take the wrappers from the fridge? Thank you.

[Camera shows Li Ming prepares the wrappers. Wei Chen fills the wrappers with pork fillings.]

[Li Ming takes one wrapper]

Li Ming: You can also wrap the dumplings like a *yuanbao*.

[Camera cut to the dish with all the wrapped dumplings.]

Moderator: Let's boil the dumplings! [put the dumplings into boiling water]

[Camera cut to the cooked dumplings.]

Moderator: Wow. The dumplings smell so good and look so delicious! Cooking is not just about following a recipe; it's about collaboration, communication, and connection. Together, we're creating more than just a dish; we're enjoying each other's company, achieving the same goal, helping and contributing to the community.

[As the dish nears completion, Wei Chen and Li Ming taste a dumpling and say yummy to each other. They share a sense of accomplishment, exchanging smiles and compliments.]

Moderator: And there you have it! The masterpiece you created together is ready to be served.

[Cut to a beautifully plated dish on the kitchen table, with Wei Chen and Li Ming standing proudly beside it.]

[End credits roll with uplifting music in the background.]

Script used in Study 4 (Male student version)

Characters:

1. Wei Chen (a young male student)

2. Li Ming (an old male living with dementia)

3. Community centre staff (a moderator)

Story background: A staff (moderator) from a community centre is organising an event celebrating Chinese festival, winter solstice. They invited two volunteers to come earlier to the event venue to prepare the dumplings for the event.

[Opening shot of a cozy kitchen setting with cooking utensils neatly arranged on the counter. Soft background music sets a warm tone.]

[Cut to the moderator, a cooking class teacher, standing in front of the kitchen counter, facing the camera. Wei Chen and Li Ming are standing behind the kitchen.]

Moderator: Thank you for coming to prepare the dumplings to celebrate the winter solstice in our community centre. I have already prepared some ingredients, but it would be great if you two can help me prepare the dumpling fillings and the wrapping. Do you want to introduce yourself to each other first?

Wei Chen: Hi, I am Wei Chen and I am a university student. Nice to meet you.

Li Ming: Hi, I am Li Ming. I am a retired government employee. I have been a resident in this centre for many years. I was diagnosed with dementia a year ago.

Moderator: Thank you both for your time to help our centre's activity. Our goal is to create some delicious dumplings together. I hope you both can embrace each other's strengths and learn from one another.

Moderator: Alright, let's get started! First, we can start making the dumpling fillings. So mix the pork mince with 2 tablespoons of oyster sauce, 1 teaspoon of white pepper powder, 1 teaspoon of salt and 1 egg. Keep mixing the pork mince until it looks a bit sticky.

[Cut to close-ups of the Li Ming mixing the pork mince. Wei Chen stands next to him and add the sauce.]

Li Ming: I'm a bit tired. Can you help me continue to mix it?

Wei Chen: Of course.

[Cut to close-ups of Wei Chen mixing the pork mince until the pork mince is a bit hairy.]

Moderator: Now the pork mince looks a bit flavourful. We can move to the next step. We can pour 200 grams of water to the pork mince in batches. This step is important for the texture. Don’t pour it all at once.

[Li Ming gets 200g of water and pours water to pork mince in batches while Wei Chen kept mixing the pork mince]

Moderator: Last, we can add some sesame oil. [Li Ming pours sesame oil to pork mince while Wei Chen keeps mixing the pork mince]

Then, we can put the the pork mince into the fridge for 30 minutes. [Li Ming puts the pork mince to the fridge]

Now, we need to finely chop the cabbage. Wei Chen, can you help me take the cabbage from the fridge?

[Wei Chen takes out cabbage from the fridge and starts using a wrong method to chop the cabbage slowly.]

Li Ming: I can show you how to chop the cabbage finely.

[Li Ming chops the cabbage finely in a correct way.]

Wei Chen: [show appreciation] Oh! I did not know I can chop cabbage in this way. It is safer and faster.

[After cutting all the cabbage]

Moderator: Okay. Now we can add the cabbage to the pork mince and mix them well.

[Wei Chen mixes the vegetables with the pork mince.]

Moderator: Now we can wrap the dumplings together. Li Ming can you help me take the wrappers from the fridge? Thank you.

[Camera shows Li Ming prepares the wrappers. Wei Chen fills the wrappers with pork fillings.]

[Li Ming takes one wrapper]

Li Ming: You can also wrap the dumplings like a *yuanbao*.

[Camera cut to the dish with all the wrapped dumplings.]

Moderator: Let's boil the dumplings! [put the dumplings into boiling water]

[Camera cut to the cooked dumplings.]

Moderator: Wow. The dumplings smell so good and look so delicious! Cooking is not just about following a recipe; it's about collaboration, communication, and connection. Together, we're creating more than just a dish; we're enjoying each other's company, achieving the same goal, helping and contributing to the community.

[As the dish nears completion, Wei Chen and Li Ming taste a dumpling and say yummy to each other. They share a sense of accomplishment, exchanging smiles and compliments.]

Moderator: And there you have it! The masterpiece you created together is ready to be served.

[Cut to a beautifully plated dish on the kitchen table, with Wei Chen and Li Ming standing proudly beside it.]

[End credits roll with uplifting music in the background.]

Script used in Study 4 (Female community member version)

Characters:

1. Wen Chen (a middle-aged female)

2. Liu Mei (an old female living with dementia)

3. Community centre staff (a moderator)

Story background: A staff (moderator) from a community centre is organising an event celebrating Chinese festival, winter solstice. They invited two volunteers to come earlier to the event venue to prepare the dumplings for the event.

[Opening shot of a cozy kitchen setting with cooking utensils neatly arranged on the counter. Soft background music sets a warm tone.]

[Cut to the moderator, a cooking class teacher, standing in front of the kitchen counter, facing the camera. Wen Chen and Liu Mei are standing behind the kitchen.]

Moderator: Thank you for coming to prepare the dumplings to celebrate the winter solstice in our community centre. I have already prepared some ingredients, but it would be great if you two can help me prepare the dumpling fillings and the wrapping. Do you want to introduce yourself to each other first?

Wen Chen: Hi, I am Wen Chen and I am an office worker. Nice to meet you.

Liu Mei: Hi, I am Liu Mei. I am a retired government employee. I have been a resident in this centre for many years. I was diagnosed with dementia a year ago.

Moderator: Thank you both for your time to help our centre’s activity. Our goal is to create some delicious dumplings together. I hope you both can embrace each other's strengths and learn from one another.

Moderator: Alright, let's get started! First, we can start making the dumpling fillings. So mix the pork mince with 2 tablespoons of oyster sauce, 1 teaspoon of white pepper powder, 1 teaspoon of salt and 1 egg. Keep mixing the pork mince until it looks a bit sticky.

[Cut to close-ups of the Liu Mei mixing the pork mince. Wen Chen stands next to him and add the sauce.]

Liu Mei: I'm a bit tired. Can you help me continue to mix it?

Wen Chen: Of course.

[Cut to close-ups of Wen Chen mixing the pork mince until the pork mince is a bit hairy.]

Moderator: Now the pork mince looks a bit flavourful. We can move to the next step. We can pour 200 grams of water to the pork mince in batches. This step is important for the texture. Don't pour it all at once.

[Liu Mei gets 200g of water and pours water to pork mince in batches while Wen Chen keeps mixing the pork mince]

Moderator: Last, we can add some sesame oil. [Liu Mei pours sesame oil to pork mince while Wen Chen keeps mixing the pork mince]

Then, we can put the the pork mince into the fridge for 30 minutes. [Liu Mei puts the pork mince to the fridge]

Now, we need to finely chop the cabbage. Wen Chen, can you help me take the cabbage from the fridge?

[Wen Chen takes out cabbage from the fridge and starts using a wrong method to chop the cabbage slowly.]

Liu Mei: I can show you how to chop the cabbage finely.

[Liu Mei chops the cabbage finely using the correct way.]

Wen Chen: [show appreciation] Oh! I did not know I can chop cabbage in this way. It is safer and faster.

[After cutting all the cabbage]

Moderator: Okay. Now we can add the cabbage to the pork mince and mix them well.

[Wen Chen mixes the vegetables with the pork mince.]

Moderator: Now we can wrap the dumplings together. Liu Mei can you help me take the wrappers from the fridge? Thank you.

[Camera shows Liu Mei prepares the wrappers. Wen Chen fills the wrappers with pork fillings.]

[Liu Mei takes one wrapper]

Liu Mei: You can also wrap the dumplings like a *yuanbao*.

[Camera cut to the dish with all the wrapped dumplings.]

Moderator: Let’s boil the dumplings! [put the dumplings into boiling water]

[Camera cut to the cooked dumplings.]

Moderator: Wow. The dumplings smell so good and look so delicious! Cooking is not just about following a recipe; it's about collaboration, communication, and connection. Together, we're creating more than just a dish; we're enjoying each other’s company, achieving the same goal, helping and contributing to the community.

[As the dish nears completion, Wen Chen and Liu Mei taste a dumpling and say yummy to each other. They share a sense of accomplishment, exchanging smiles and compliments.]

Moderator: And there you have it! The masterpiece you created together is ready to be served.

[Cut to a beautifully plated dish on the kitchen table, with Wen Chen and Liu Mei standing proudly beside it.]

[End credits roll with uplifting music in the background.]

Script used in Study 4 (Female student version)

Characters:

1. Wen Chen (a young female student)

2. Liu Mei (an old female living with dementia)

3. Community centre staff (a moderator)

Story background: A staff (moderator) from a community centre is organising an event celebrating Chinese festival, winter solstice. They invited two volunteers to come earlier to the event venue to prepare the dumplings for the event.

[Opening shot of a cozy kitchen setting with cooking utensils neatly arranged on the counter. Soft background music sets a warm tone.]

[Cut to the moderator, a cooking class teacher, standing in front of the kitchen counter, facing the camera. Wen Chen and Liu Mei standing behind the kitchen.]

Moderator: Thank you for coming to prepare the dumplings to celebrate the winter solstice in our community centre. I have already prepared some ingredients, but it would be great if you two can help me prepare the dumpling fillings and the wrapping. Do you want to introduce yourself to each other first?

Wen Chen: Hi, I am Wen Chen and I am a university student. Nice to meet you.

Liu Mei: Hi, I am Liu Mei. I am a retired government employee. I have been a resident in this centre for many years. I was diagnosed with dementia a year ago.

Moderator: Thank you both for your time to help our centre's activity. Our goal is to create some delicious dumplings together. I hope you both can embrace each other's strengths and learn from one another.

Moderator: Alright, let's get started! First, we can start making the dumpling fillings. So mix the pork mince with 2 tablespoons of oyster sauce, 1 teaspoon of white pepper powder, 1 teaspoon of salt and 1 egg. Keep mixing the pork mince until it looks a bit sticky.

[Cut to close-ups of the Liu Mei mixing the pork mince. Wen Chen stands next to him and add the sauce.]

Liu Mei: I'm a bit tired. Can you help me continue to mix it?

Wen Chen: Of course.

[Cut to close-ups of Wen Chen mixing the pork mince until the pork mince is a bit hairy.]

Moderator: Now the pork mince looks a bit flavourful. We can move to the next step. We can pour 200 grams of water to the pork mince in batches. This step is important for the texture. Don't pour it all at once.

[Liu Mei gets 200g of water and pours water to pork mince in batches while Wen Chen keeps mixing the pork mince]

Moderator: Last, we can add some sesame oil. [Liu Mei pours sesame oil to pork mince while Wen Chen keeps mixing the pork mince]

Then, we can put the the pork mince into the fridge for 30 minutes. [Liu Mei puts the pork mince to the fridge]

Now, we need to finely chop the cabbage. Wen Chen, can you help me take the cabbage from the fridge?

[Wen Chen takes out cabbage from the fridge and start using a wrong method to chop the cabbage slowly.]

Liu Mei: I can show you how to chop the cabbage finely.

[Liu Mei chops the cabbage finely using the correct way.]

Wen Chen: [show appreciation] Oh! I did not know I can chop cabbage in this way. It is safer and faster.

[After cutting all the cabbage]

Moderator: Okay. Now we can add the cabbage to the pork mince and mix them well.

[Wen Chen mixes the vegetables with the pork mince.]

Moderator: Now we can wrap the dumplings together. Liu Mei can you help me take the wrappers from the fridge? Thank you.

[Camera shows Liu Mei prepares the wrappers. Wen Chen fills the wrappers with pork fillings.]

[Liu Mei takes one wrapper]

Liu Mei: You can also wrap the dumplings like a *yuanbao*.

[Camera cut to the dish with all the wrapped dumplings.]

Moderator: Let’s boil the dumplings! [put the dumplings into boiling water]

[Camera cut to the cooked dumplings.]

Moderator: Wow. The dumplings smell so good and look so delicious! Cooking is not just about following a recipe; it's about collaboration, communication, and connection. Together, we're creating more than just a dish; we're enjoying each other's company, achieving the same goal, helping and contributing to the community.

[As the dish nears completion, Wen Chen and Liu Mei taste a dumpling and say yummy to each other. They share a sense of accomplishment, exchanging smiles and compliments.]

Moderator: And there you have it! The masterpiece you created together is ready to be served.

[Cut to a beautifully plated dish on the kitchen table, with Wen Chen and Liu Mei standing proudly beside it.]

[End credits roll with uplifting music in the background.]

Intergroup Anxiety

Please indicate to what extent you felt these emotions while watching the video.

1. Anxious
2. Defensive
3. Awkward
4. Tender (reverse-coded)
5. Sympathetic (reverse-coded)
6. Compassionate (reverse-coded)
7. Warm-hearted (reverse-coded)

Outgroup Empathy

Instructions: Please read each statement below and indicate how strongly you agree or disagree with each statement.

1. I don't have much sympathy for people living with dementia (reverse-scored)
2. I tend to get emotionally involved when I think about people living with dementia

3. I often feel sympathy with individuals living with dementia
4. I try to understand the social issues related to dementia by imagining how things look to them
5. I don't spend a lot of time imagining how I feel if I was a person living with dementia (reverse-scored)

Negative Emotions and Behavioural Intentions towards People living with Dementia

1. I would feel aggravated by Harry/Jane.
2. Harry/Jane would terrify me.
3. How angry would you feel at Harry/Jane?
4. If I were an employer, I would interview Harry/Jane for a job.
5. I would be willing to talk to Harry/Jane about his/her problems.
6. How irritated would you feel by Harry/Jane?
7. I would share a carpool with Harry/Jane every day.
8. How scared of Harry/Jane would you feel?
9. How likely is it that you would help Harry/Jane?
10. How certain would you feel that you would help Harry/Jane?
11. How frightened of Harry/Jane would you feel?
12. If I were a landlord, I probably would rent an apartment to Harry/Jane.

Negative Attitudes towards People living with Dementia

1. Persons with dementia should be institutionalized. (reverse-coded)
2. Persons with dementia are not as dangerous as people think.
3. Only those with a low education level would develop dementia. (reverse-coded)
4. People who live at home with relatives with dementia would be looked down upon by others. (reverse-coded)
5. Research on dementia is nothing but a good way for pharmaceutical companies to make profits. (reverse-coded)

6. Resources for medical research should be devoted to the acute conditions of those with productive activities. (reverse-coded)
7. Society should treat persons with dementia with more tolerance.
8. I would avoid contact with people with dementia. [b]
9. I would avoid disclosing the truth if my relatives or friends had dementia. (reverse-coded)
10. I would feel embarrassed going out with a relative or friend who has dementia. (reverse-coded)
11. Increasing spending for dementia care services is a waste of money. (reverse-coded)

Appendix L

Study 4 Pilot Study Procedure and Results

Pilot Study: Procedure

A pilot manipulation check was conducted to assess whether the video stimuli successfully conveyed the intended ingroup characteristics and operationalised Allport's (1954) facilitating contact conditions. A total of 18 voluntary research assistant (VRA) students participated in the pilot study. The sample consisted predominantly of female participants (n = 17), with four participants identifying with an East Asian cultural background. All participants were students at the time of data collection.

Participants were each randomly assigned to view one of the four video conditions in a 2 (ingroup membership: student vs. community member) × 2 (gender: male vs. female) design. After viewing the assigned video, participants completed a brief questionnaire assessing perceived identification with the ingroup member and the extent to which the interaction reflected Allport's (1954) four facilitating conditions for prejudice reduction: equal status, common goals, cooperation, and authority support. All items were rated on a 7-point Likert scale (1 = strongly disagree, 7 = strongly agree).

Identification was assessed across multiple dimensions, including perceived similarity in gender, membership status (student vs. community member), and cultural background.

Pilot Study: Results

Overall, the pilot results indicated that the video stimuli functioned as intended. Participants reported strong identification with the ingroup member when key characteristics were matched. In particular, gender identification was consistently high when participants viewed an ingroup member of the same gender (n = 8, M = 6.75, SD = .43). Similarly, when

the ingroup member was depicted as a student, participants reported high levels of membership status identification (n = 8, M = 6.50, SD = .70), suggesting that the student identity was clearly conveyed and recognised.

Cultural identification was more moderate but still evident. Among participants from East Asian cultural backgrounds, ratings of cultural identification with the ingroup member ranged from 4 to 5 (n = 4, M = 4.50, SD = .5), indicating that the stimuli conveyed a recognisable, though not overly specific, cultural background consistent with the intended macro-level East Asian operationalisation.

Participants also rated the extent to which the videos reflected Allport's (1954) facilitating conditions. Mean ratings were high across all four conditions: cooperation (M = 6.28, SD = .89), common goals (M = 6.50, SD = .86), authority support (M = 6.22, SD = .91), and equal status (M = 5.67, SD = .73). These results suggest that the interaction depicted in the videos was perceived as collaborative, goal-oriented, and supported by authority figures, with slightly lower but still positive perceptions of equal status between interaction partners.

Taken together, the pilot findings support the validity of the experimental stimuli in conveying intended ingroup characteristics and in operationalising key contact conditions.