

**Acculturation and Sexuality: Sexual Knowledge,
Attitude and Help-seeking Behaviour of South Asian
Women in Australia**

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BA, MBA, MHM

**This thesis is submitted in fulfilment of the requirements for the degree of Doctor of
Philosophy**

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DECLARATION

Statement of Originality

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DEDICATION

To

Hosneera, Asif, Ayaan & Arshaan

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Abstract

Background

Within the last two decades, international migration has increased exponentially in scale and complexity (Hugo, 2016). In 2015, the number of international migrants worldwide was the highest ever recorded, having reached 244 million (International Organisation for Migration, [IOM], 2015). In Australia, 28.5% of the population (6.9 million) were born overseas and another 20% have at least one parent born overseas (Australian Bureau of Statistics [ABS], 2017). This makes Australia a land of immigrants, with one of the world's most ethnically, culturally and linguistically diverse populations.

The growth in cultural diversity as a result of international migration has prompted increased scholarly interest in the influence of culture on migrants' health. In particular, post-migration cultural adjustment, or 'acculturation', has emerged as an important construct in efforts to explain health disparities in minority populations (Fox, Thayer, & Wadhwa, 2017). Acculturation has also become a key concept in sexuality research, as measures of acculturation provide insight into the effects of culture on sexuality and sexual health of migrants in different cross-cultural settings. Research on migrants' sexuality and sexual health provides strong evidence that their sexuality can best be understood by examining the role of acculturation (Brotto, Chik, Ryder, Gorzalka, & Seal, 2005). Specifically, evidence suggests that migrants who are acculturated towards the host society are more likely to have a high level of sexual knowledge (Brotto, Chou, Singh, & Woo, 2008; Meston, Trapnell, & Gorzalka, 1998), to hold liberal sexual attitudes (Brotto et al., 2005) and to participate in sexuality-related health protective behaviours such as screening for breast (Kwok, Tranberg, & Lee, 2015) and cervical cancer (Lee, Ju, Vang, & Lundquist, 2010). Yet, the topic remains under-researched. The present study seeks to fill this gap by investigating the relationship

between acculturation and sexual knowledge, attitudes and breast and cervical cancer screening behaviour among South Asian migrant women living in Australia.

South Asians represent a considerable proportion of the migrant population in Australia. They originate from India, Bangladesh, Pakistan and Sri Lanka, a region commonly referred to as the Indian sub-continent. The top five fastest growing migrant groups in Australia include those from India (10.7%), Bangladesh (8.9%) and Pakistan (13.2%) (ABS, 2017). Despite being a visible ethnic migrant community, South Asians - particularly women, who account for almost half of the South Asian population (ABS, 2011) - are under-represented in research relating to sexuality. Little is known about how acculturation influences their sexual knowledge, attitudes and breast and cervical cancer screening behaviour. This lack of understanding limits our ability to assess and address the sexual health needs of this group of migrant women which may, in turn, result in poor sexual health outcomes. The theoretical framework of the current study is based on the social construction theory of sexuality and Berry's acculturation theory (Berry, 1992, 1997; Berry & Kim, 1988).

Aims

This is the first exploratory study of the sexuality of South Asian migrant women living in Australia. It had two main aims:

1. To explore South Asian migrant women's sexual knowledge, sexual attitudes and sexual help-seeking attitudes and behaviour, with particular focus on cancer screening behaviour;
2. To examine the influence of socio-demographic variables and acculturation on their sexual knowledge, sexual attitudes and cancer screening behaviour.

Methodology

The study adopted a quantitative design, using an online and pen-paper questionnaire to collect data. The survey included questions related to socio-demographic variables, sexual knowledge, sexual attitudes, sexuality-related help-seeking attitudes and behaviour, breast and cervical cancer screening behaviour and acculturation. Participants' sexual attitudes were assessed using the Brief Sexual Attitudes Scale (BSAS) (Hendrick, Hendrick, & Reich, 2006). The Stephenson Multigroup Acculturation Scale (SMAS) (Stephenson, 2000) was adapted to assess acculturation based on two domains: dominant society immersion and ethnic society immersion. Non-parametric tests were used for the data analysis. Descriptive, correlational and multivariate analyses were conducted.

Results

Socio-demographic characteristics: Participants were 194 South Asian women (online=175, pen-paper=19) aged between 18-59 years. Among the participants, Indians comprised the highest proportion (31.4%), followed by Sri Lankans (27.8%), Bangladeshi (22.2%) and Pakistanis (18.6%). Results showed that South Asian women were immersed into both ethnic and Australian culture while they were slightly more immersed into ethnic than Australian culture. 'Integration' (81.7%) was the most preferred acculturation strategy, while the least preferred was 'marginalisation' (2.2%).

Sexual Knowledge: Overall, the participants demonstrated a fairly poor knowledge of sexual health. More than half responded incorrectly to items relating to sexual desire, arousal, masturbation by women, use of condoms during oral sex, orgasm and erectile dysfunction. Poor knowledge of chlamydia, gonorrhoea and genital herpes was also evident. Those who

were immersed into the dominant society were more likely to have a higher level of knowledge relating to the sexual response cycle, whereas those who were immersed into ethnic society were more likely to have a lower level of knowledge related to sexually transmitted infections and diseases (STI/STDs). After controlling for other variables, multivariate analysis indicated that ethnic society immersion was negatively correlated to knowledge of STI/STDs.

Sexual attitudes: Overall, the participants showed moderately conservative attitudes towards sexual permissiveness. They showed moderately liberal attitudes towards communion and instrumentality, and strongly endorsed positive attitudes towards birth control. Results indicated that acculturation had differential influence on different aspects of sexual attitudes. While dominant society immersion influenced liberal attitudes towards sexual permissiveness and instrumentality, both dominant and ethnic society immersion influenced attitudes towards communion. Multivariate analysis showed that age, being from a Sri Lankan ethnic background and dominant society immersion significantly predicted attitudes towards instrumentality, whereas both dominant and ethnic society immersion significantly interacted to predict attitudes towards sexual permissiveness.

Sexual help-seeking: Results showed that more than half of the participants (59%) had not previously sought help in relation to sexual health problems. Bangladeshi women were the least likely group to have sought help whereas Sri Lankan women were the most likely group. A high percentage of participants (63%) was willing to seek medical help, followed by help from family including partner (28%). Of those who were willing to seek medical help, the majority (70%) were willing to seek help from a general practitioner.

Breast and cervical cancer screening: More than half of the participants reported having had a mammogram, and nearly two-thirds of those aged ≥ 40 years had it biannually. More than

half reported having had a clinical breast examination (CBE) and one-fourth of those aged ≥ 40 years had it annually as recommended. Participants' rate of ever having had a Pap test was 59.6%. Multivariate analysis showed that dominant society immersion significantly predicted participants' ever having had a Pap test or CBE or having had a mammogram biannually, as recommended within the target age group (aged ≥ 40 years).

Limitations

The study used non-probability convenience sampling method and snowball recruitment technique which limited the ability to generalise findings. External validity was also limited because of the possibility that the sample under-represented socially and linguistically disadvantaged South Asian women. In addition, the cross-sectional design limited our ability to establish cause-and-effect relationships.

The study focussed on sexual attitudes and hence it was not within the scope of the study to collect data on sexual behaviours and/or sexual experience of the study population. This has limited our ability to examine whether there is any discrepancy between the sexual attitudes reported in the study and the related sexual behaviours or experience. The study also failed to consider some important background variables such as education, income, religiosity which, the literature suggests, might influence both acculturation and sexuality. Data on those variables would have been beneficial to address the research questions more comprehensively.

Conclusion

The findings of this study provide valuable insights that can inform the development of culturally and linguistically appropriate sexual health education and promotion initiatives to improve sexual health knowledge, encourage healthy sexual behaviour and increase

participation in breast and cervical cancer screening among South Asian women in Australia. The results are of potential significance to sexual health providers working with diverse ethnic groups as they provide understanding of the factors influencing sexuality in cross-cultural settings. For sexual health clinicians in particular, the study recommended the use of a quick assessment of acculturation within the context of clients' sexual history.

Finally, the study made a contribution to literature on sexuality and acculturation by providing previously unavailable baseline scientific data on sexual knowledge, sexual attitudes, sexual help-seeking attitudes and behaviour, particularly breast and cervical cancer screening behaviour, among South Asian women in Australia. Building on these results, future research should continue to explore the influence of acculturation on sexual behaviours and experience of South Asian women in Australia.

Conference Presentations

1. Asif, N., Sitharthan, G., Hossain, S.Z. (3-4 November, 2014). Influence of acculturation on sexual attitudes of South Asian women in Australia. *Higher Degree Research Conference Imag!ne.U: Creating the Future*. The University of Sydney: Sydney, Australia.
2. Asif, N., Sitharthan, G., Hossain, S.Z. (26-29 March, 2015). Influence of acculturation on sexual attitudes and behaviour of South Asian women in Australia. *Fifth Asian Conference on Psychology & the Behavioural Sciences*. Osaka, Japan.
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Statement from co-authors confirming the authorship contribution of the PhD Candidate and as co-authors of the manuscript. This statement confirms that Nafisa Asif has made the following contributions in the manuscript outlined below:

- Designed the study and developed a conceptual framework to guide the analysis
- Coded, analysed and interpreted the results presented in the manuscript
- Authored the manuscript from conception to completion

As supervisors for the candidature upon which this thesis is based, we can confirm that the authorship attributions above are correct.

Dr Syeda Zakia Hossain

Signed.....Dated.....

Dr Mairwen Jones

Signed.....Dated.....

Abbreviations

AOS	Anglo Orientation
AIDS	Acquired Immune Deficiency Syndrome
ARSMA-II	Acculturation Rating Scale for Mexican Americans-II
AAAS	African American Acculturation Scale
ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
BRFSS	Behavioral Risk Factor Surveillance System Questionnaire
BAS	Bidimensional Acculturation Scale for Hispanics
BSAS	Brief Sexual Attitudes Scale
CDC	Centre for Diseases Control and Prevention
CBE	Clinical Breast Examination
CVC	Cultural Values Conflict Scale
DIBP	Department of Immigration and Border Protection
DSFI	Derogatis Sexual Functioning Inventory
DSI	Dominant Society Immersion
ESI	Ethnic Society Immersion
GP	General Practitioner
GSSAB	Global Study of Sexual Attitudes and Behaviours
HREC	Human Research Ethics Committee
HPV	Human Papilloma Virus
HIV	Human Immunodeficiency Virus
IOM	International Organisation for Migration

MOS	Mexican Orientation
MCWH	Multicultural Women's Health Australia
STI	Sexually Transmitted Infections
STD	Sexually Transmitted Diseases
SPSS	Statistical Package for the Social Sciences
SMAS	Stephenson Multigroup Acculturation Scale
SAW	South Asian women
SL-ASIA	Suinn-Lew Asian Self-Identity Acculturation Scale
VIA	Vancouver Index of Acculturation
WHO	World Health Organisation

Table of Contents

	Page
Declaration.....	i
Supervisor’s Statement.....	ii
Dedication.....	vi
Acknowledgments.....	vii
Abstract.....	ix
Conference Presentations.....	xv
Publication Statement.....	xvi
Abbreviations	xvii
Table of Contents.....	xix
List of Tables.....	xxvii
List of Figures.....	xxix
1 Introduction.....	1
1.1 Background	2
1.1.1 Sexuality and culture.....	2
1.1.2 Acculturation.....	4
1.1.3 Acculturation and sexuality.....	5
1.1.4 Sexual health of migrant women in Australia...	9
1.2 Aims and Significance of the Study.....	15
1.3 Research Questions.....	16
1.4 The Study Population in Context.....	17
1.4.1 Asian migration to Australia.....	18
1.4.2 South Asian migrants in Australia.....	19
1.4.3 Demographic profile of South Asian migrants in Australia.....	21
1.5 Organisation of the Thesis.....	22
2 Literature Review.....	24
2.1 Sexuality.....	24

2.1.1	Gender and sexuality.....	25
2.1.2	Ethnicity and sexuality.....	28
2.1.3	Culture and sexuality.....	31
2.2	Theoretical Background.....	33
2.2.1	Social construction theory.....	33
2.2.1.1	Social constructionist approach to sexuality.....	34
2.2.2	Acculturation.....	36
2.2.2.1	Conceptualising Acculturation.....	38
2.2.2.2	Acculturation theories and models.....	39
2.2.2.3	Measures of acculturation.....	42
2.2.2.4	Limitations of acculturation studies.....	46
2.3	Acculturation, Sexuality and Sexual Help-seeking Behaviour.....	46
2.3.1	Acculturation among South Asian migrants....	46
2.3.2	Acculturation and sexuality.....	49
2.3.2.1	Sexual knowledge, attitudes and behaviours among Asian migrants.....	50
2.3.2.2	Research on acculturation and sexuality among Hispanics/Latinas.....	57
2.3.2.3	Acculturation and cancer screening behaviour.....	59
2.3.3	Sexual help-seeking.....	63
2.4	Conceptual Framework.....	66
3	Methodology.....	69
3.1	Re-statement of Study Aims and Research Questions.....	69

3.2	Research Design, Sampling and Recruitment.....	70
3.2.1	Research design.....	70
3.2.2	Participants.....	71
3.2.3	Sample size and power calculation.....	71
3.2.4	Recruitment.....	71
3.3	Instrument.....	72
3.4	Measures.....	73
3.4.1	Socio-demographic characteristics.....	73
3.4.2	Sexual knowledge.....	73
3.4.3	The Brief Sexual Attitudes Scale (BSAS).....	74
3.4.4	Sexual help-seeking attitudes and behaviour...	75
3.4.5	Breast and cervical cancer screening behaviour.....	76
3.4.6	Stephenson Multigroup Acculturation Scale (SMAS).....	76
3.5	Data Management.....	77
3.6	Data Re-coding.....	77
3.7	Data Analysis.....	78
3.7.1	Scales.....	78
3.7.2	Statistical analysis: non-parametric tests.....	78
3.8	Ethical Considerations.....	80
4	Results.....	81
4.1	Socio-demographic Characteristics of Survey Participants	81
4.2	Acculturation.....	83
4.2.1	Research question 1: What is the acculturation status of South Asian women in Australia?.....	83
4.2.1.1	Acculturation status.....	83
4.2.1.2	Acculturation strategies using Berry's Model.....	84
4.2.1.3	Acculturation status and ethnicity.....	

		85
	4.2.1.4 Acculturation status and length of residency.....	85
	4.2.2 Summary of inferences on acculturation.....	86
4.3	Sexual Knowledge.....	87
4.3.1	Research question 2: What is the level of sexual knowledge among South Asian women?.....	87
	4.3.1.1 Knowledge of sexual response cycle.....	87
	4.3.1.2 Knowledge of reproductive health.....	88
	4.3.1.3 Knowledge of sexually transmitted infections and diseases (STI/STDs)	92
4.3.2	Research question 3: Do socio-demographic variables influence sexual knowledge of South Asian women?.....	93
	4.3.2.1 Sexual knowledge and age, length of residency.....	93
	4.3.2.2 Sexual knowledge and relationship status.....	94
	4.3.2.3 Sexual knowledge and ethnicity....	94
4.3.3	Research question 4: Does acculturation influence sexual knowledge of South Asian women?.....	95
	4.3.3.1 Sexual knowledge and acculturation (SMAS).....	95
4.3.4	What are the predictors of sexual knowledge?.....	96
	4.3.4.1 Multiple regression analysis for sexual response cycle knowledge...	97
	4.3.4.2 Multiple regression analysis for reproductive health knowledge....	97

4.3.4.3	Multiple regression analysis for STI/STDs knowledge.....	98
4.3.5	Summary of inferences on sexual knowledge...	99
4.4	Sexual Attitudes.....	100
4.4.1	Research question 5: What are South Asian women’s attitudes towards sexuality?.....	100
4.4.1.1	Permissiveness.....	101
4.4.1.2	Birth control.....	102
4.4.1.3	Communion.....	102
4.4.1.4	Instrumentality.....	103
4.4.2	Research question 6: Do socio-demographic variables influence sexual attitudes of South Asian women?.....	105
4.4.2.1	Sexual attitudes and age, length of residency.....	105
4.4.2.2	Sexual attitudes and relationship status.....	106
4.4.2.3	Sexual attitudes and ethnicity	107
4.4.3	Research question 7: Does acculturation influence sexual attitudes of South Asian women?.....	108
4.4.3.1	Sexual attitudes and acculturation (SMAS).....	108
4.4.4	What are the predictors of sexual attitudes?	109
4.4.4.1	Multiple regression analysis for permissiveness.....	110
4.4.4.2	Multiple regression analysis for birth control.....	111
4.4.4.3	Multiple regression analysis for communion.....	112

4.4.4.4	Multiple regression analysis for instrumentality.....	113
4.4.5	Summary of inferences on sexual attitudes....	114
4.5	Sexual Help-seeking Attitudes and Behaviour.....	115
4.5.1	Research question 8: What are the attitudes and behaviour of South Asian women towards help-seeking for sexual health problems?.....	115
4.5.1.1	Sexual help seeking attitude and behaviour.....	115
4.5.1.2	Sexual help-seeking and ethnicity.....	116
4.5.1.3	Sexual help-seeking and age.....	116
4.5.1.4	Reasons for not seeking help in relation to sexual health.....	117
4.5.1.5	Preferred option for sexual help seeking.....	118
4.5.1.6	Seeking help from regular General Practitioner (GP).....	118
4.5.1.7	Options other than seeking medical help.....	119
4.5.2	Summary of inferences on sexual help-seeking attitudes and behaviour.....	119
4.6	Breast and cervical cancer screening behaviour.....	120
4.6.1	Publication (submitted): ‘Breast and Cervical Cancer Screening Behaviour among South Asian Women: The Role of Acculturation’	121
5	Discussion and Conclusion.....	149
5.1	Acculturation	149
5.2	Sexual Knowledge.....	153

5.3	Sexual Attitudes.....	158
5.4	Breast and Cervical Cancer Screening	163
5.5	Sexual Help-seeking Attitudes and Behaviour.....	167
5.6	Relationships of the Findings to the Theoretical Framework.....	170
5.7	Limitations.....	172
5.8	Implications for Future Research.....	174
5.9	Implication for Health Education, Health Promotion and Clinicians.....	177
5.10	Conclusion.....	178
	References	180
	Appendices.....	211
A	Participant Information Sheet.....	211
B	Survey Instrument.....	213
C	Ethics Approval.....	232
D	Advertisement and Community Endorsements.....	236
E	Correspondence: Permission to Use Scales.....	240
F	Results.....	241
Table 3.1	Summary of Survey Data Completion by the Participants.....	241
Table 3.2	Examination of Continuous Variables for Normality Distribution.....	241
Table 4.32	Bivariate Analysis between ethnicity and length of residency.....	242
Table 4.33	Descriptive Statistics for Sexual Knowledge Questions (31 Items)	243
Table 4.34	Descriptive Statistics of Individual items of Brief Sexual Attitudes Scale (Mean, Standard Deviation)	246
Table 4.35	Results of Multivariate Analysis for Pap test as Recommended with in Target Age Group (≥ 18 years)	

		247
Table 4.36	Results of Multivariate analysis for CBE as Recommended with in Target Age Group (≥ 40 years)	248
Table 4.37	Comparison of Sexual Attitude Mean Scores between South Asian Women and Men (Indian Men) in Australia.....	248
Table 4.38	Descriptive Statistics for the Stephenson Multigroup Acculturation Scale (SMAS).....	249

Additional Results

Table 4.39	Bivariate Relationship between Sexual Knowledge Scores and BSAS Scores.....	251
Table 4.40	Additional Results of Multivariate Analysis for ever having had a Pap test	252
Table 4.41	Additional Results of Multivariate Analysis for ever having had a CBE.....	252
Table 4.42	Additional Results of Multivariate Analysis for ever having had a Mammogram.....	253

List of Tables

Table Number	Title	Page
1.1	Regional Origins of Asian Migrants in Australia.....	19
1.2	South Asian-born Populations Living in Australia.....	20
4.1	Socio-demographic Characteristics of Participants.....	82
4.2	Descriptive statistics of Stephenson Multigroup Acculturation Scale (SMAS) (N=186)	84
4.3	Cross Table of Ethnic Society Immersed and Dominant Society Immersed Participants (N=186)	84
4.4	Bivariate Analysis between Acculturation and Ethnicity (N=186)	85
4.5	Bivariate Analysis between Acculturation and Length of Residency (N=148)	86
4.6	Sexual Knowledge Scores on Individual Items (22 items) ...	90
4.7	Scores of Sexual Response Cycle, Reproductive Health and STI/STDs Knowledge (N=190)	92
4.8	Bivariate Analysis of Sexual Knowledge Scores with Age and Length of Residency	93
4.9	Bivariate Relationship between Sexual Knowledge Scores and Relationship Status (N=189)	94
4.10	Bivariate Relationship between Sexual Knowledge Scores and Ethnicity (N=189)	95
4.11	Bivariate Relationship between Sexual Knowledge Scores and SMAS Scores	96
4.12	Results of Multiple Regression Analysis for Sexual Response Cycle Knowledge (N=175)	

		97
4.13	Results of Multiple Regression Analysis for Reproductive Health Knowledge (N=153)	98
4.14	Results of Multiple Regression Analysis for STI/STDs Knowledge (N=184)	99
4.15	Descriptive Statistics for BSAS Scale Dimensions (N=187)	101
4.16	Descriptive Statistics for the Items of the Brief Sexual Attitude Scale (BSAS)	103
4.17	Bivariate Analyses of Age and Length of Residency with Brief Sexual Attitude Scale (BSAS) Scores.....	106
4.18	Bivariate Relationship between BSAS Scores and Relationship Status.....	106
4.19	Bivariate Relationship between BSAS Scores and Ethnicity.....	107
4.20	Bivariate Relationship between SMAS Scores and BSAS Scores.....	109
4.21	Results of Multiple Regression Analysis for Sexual Permissiveness (N=143)	110
4.22	Results of Multiple Regression Analysis for Birth Control (N=149)	111
4.23	Results of Multiple Regression Analysis for Sexual Communion (N=179)	112
4.24	Results of Multiple Regression Analysis for Sexual Instrumentality (N=145)	113
4.25	Sexual Help-seeking Attitude and Behaviour of South Asian Women.....	115
4.26	Cross Table of Ethnicity and Sexual-help Seeking Attitude and Behaviour.....	116
4.27	Cross Table for Age (Category) and Sexual-help Seeking	

	Attitude and Behaviour.....	117
4.28	Reasons for Not Seeking Help in the Past (N=98, ticked a total of 112 boxes)	117
4.29	Preferred Option for Sexual Help-seeking (N=117, ticked a total of 170 boxes)	118
4.30	Reasons for not Seeking Help from Regular GP (N=31, ticked a total of 41boxes)	118
4.31	Options Other than Seeking Medical Help (N=82)	119

Manuscript

1	Participation Rates in Breast and Cervical Cancer Screening.....	133
2	Bivariate Analysis of Ever Having Received a Pap Test or Mammogram or CBE.....	135
3	Bivariate Analysis of Pap Test, Mammogram or CBE Receipt as Recommended in Target Age Group.....	136
4	Multivariate Analyses of Breast and Cervical Cancer Screening.....	138

List of Figures

Figure Number	Title	Page
2.1	Acculturation Framework (Adapted from Berry, 1991, 1997)	41
2.2	Conceptual Framework for the Study.....	67

Chapter 1

Introduction

As the result of domestic and international migration, almost every large society today comprises diverse ethno-cultural groups. This growth in cultural diversity has been accompanied by increased interest from a range of academic disciplines in the effect of culture on migrants' health (Hunt, Schneider, & Comer, 2004; Salant & Lauderdale, 2003). In particular, post-migration cultural adjustment, or 'acculturation', has emerged as an important construct in efforts to explain health disparities in minority populations (Fox, Thayer, & Wadhwa, 2017).

Health itself is a complex phenomenon. Sexual health is one of its many dimensions, yet the effects of acculturation on sexuality and sexual health of migrant populations have not received sustained empirical attention (Brotto, Chik, Ryder, Gorzalka, & Seal, 2005; Meston & Ahrold, 2010), despite evidence of a strong association between acculturation and sexuality among migrant groups (Ahrold & Meston, 2010; Brotto et al., 2005; Brotto, Woo, & Ryder, 2007; Hahm, Lahiff, & Barreto, 2006; Marin, Tschann, Gomez, & Kegeles, 1993; Meston & Ahrold, 2010; Meston, Trapnell, & Gorzalka, 1998; Ramanathan, 2013; Rojas-Guyler, Ellis, & Sanders, 2005; Sabogal, Perez-Stable, Otero-Sabogal, & Hiatt, 1995; Woo & Brotto, 2008). The broad purpose of the present study was to address this lacuna by exploring the relationship between acculturation and certain aspects of sexuality and sexual health in a particular migrant population. Specifically, the study examined the influence of acculturation on sexual knowledge and attitudes, and sexuality-related help-seeking behaviour in relation to breast and cervical cancer screening, among South Asian migrant women living in Australia.

This chapter sets out the background to and rationale for the study. It explains key terms and concepts, presents the study's aims and potential significance, and states the research questions that guided the study design. It also provides a brief historical and demographic profile of the target population and an overview of the organisation of the thesis.

1.1 Background

This section introduces the concepts of sexuality and acculturation, and explains how they are understood in this thesis. It also presents brief discussions of the literature on acculturation and on sexuality in migrant populations and summarises existing research on the sexual health of migrant women in Australia. The limitations of existing knowledge are identified.

1.1.1 Sexuality and Culture

Historically, sexuality has mainly been investigated from a biomedical perspective within an essentialist framework (Parker, 2009). The essentialist paradigm, originating from the work of Plato (DeLamater & Hyde, 1998), suggests that sexuality is a natural, biological imperative and an aspect of individual identity that is fairly static and unchangeable (Ahmadi, 2003a; Parker, 2009). Contemporary research challenges this notion, re-conceptualising sexuality as a phenomenon that is external to the individual and defined by social understanding and discourses (Parker, 2009). This social constructionist approach (Berger Peter & Luckmann, 1966; Foucault, 1978) proposes that social, cultural, psychological and economic factors shape an individual's sexual behaviour and experience. In keeping with this perspective, the current study views sexuality as a social and cultural construction and, in contrast to the essentialist paradigm, recognises that the experience and manifestation of sexuality can be diverse and subject to change (Few, 1997).

Since sexuality is constituted within a social and cultural context, the meaning and significance of discourses around sexuality can vary in different cultures and epochs (Ahmadi, 2003b; DeLamater & Hyde, 1998; Vance, 1991). Culture is defined as a set of guidelines that individuals inherit as members of a particular society and which tell them how to view the world, how to experience it emotionally and how to behave in it (Amaro, Navarro, Conron, & Raj, 2002). In the present study, culture is conceptualised as a combination of shared meanings and distinct behavioural norms that are transmitted for the purpose of promoting individual/societal adjustment, growth and development (Cuellar & Paniagua, 2000). These meanings and behaviours are subject to continuous modification in response to changing internal factors (values, beliefs, attitudes) and external circumstances (roles, contexts, institutions) (Cuellar & Paniagua, 2000). Individuals often belong to more than one cultural group, and culture can be based on any unifying social phenomenon such as race, ethnicity, gender, class, religion, region, national origin and age (Amaro et al., 2002; Wingood & DiClemente, 2013).

Culture exerts considerable influence on human sexuality (Ramanathan, 2013). It is well established that sexual attitudes and experience are culture-specific, differing among individuals from diverse ethnic and cultural backgrounds. The expression of sexuality (what is expected, accepted and prohibited in sex) (Ramanathan, 2013) varies from culture to culture and by subgroups within the same culture, as do socially learned ways of responding in sexual situations, or 'sexual scripts' (Schneider & Gould, 1987; Vance, 1984).

This study adopts the World Health Organisation's (2006) definition of sexuality as encompassing "sex, gender identities, roles, sexual orientation, eroticism, pleasure, intimacy and reproduction". The experience and expression of sexuality have various dimensions, including thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles and relationships (Ramanathan, 2013). Sexuality is influenced by the interaction of

biological, psychological, social, economic, political, cultural, ethical, legal, historical, religious and spiritual factors, and an individual's knowledge, attitudes and skills are the key determinants of sexual behaviour (Dean, 2014).

Clearly, sexuality is a broad concept. In the present study, the focus is limited to three key areas: sexual knowledge, attitudes and sexuality-related help-seeking behaviour in relation to breast and cervical cancer screening among South Asian migrant women living in Australia. Specifically, the study will examine the influence of acculturation on these aspects of sexuality among the study population.

1.1.2 Acculturation

The complex relationship between culture and sexuality has particular implications in ethnically pluralistic societies and migrant populations. It has been argued that, in such societies, the dominant cultural discourse is not the only factor shaping individuals' beliefs and attitudes towards sexual health and sexuality (Meston & Ahrold, 2010). Migrants are exposed to different socio-cultural ideologies of sexuality in their host countries, hence their values and beliefs undergo a dynamic process of adjustment and adaptation. The extent to which an individual will be influenced by the dominant cultural milieu, however, is a function of how that individual assimilates into the values and norms of the host country - a psychological process of adaptation commonly known as acculturation (Johnson, Carroll, Fulda, Cardarelli, & Cardarelli, 2010).

Although the literature contains numerous definitions of acculturation, most draw on the early conceptualisation of anthropologist Redfield and his colleagues (Redfield, Linton, & Herskovits, 1936). Broadly, they conceptualised acculturation as a phenomenon that results when groups of individuals with different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups (Redfield et al., 1936). Specifically, acculturation refers to an adaptation process that occurs when

individuals from one culture come into contact with a dominant (mainstream) culture. In this process, individuals adopt characteristics of the mainstream culture and retain and/or relinquish traits of the traditional ethnic culture (Salabarría-Pena et al., 2001).

The current study adopts Berry's widely accepted theoretical framework (Berry, 1992, 1997; Berry & Kim, 1988), which conceptualises acculturation as a multidimensional process of change that occurs when individuals of different cultural groups come into continuous contact (Berry & Kim, 1988). Such contact is an iterative process that results in a range of acculturative strategies, referred to as assimilation, integration, separation and marginalisation. In assimilation, migrants move away from their ethnic group and become fully immersed in the host society. Integration involves immersion in both societies. Separation entails withdrawal from the dominant society, and marginalisation describes a lack of meaningful immersion in either the ethnic or dominant society (Stephenson, 2000). In Redfield's definition, acculturation was viewed as a group process (Redfield et al., 1936). In Berry (2003)'s perspective, changes occur at both the individual and group level. Following Berry, the current study conceptualises mainstream Australian culture as the reference point for acculturation and assumes that Australian culture is predominantly characterised by liberal sexual attitudes (Ramanathan, 2013).

1.1.3 Acculturation and Sexuality

There is considerable evidence that acculturation strongly influences sexual knowledge, attitudes and behaviours of migrant communities. Although the scope of the current study is limited to sexual knowledge and attitudes, it is important to discuss the impact of acculturation on sexual behaviours as evidence suggests that certain sexual behaviours are shaped by knowledge and attitudes towards that behaviour (Meston et al., 1998).

Sexual knowledge, attitudes and behaviour. A study involving 702 University students in British Columbia, Canada examined the influence of acculturation on sexual

knowledge, and attitudes of Asian and non-Asian Canadians (Meston et al., 1998). The study found that Asian Canadians (n=346) held more conservative attitudes towards masturbation, homosexuality, pornography and uncommitted sex, and demonstrated less sexual knowledge on issues related to sexual anatomy, physiology, psychology and sexual hygiene than non-Asian Canadians (n=356) (Meston et al., 1998). Acculturation was positively related to sexual knowledge and attitudes of the respondents. The more acculturated Asian Canadians were to Canadian culture, the greater was their sexual knowledge and the more liberal were their attitudes. Acculturation, however, did not influence any of their interpersonal sexual behaviours (assessed on indicators such as sexual experience, sexual drive, sexual fantasy and orientation towards uncommitted sex), except for promiscuity and intercourse fantasies (Meston, Trapnell, & Gorzalka, 1996). The differential effect of acculturation on sexual attitudes and behaviours has been attributed to the fact that cultural influences on sexual behaviours may be slower than influences on sexual attitudes (Meston et al., 1996).

These findings are consistent with those from a study by Brotto et al. (2005), which showed relative conservatism in sexual attitudes and low levels of sexual knowledge among Asian Canadians. The authors compared responses of Asian (n=176) and Euro Canadian (n=173) participants using the same sexual knowledge and attitude scale employed by (Meston et al., 1998). Euro Canadian women with higher levels of mainstream acculturation had significantly more sexual knowledge and experience and more permissive attitudes towards sex than their Asian Canadian counterparts (Brotto et al., 2005).

Studies of adult and adolescent Latinos in the United States reported varying effects (negative and positive) of acculturation on sexual knowledge, attitudes and behaviour. Kaplan et al. (2002), for instance, found that acculturation positively influenced less risky forms of sexual behaviour among Latino adolescents (n=670). Being less acculturated towards American culture was associated with later age of sexual debut, fewer lifetime sexual

partners, and fewer pregnancies (Kaplan, Erickson, & Juarez-Reyes, 2002). By contrast, in a study of 227 Latino women, Newcomb et al. (1998) found that highly acculturated participants were more likely to report higher sexual risk-taking behaviour than those who were less acculturated. This study also found that women with greater mainstream acculturation had more knowledge about sexually transmitted infections (STIs) than Latinas who were high on ethnic identity, yet reported higher sexual risk-taking behaviour.

Acculturation has been found to have different effects on different sexual attitudes within and between ethnic groups in the same mainstream culture. A study of 1,419 undergraduate students (67% Euro-American, 17% Hispanic, 16% Asian) in a public university in the United States, Meston and Ahrold (2010) found that in Hispanic men, mainstream acculturation predicted conservatism of attitudes towards extramarital sex, whereas ethnic acculturation predicted conservatism of attitudes towards casual sex in Asian men. On the other hand, for both Hispanic and Asian women, interaction between mainstream and ethnic culture predicted more casual sexual attitudes (one time-sexual encounters and number of lifetime sexual partners), rather than mainstream or ethnic acculturation alone.

Sexual help-seeking attitude and behaviour. A number of studies have explored barriers to and enablers of access to sexual health services among migrant women (Agu, Lobo, Crawford, & Chigwada, 2016; Drummond, Mizan, Brocx, & Wright, 2011; Mengesha, Dune, & Perz, 2016). Literature focussing on acculturation and help-seeking for sexual health issues is, however, limited. Ramanathan (2013) reported that no previous study had been conducted on acculturation and sexual help-seeking among Asian migrants in Australia. In 2013, Ramanathan and associates examined sexual help-seeking attitudes of Indian migrant men (n=225) in Australia but the study did not investigate the relationship with acculturation (Ramanathan, Sitharthan, Pepper, & Wylie, 2013). Several studies have investigated the role

of acculturation in preventive health services utilisation among migrant populations, particularly utilisation of cancer screening services (O'Malley, Kerner, Johnson, & Mandelblatt, 1999; Shah, Zhu, Wu, & Potter, 2006; Suarez, 1994). The following section summarises extant research on the influence of acculturation on breast and cervical cancer screening among migrant women.

Breast and cervical cancer screening behaviour. Evidence suggests that early detection through screening is the best strategy for favourable prognosis and increased survival rates for both breast and cervical cancer (United States Preventive Services Task Force, 2016, 2012). The Pap smear test helps detect pre-cancerous cells of the cervix, while mammography and clinical breast examination (CBE) are used for early detection of breast cancer (Cancer Council Australia, 2017a, 2017b).

A body of literature has demonstrated that acculturation positively influences breast cancer screening in migrant women (Brown, Consedine, & Magai, 2006; Coe et al., 1994; Islam, Kwon, Senie, & Kathuria, 2006; O'Malley et al., 1999; Solis, Marks, Garcia, & Shelton, 1990). In a study of Hispanic women (n= 903) from four different subgroups (Columbian, Dominican, Ecuadorian and Puerto Rican) in New York City, O' Malley et al. (1999) showed that greater acculturation was associated with higher rates of clinical breast examination (CBE) and mammograms. By contrast, a study of older Vietnamese women (n=141) found that less acculturated women tended to participate more in screening mammograms (Yi, 1992). Other literature suggests that acculturation has little or no effect on breast screening behaviour. A small study (n=16) of Mexican women reported no association between acculturation and breast screening (Borrayo & Jenkins, 2003).

By contrast, studies of cervical cancer screening behaviour among various migrant groups consistently reported an association between greater mainstream acculturation and

higher rates of cervical cancer screening (Gupta, Kumar, & Stewart, 2002; Harmon, Castro, & Coe, 1997; Islam et al., 2006).

1.1.4 Sexual Health of Migrant Women in Australia

The sexual health of women has been defined in various ways. The term has been used to refer to the psychological, cultural and emotional relationships that women form with other individuals. It has also been used in reference to the design of programs to prevent the acquisition of sexually acquired conditions, such as HIV and other sexually transmitted infections (Wingood & DiClemente, 2013). The concept of women's sexual health also encompasses enhancing women's ability to cope with sexual and reproductive health conditions, such as breast and cervical cancer, sexual dysfunction, pelvic pain, menopause and sexual abuse (Wingood & DiClemente, 2013). The present study adopts a broad definition of women's sexual health that encompasses all these dimensions. It uses the terms sexuality and sexual health interchangeably on the understanding that women's sexuality/sexual health involves a complex interplay of biological, psychological, social and cultural factors.

Australia is widely recognised as a land of immigrants, having one of the world's most ethnically, culturally and linguistically diverse populations (Gifford, Bakopanos, Dawson, & Yesilyurt, 1998; Mengesha et al., 2016). In 2016, the Australian Bureau of Statistics reported that 6.9 million Australians were born overseas and belonged to more than 300 different ethnic groups (ABS, 2016a, 2016b). This socio-cultural diversity presents a rich field for sexuality research, given the co-existence of a variety of sexuality-related attitudes, norms and values. Yet there has been very little comprehensive research into socio-cultural influences on sexuality (Ramanathan, 2013).

Previous research on migrant women's sexual health in Australia largely conceptualised migrants as a homogenous group and failed to report cross-cultural variations in sexuality within and between different ethno-cultural communities (Rawson & Liamputtong, 2010). Moreover, the existing Australian evidence base is significantly lacking in data related to sexual health specific to ethnic groups and gender, making it difficult to identify sexual health issues relating to migrant women from different ethnic communities (Gwatirisa, 2009; Temple-Smith, 2014). In a multicultural society like Australia, where women account for half of the migrant population (Mengesha et al., 2016), the absence of gender- and ethno-specific knowledge about sexuality significantly limits our ability to assess and address the sexual health needs of different migrant communities (Ramanathan, 2013), making them more vulnerable to poor sexual health outcomes.

It is well documented that migrant women in Australia are disproportionately affected by negative sexual health outcomes (Mengesha et al., 2016). Available research shows that migrant women in this country are at greater risk of contracting sexually transmitted infections (STIs) such as HIV and hepatitis B than the Australian-born population (Multicultural Women's Health Australia [MCWH], 2016). Between 2002 and 2006, migrants accounted for an estimated 34% of people diagnosed with HIV in Australia (Asia 10%, Africa 6%, U. K. and Ireland 5%, other Europe 5%, and elsewhere 8%) (Temple-Smith, 2014). Migrants from Asia-Pacific countries such as Taiwan, Vietnam, China and Cambodia accounted for an estimated 38% of the total Australian population living with hepatitis B in the year 2013 (MCWH, 2016).

Existing studies, however, mostly focus on trends and patterns of STIs and do not include broader sexual health issues among migrant communities (Dean, Mitchell, Stewart, & Debattista, 2017a). Although such knowledge of STIs is vital, it is also important to identify and understand the determinants of sexual risk-taking behaviour, which include such factors

as sexual health knowledge, attitudes, and socio-cultural context (Dean, 2014). Understanding these factors can help to develop sexual health education and intervention programs for migrants to enhance their self-efficacy and protective sexual decision-making skills (Dean, Mitchell, Stewart, & Debattista, 2017a; Dean et al., 2017b). This will in turn reduce sexual vulnerability and improve the sexual health and wellbeing of migrant communities in Australia.

In recent decades, qualitative research on sexual health has provided valuable insight into the sexual health knowledge of various migrant communities and the barriers to acquiring such knowledge (Allotey, Manderson, Baho, & Demian, 2004; Dean, Wollin, Stewart, Debattista, & Mitchell, 2012; Gifford et al., 1998; Rawson & Liamputtong, 2009; Rawson & Liamputtong, 2010; Wray, Ussher, & Perz, 2014). In 2013, a study of 10 Muslim migrant women (aged 18-25 years) living in Sydney explored their sexual health with particular focus on control over the sexual body, knowledge of safe sex and contraception (Wray et al., 2014). It found that young migrant women engaged in self-policing by avoiding information related to sexual health in order to maintain sexual purity. These women tried to regulate their sexual desire as it was considered sinful in their culture. Knowledge of sexually transmitted diseases (STDs) was also found to be low.

Migrant women from west Africa (n=51) living in Western Australia were found to be well informed about risk factors associated with transmission of Human Immunodeficiency Virus (HIV), but they held misconceptions about prevention of HIV infection and the effectiveness of condoms in protecting against HIV (Drummond, Mizan, & Wright, 2008). Knowledge of STIs and HIV was found to be low among 16-24-year-old Sudanese refugees (n=229) living in Queensland (Dean et al., 2017a). Among this group, the most important barrier to learning was the attitude of parents and young people to talking about sex. Young Sudanese were too shy or afraid to discuss sexual health matters with parents due to fear of

parental disapproval or discipline. This study also revealed that increased time spent in Australia was positively related to increased knowledge of STIs and HIV.

In 2010, a study conducted among recently arrived young people from refugee backgrounds (Iraq, Afghanistan, Burma, Sudan, Liberia and Sub-Saharan Africa) living in Melbourne showed that many were inadequately informed about key sexual health issues, including modes of transmission, symptoms and prevention of STIs, despite being aware of potential sources of sexual health information (McMichael & Gifford, 2009). For these young people, barriers to learning about sexual health included concerns about confidentiality, shame and embarrassment about discussing sexual health. A study of young Vietnamese women (aged 18-25 years) in Melbourne reported that they desired to learn more about sexual health issues but were impeded by cultural barriers such as traditional familial norms of silence regarding sexual matters (Rawson & Liamputtong, 2010). As a result, they sought information from unreliable sources such as peer groups or the media. As Ussher et al. (2012) concluded from a study of Assyrian and Karen women living in Australia, this makes it difficult for individuals to access evidence-based information and make informed decisions. These studies, which primarily focused on young migrants, clearly indicated a low level of sexual literacy that is likely to impact on their ability to adopt and maintain sexually protective behaviour (Dean, 2014).

It is well-established that sexual and reproductive health services are underutilised by migrants in Australia (Botfield, Newman, & Zwi, 2015; Mengesha et al., 2016; Ussher et al., 2012). Limited knowledge of sexual health services, combined with social, economic and cultural factors, are considered to be the main barriers to migrant women's access to sexual and reproductive health services (Wray et al., 2014). A recent systematic review identified language, culture, health professionals' lack of knowledge regarding cultural norms and traditions, and migrant women's lack of knowledge about sexual health services as the main

barriers to accessing such services in Australia (Mengesha et al., 2016). Cultural factors such as fear, shame and stigma (McMichael & Gifford, 2009) and migrant women's perception of these services as culturally inappropriate have also been reported as barriers (Allotey et al., 2004). Yet little is known about the challenges and constraints relating to utilisation of sexual health services by migrants from different cultural backgrounds (Rawson & Liamputtong, 2009). Such knowledge is important in order to understand the cultural mores surrounding the sexual help-seeking behaviour of specific migrant communities and to develop health care services and health policy based on these findings.

Previous research has also shown that migrant women overall have a higher incidence rate of cervical cancer and lower incidence and mortality rates for breast cancer than Australian-born women. An early study, however, reported that the incidence of breast cancer among Asian-born women of high socioeconomic status was similar to that of their Australian-born counterparts (Grulich, McCredie, & Coates, 1995). Among all Asian women living in the state of New South Wales (NSW), breast cancer incidence was highest in Southeast Asian women (Feletto & Sitas, 2015). Yet, migrant women showed lower uptake of breast and cervical cancer screening than their Australian-born counterparts. For example, 45% of Vietnamese women (Taylor et al., 2003), 44% of Thai women (Jirojwong & Manderson, 2001) and 49.5% of Middle Eastern women had a regular Pap test (Aminisani, Armstrong, & Canfell, 2012a) compared to a national participation rate of 57.8% (Australian Institute of Health and Welfare [AIHW], 2017a).

It is worth mentioning here that Australia was the first country to introduce a free school-based national Human Papilloma Virus (HPV) vaccination program to prevent cervical cancer, starting with girls (aged 12-13 years) in 2007 and boys (12-13 years) in 2013 (Cancer Council Australia, 2017c). Although the prophylactic HPV vaccine (Gardasil®) provides protection against the two high-risk HPVs that cause 70% of cervical cancers in

women, it does not protect from all strains of cancer-causing HPV viruses (Cancer Council Australia, 2017c). Hence cervical cancer screening is still necessary as a form of secondary prevention for early detection, particularly for adult women who are not eligible for the free vaccination. However, from 1st of December 2017, the national cervical screening program has launched a new initiative which would replace Pap test with a more accurate cervical screening test. The new program recommends to commence the test at the age of 25 instead of 18 and women should undergo this screening every 5 years instead of every two years (Department of Health, 2017).

Nevertheless, as noted earlier, there are disparities in participation, with low rates of both breast and cervical cancer screening uptake in migrant women despite the existence of such organised cancer screening programs in Australia. The current national database, which groups all migrant women together as women from a non-English speaking background (NESB), shows that such women are significantly less likely than women who speak English at home to participate in mammography (45% and 59%, respectively), CBE (55% and 73%, respectively) and Pap testing (61% and 86%, respectively) (ABS, 2000). Thus, migrant woman in Australia are at risk of morbidity and mortality from breast and cervical cancers due to late or no detection. Considering the high risk of breast and cervical cancer in migrant women, combined with the low uptake of screening, it is important to better understand the socio-cultural context influencing their screening behaviour.

In Australia, South Asians represent a considerable proportion of the ethnic migrant population. They constitute a visible migrant community with distinct cultural values that differentiate them from other Eastern populations (Chandras, 1997; Das & Kemp, 1997), yet issues relating to sexuality and sexual health among them remain under-researched (Ramanathan, 2013). Research is also limited in regards to the acculturation strategies of South Asians in Australia. One study (Ramanathan, 2013) investigated acculturation

influences on the sexuality of 275 Indian men living in Australia. The results showed that biculturalism (i.e. integration) was the dominant acculturation strategy (Ramanathan, 2015) and, as they assimilate into Australian culture, they tend to adopt more permissive sexual attitudes (Ramanathan, 2013).

To date, no study has examined the influence of acculturation on sexual knowledge, attitudes and help-seeking behaviour of South Asian migrant women in Australia. This may be partly due to the reluctance of researchers to study issues which are considered extremely sensitive by most South Asian women (Griffiths, Hart, & Prost, 2008). Revealing sexuality-related information carries with it a number of cultural and religious taboos among this community, which poses additional challenges in relation to recruiting research participants. Arguably, these methodological challenges have contributed to the current knowledge gap about a 'hidden yet visible' migrant group in Australia (Dean et al., 2012). The present study seeks to fill this gap.

1.2 Aims and Significance of the Study

The present study had two main aims:

- To explore South Asian migrant women's sexual knowledge, sexual attitudes and sexual help-seeking attitudes and behaviour with particular focus on breast and cervical cancer screening behaviour;
- To examine the influence of socio-demographic variables and acculturation on their sexual knowledge, sexual attitudes and cancer screening behaviour.

As the first exploratory investigation of South Asian women's sexuality, the findings will fill important empirical and theoretical gaps in the literature. First, the results will

provide baseline scientific data on sexual knowledge, attitudes, help-seeking attitude and behaviour and breast and cervical cancer screening behaviour among South Asian women in Australia. This will not only create a previously unavailable knowledge base but will also help to generate hypotheses to guide future research. Second, data analysis is expected to provide better understanding of the psychological process of adaptation to culture change (i.e. acculturation) among South Asian women, as well as the influence of acculturation on their overall sexual health and wellbeing.

In addition, the insights derived from the study have potential to inform the development of culturally and linguistically appropriate sexual health education and promotion initiatives to improve sexual health knowledge and encourage healthy sexual behaviour among this community. In particular, data on breast and cancer screening behaviour can guide the development of tailored evidence-based preventive screening services to improve rates of early diagnosis and, therefore, the overall sexual health and wellbeing of South Asian migrant communities in Australia.

1.3 Research Questions

The research questions were:

Acculturation

1. What is the acculturation status of South Asian women in Australia?

Sexual knowledge

2. What is the level of sexual knowledge among South Asian women?
3. Do socio-demographic variables (ethnicity, age, relationship status, length of residency in Australia) influence sexual knowledge of South Asian women?

4. Does acculturation influence sexual knowledge of South Asian women?

Sexual attitudes

5. What are South Asian women's attitudes towards sexuality?
6. Do socio-demographic variables influence the sexual attitudes of South Asian women?
7. Does acculturation influence sexual attitudes of South Asian women?

Sexual help-seeking

8. What are the attitudes and behaviours of South Asian women towards help-seeking for sexual health problems?

Breast and cervical cancer screening

9. What is the breast and cervical cancer screening behaviour among South Asian women?
10. Do socio-demographic variables influence breast and cervical cancer screening behaviour in this population?
11. Does acculturation influence breast and cervical cancer screening behaviour in this population?

1.4 The Study Population in Context

This section locates the study population in historical, social and cultural context. It briefly summarises the history of Australian migration policy with particular reference to migration from Asia. It explains how, despite differences among them, those from South Asia share a

common cultural identity, and concludes with an overview of the demographic characteristics of South Asian migrants in Australia.

1.4.1 Asian Migration to Australia

The shift from a ‘White Australia’ policy (1901) to a skilled migration policy (1973) transformed the demographic face of Australia into one of the most ethnically diverse communities in the world (Ramanathan, 2013). Australia's current migration program allows people to migrate to Australia from any country, regardless of their ethnicity, culture, religion or language, provided that they meet the criteria set out in law (Department of Immigration and Border Protection [DIBP], 2017). The Australian Bureau of Statistics reported that, as at 30 June, 2016, 28.5% of Australia’s population were born overseas (ABS, 2017). In 2015-2016, the fastest growing group of immigrants were from Asian, including those from China (8%), Malaysia (7%) and India (6%) (ABS, 2017). Over the last 10 years, the numbers of migrants born in China and India have doubled and tripled, respectively (ABS, 2016).

Asian migration to Australia has a long history. According to Bilimoria and Ganguly-Scrase (1988), Indians were among the first Asians to arrive in colonial Australia and a native of Sri Lanka (formerly Ceylon) was the first Asian settler in this country. Between the late 1700s and the early 1800s, a great many Indian and Chinese arrived in Australia, mostly as indentured or contract labourers for the gold mining fields (Jupp, 2002). In 1850, however, white miners' resentment of Chinese diggers led to violence in the states of NSW and Victoria, which culminated in legislative measures to restrict Chinese migration (DIBP, 2017).

In 1901, this was formalised as the ‘White Australia’ policy and, as a result, Asian migration remained low throughout the early 20th century. It was only after the abandonment of this policy in 1973, coupled with an emphasis on skilled migration, that significant

numbers of Asian migrants began to settle in Australia (Castles, Vasta, & Ozkul, 2012). Between 1991 and 2010, Asian migrants comprised more than half of the total numbers of new settlers: 18.4% from North-east Asia, 17.2% from South-east Asia, and 14.7% from South Asia (Castles et al., 2012). Table 1.1 shows the regional origins of Asian-born migrants in Australia according to the 2006 and 2011 censuses (ABS 2006, 2011).

In 2006, the Asian-born population totalled 1,208,744 (8% of the Australian population), of whom 247,481 (20%) were born in South Asia (ABS, 2006). By 2011, the number of Asian-born migrants had increased by 529,280, 24% of which was attributed to an increase in the South Asian population. With a total of 467,417 in 2011, the number of South Asian migrants had almost doubled from 2006 and accounted for more than 2% of Australia's total population (ABS, 2011).

Table 1.1
Regional Origins of Asian Migrants in Australia

Asian Region	Census Year	
	2006 Number (%)	2011 Number (%)
South-East Asia	552,596 (46)	701,865 (40)
North-East Asia	388,629 (32)	335,484 (31)
South Asia	247,481 (20)	467,417 (27)
Central Asia	20,038 (2)	33,258 (2)
Total	1,208,744 (100)	1,738,024 (100)

(ABS 2006, 2011)

1.4.2 South Asian Migrants in Australia

The term South Asia is used to represent the southern region of the Asian continent, comprising seven countries: India, Pakistan, Sri Lanka, Bangladesh, Nepal, the Maldives and Bhutan. Bounded by the great Himalayas in the north and the semi-arid desert regions in the west, South Asian countries were insulated from the cultural influences of Central Asia and

the Middle East (Paul & Menon, 2017). The region’s long history of a shared heritage provided the basis for a common cultural identity that differentiates it from Eastern populations (Chandras, 1997; Das & Kemp, 1997). This composite South Asian cultural identity emerged through the interaction of diverse ethnic, religious, cultural and linguistic communities in the region. All religions, philosophical traditions, cuisines, art and architecture, language and music contributed to the flowering of South Asian culture (Paul & Menon, 2017) as a peacefully coexisting diversity of beliefs, values and behaviours. Despite differences between them, South Asians outside the region are generally identified as a singular collective - ethnic South Asian (Velasquez-Tan & Dharmalingam, 2009).

In the Australian census, the terms South Asia and Southern Asia have been used to refer to the group of people who trace their origins either through country of birth or through ancestry from the above-mentioned seven countries (Sharma, 2016). Today, South Asians represent a sizeable proportion of Australia’s migrant population, with Nepal (27.8%), India (10.7%), Bangladesh (8.9%) and Pakistan (13.2%) among the top five fastest growing migrant groups (ABS, 2017). Among South Asian migrants in Australia, the largest groups are Indians (63%) and Sri Lankans (18%) (ABS, 2011).

Table 1.2
South Asian-born Populations Living in Australia

Country of Birth	Census 2006	Census 2011
	N (%)	N (%)
India	147,105 (59)	295,363 (63)
Sri Lanka	62,255 (25)	86,414 (18)
Bangladesh	16,095 (7)	27,810 (6)
Pakistan	16,992 (7)	30,222 (6)
Nepal	4,565 (2)	24,636 (5)
Bhutan	1 38 (0)	2,456 (1)
Maldives	272 (0)	374 (0)

(ABS 2006, 2011)

Between 2006 and 2011, the number of South Asian migrants increased markedly, more than doubling from most countries. The 2006 census recorded 147,105 Indian-born people in Australia, a number that had increased by 100.8 percent in 2011 (ABS 2006, 2011). Similarly, between 2006 and 2011, the numbers of those born in Bangladesh, Pakistan and Sri Lanka increased by 72.8%, 77.8% and 38.8%, respectively. The overall figures for these countries are much higher than those for Nepal, Maldives and Bhutan (see Table 1.2). Accordingly, the present study focussed on the four largest migrant populations and, in this thesis, the term South Asian refers to migrants from India, Bangladesh, Pakistan and Sri Lanka.

1.4.3 Demographic Profile of South Asian Migrants in Australia

South Asian migrants in Australia are a predominantly young population. Their median age is lower than that of other migrant groups and the general Australian population. According to the 2011 census, the median age of those born in India, Bangladesh and Pakistan was 31 years (41 years for the Sri Lankan-born), compared with 45 years for all overseas-born and 37 years for the total Australian population (ABS, 2011). In terms of age distribution, 62.8% of Bangladeshi, 52.0 % of Pakistani, 57.2% of Indian and 40.0% of Sri Lankan migrants were aged between 25 and 44 years (ABS, 2011). As these figures show, a substantial proportion of South Asian migrants are in the economically active age group, which reflects the planned intake of South Asian migrants under successive Australian Governments' skilled migration programs in recent decades (Sharma, 2016).

On average, females account for 43.75% of the South Asian population (ABS, 2011). Between 2006 and 2011, the number of female migrants increased markedly, although the male-female ratio remained the same. During this period, the numbers of Indian, Bangladeshi, Pakistani and Sri Lankan women grew by 65,240, 5,521, 5,197 and 11,360, respectively (ABS 2006, 2011). As a proportion of total migrants from their countries,

Bangladeshi women represent 42.0%, Indian women 44.0%, women from Sri Lanka 48.0%, and Pakistani women 41.0% (ABS, 2011).

For South Asians, religion has not only historical significance but also plays a crucial role in defining their contemporary ethnic identity and shaping their daily lives (Dey, 2011). In Australia, Hinduism (48.5%) is the main religion among the Indian-born population, Buddhism (38.8%) is the main religion among the Sri Lankan-born population, and Islam is the main religion for both the Bangladeshi- (86.9%) and Pakistani (89.4%)-born populations (ABS, 2011).

Overall, spoken English language proficiency is high among South Asian migrants compared to other Asian migrants in Australia (ABS, 2011). According to the 2011 census, the numbers of migrants born in India, Bangladesh, Pakistan and Sri Lanka who speak English at home were 62,862, 1,497, 3,074 and 23,112, respectively. The main languages other than English spoken by Indian migrants were Hindi (59,055) and Punjabi (57,144); by Bangladeshi migrants, Bengali (25,626), and Rohingya (113); by Pakistani migrants, Urdu (21,911) and Pashto (1,411), and by Sri Lankan-migrants, Sinhalese (40, 926) and Tamil (19,854) (DIBP, 2017). The multiplicity of languages has always been characteristic of South Asian history, often indicating acceptance of difference as well as openness to different cultural influences (Hussain, 2017).

1.5 Organisation of the Thesis

This chapter has presented the background and a brief overview of the research. It has identified the aims and research questions and defined key terms and concepts.

Chapter 2 presents a comprehensive review of literature on acculturation and sexuality. It also discusses the theories that provide the conceptual framework for the present

study, namely, social constructionism and the theory of acculturation. The chapter concludes with a description of this conceptual framework.

Chapter 3 explains the methodology used in the study. It describes the research design and the techniques of data collection and analysis, and discusses the ethical implications of the project.

Chapter 4 presents the results from analysis of the survey data. This chapter also includes a co-authored manuscript that has been submitted (currently under review) for publication.

Chapter 5 summarises the findings, discusses the strengths and limitations of the study and considers its implications for future research.

Chapter 2

Literature Review

This chapter reviews existing literature on the research topic, with particular focus on the major variables explored in this thesis. It is divided into three sections. The first section discusses the concept of sexuality and how sexuality is influenced by factors such as gender, ethnicity and culture. The second section explains the theories that underpinned the present study: social construction theory, and the theory of acculturation. The third section discusses available research on acculturation among Asians and South Asians, with particular reference to the sexuality variables examined in the present study (sexual knowledge, sexual attitudes and cancer screening behaviour). The final section reviews literature on help-seeking attitudes and behaviour relating to sexual health and presents the conceptual framework that underpins the study.

2.1 Sexuality

According to the World Health Organisation (WHO) sexuality “encompasses sex, gender identities, roles, sexual orientation, eroticism, pleasure, intimacy and reproduction” (WHO, 2006). The experience and expression of sexuality have various dimensions, including thoughts, fantasies, desires, beliefs, attitudes, values, behaviours, practices, roles and relationships (Ramanathan, 2013). Sexuality is influenced by the interaction of biological, psychological, social, economic, political, cultural, ethical, legal, historical, religious and spiritual factors, and an individual’s knowledge, attitudes and skills are the key determinants

of sexual behaviour (Dean, 2014). The following sections discuss gender and ethnic differences in sexual knowledge, sexual attitudes and behaviours.

2.1.1 Gender and Sexuality

This section reviews the literature on gender differences in sexuality to shed light on how women's sexuality has changed over time. This provides important background to the current study, which aims to explore sexuality among South Asian women in Australia.

There is a common perception that sexuality differs by gender (Bailey, Hendrick, & Hendrick, 1987; Hendrick, Hendrick, Slapion-Foote, & Foote, 1985; Hendrick & Hendrick, 1995; Oliver & Hyde, 1993; Petersen & Hyde, 2010). Psychoanalytic theory, evolutionary psychology, gender schema, and cognitive social learning theory support this view, according to which men are expected to hold more liberal sexual attitudes and have more sexual experience than women (Petersen & Hyde, 2010).

Although sexual attitudes and behaviours have been a focus of social scientific investigation since the 1940s (Hendrick et al., 1985), a 1985 study was the first to assess gender differences in sexual attitudes across a range of dimensions (Le Gall, Mullet, & Shafiqhi, 2002). Hendrick et al. (1985) in a study of students (n=800) from the University of Miami, United States found that men were moderately permissive in their sexual attitudes while women were moderately conservative. Specifically, men were more likely than women to endorse casual sex, sex with many partners, one-night stands and premarital sex, while women were more likely than men to endorse sexual communion (i.e. idealistic sex within a relationship) than men. Almost a decade later, Buss and Schmitt (1993) found that men held more permissive sexual attitudes and desired more sexual partners than women. Although both studies support the view that women are more conservative in their sexual attitudes than men, the results lack generalisability to other age groups as the participants were all

university students. Moreover, the studies failed to report the ethnic backgrounds of the participants.

Nevertheless, similar results of gender differences have been observed in studies of sexual attitudes in various ethnic populations. Using national U.S. survey data, Kann et al. (2000) concluded that Hispanic men were two times more permissive than Hispanic women on indicators such as lifetime number of partners. A cross-sectional study of Canadian undergraduate students (n=702) found that Asian men were more likely than Asian women to endorse permissive attitudes towards extramarital sex, masturbation, oral sex, multiple sexual partners, premarital sex and pornography (Meston, Trapnell, & Gorzalka, 1998). The study also reported gender differences in sexual experience, with Asian women less likely to have had sexual intercourse than Asian men.

A decade later, however, Meston and Ahrold (2010) reported contrasting results for an Asian population. Their study of undergraduate students (n=1,149) in the United States found that Asian-American women were more likely than their male counterparts to endorse casual sex and report more sexual partners, indicating that women's sexual attitudes and behaviours might have shifted towards more permissiveness. More recently, Earle et al. (2007) argued that, although men have remained more permissive in their sexual attitudes than women, over time women have become more accepting of casual sex. This trend towards convergence of men's and women's sexual attitudes and behaviours over time is evident in the findings from two meta-analyses, as discussed below.

Oliver and Hyde (1993) conducted a meta-analysis of 177 studies from various countries published between 1974 and 1990 and involving 58,000 men and 69,000 women. They analysed gender differences in relation to sexual behaviours such as incidence of vaginal sex, same-gender sexual behaviour, masturbation, oral sex, number of sex partners,

and frequency of intercourse. The results showed that, overall, men engage in more of these sexual behaviours than do women.

Nearly two decades later, Petersen and Hyde (2010) updated the work of Oliver and Hyde (1993) by analysing research published between 1993 and 2007 and involving 1.5 million participants. They used the same sexual behaviours but also included pornography usage. Many sexual behaviours were found to have larger gender differences among younger people than among older people. For example, there were larger gender differences in frequency and incidence of intercourse in adolescence than college-aged young adults. Some gender differences in sexual attitudes appeared to have narrowed since the original meta-analysis in 1993 (Oliver & Hyde, 1993). Specifically, gender differences in attitudes towards general sexual permissiveness, premarital sex, extramarital sex and masturbation decreased over the period between the two meta-analyses. Petersen and Hyde (2010) posited that, as societies develop and become more sexually liberal, gender differences will continue to narrow, creating equal opportunities for sexual expression between men and women.

In summary, there is evidence that gender differences in sexual attitudes and behaviours are beginning to narrow, with women becoming more sexually evolved and open, arguably on a par with men (Petersen & Hyde, 2010). However, it is noteworthy that, with a few exceptions, previous research on gender differences in sexuality involved university students, and many of these studies did not report demographic information about the sample, such as race or ethnicity. As a result, they are unable to identify to what extent, if at all, gender differences are related to ethnicity. Therefore, the following section examines what is known about the relationship between sexuality and ethnicity and provides an introduction to the broader theme of the cultural context of sexuality that underpins the design of the current study.

2.1.2 Ethnicity and Sexuality

Across disciplines, ethnicity has been conceptualised in different ways. The present study draws on the idea that ethnicity refers to “one or more of the following: shared origins or social background; shared culture and traditions that are distinctive, maintained between generations, and lead to a sense of identity and group; and a common language or religious tradition” (Senior & Bhopal, 1994, p. 327). In the current study, ethnic groups are conceptualised as subgroups within a larger context that claim a common ancestry and share one or more of the following elements: culture, religion, language, kinship, and place of origin (Phinney, Horenczyk, Liebkind, & Vedder, 2001). It has been suggested, however, that “ethnicity is perhaps better understood as the sense of difference that can occur when members of a particular cultural, tribal or national group interact with non-members” (Elam & Fenton, 2003, p. 18)).

Compared to research on gender differences, far fewer studies have investigated ethnic differences in sexuality (Ahrold & Meston, 2010; Fugère, Escoto, Cousins, Riggs, & Haerich, 2008; Sprecher, Treger, & Sakaluk, 2013). Wiederman, Maynard, and Fretz (1996) analysed 1,127 reports published between 1971 and 1995 to determine the extent to which ethnicity had been a focus in sexuality research. They found that, although the ethnic diversity of samples increased over time, ethnicity was considered as a relevant variable in only 7.3% of published research articles. This clearly suggests that research has not focussed on ethnicity to the same extent that it has on other variables, such as gender (Sprecher et al., 2013). The findings of the current study will make an important contribution to filling this gap in the literature.

The available literature on ethnic differences in sexuality suggests that Asians in general are more restricted in their expression and experience of sexuality. A global study explored sexual attitudes and sexual help-seeking behaviours of 2,500 men and women (aged

40–80 years) from 29 countries. Respondents from Asian ethnic backgrounds reported low levels of satisfaction with sexual function and moderate to low levels of importance of sex compared to respondents from other countries (Nicolosi, Glasser, Kim, Marumo, & Laumann, 2005). Similarly, Okazaki (2002) concluded that, regardless of age, Asian Americans were more conservative than any other ethnic group on domains such as sexual timetables (timing of sexual initiation), and behaviours and attitudes regarding reproductive health and sexual abuse.

Consistent with these findings, Meston and Ahrold (2010) found that Asians reported more conservative levels of sexual experience and frequency of sexual behaviours, fewer lifetime partners and later ages of sexual debut than their Euro-American or Hispanic counterparts. For Asian women in particular, Cain et al. (2003) found that Chinese and Japanese women (n=3,262) were less likely than Euro-American women to consider sexual intercourse as an important activity in their lives. However, these results need to be interpreted with caution since Asians are less likely to self-report liberal sexual attitudes and behaviours than Euro-Americans (Ahrold & Meston, 2010).

By contrast, African-Americans have been found to exhibit the most permissive sexual attitudes and behaviours. A longitudinal study involving a large sample of young adults (n=7,777) from a university setting over a 23-year period reported that African-American men were more permissive towards casual sex than White, Hispanic, and Asian men (Sprecher et al., 2013). Similarly, Browning and Burrington (2006) found in an ethnically diverse sample (Latino, African American, and Euro-American, n=951) that young African American men were more likely to endorse early sexual behaviour than White and Hispanic Americans. In the United Kingdom, French et al. (2005) analysed data from 75 in-depth interviews with Bangladeshi, Indian and Jamaican young people. The results consistently showed that young Jamaican British men held attitudes that encouraged pre-marital sex whereas Bangladeshi

British men fervently opposed sex outside of marriage. Young Bangladeshi British men, however, reported more sexual activity than their female counterparts – a finding consistent with those from other studies (Coleman & Testa, 2007; French et al., 2005; Griffiths, French, Patel-Kanwal, & Rait, 2008), suggesting that gender differences continue to exist on an ethnic level. Among South Asians in the United Kingdom, Pakistanis were found to be more likely to hold conservative sexual attitudes (Griffiths et al., 2011).

Overall, however, studies exploring ethnic differences in sexuality have generated mixed results. While some studies found Mexican Americans (Hispanics) held less permissive sexual attitudes than white Americans (Fugère et al., 2008; Padilla & O'grady, 1987). Sabogal, Perez-Stable, Otero-Sabogal, and Hiatt (1995) reported that Hispanic men were more likely than Euro-American men to endorse early sexual intercourse.

In summary, four key findings are relevant to the current study:

- § Ethnic differences in sexual attitudes, behaviours and experience have been identified.
- § Asians were frequently found to be more conservative in their attitudes towards sexuality and sexual behaviours than other ethnic groups.
- § Asian women (both living in Asia and in other countries as migrants) were found to be more conservative in their sexual attitudes and behaviours than their non-Asian counterparts, and more conservative than Asian men.
- § Previous studies on sexuality either compared different ethnic groups within a sample or compared samples collected from universities that had different proportions of ethnic groups. The current study addresses this limitation by studying cross-sectional data from four different ethnic groups of adult South Asian women.

The following section discusses cultural influences on sexuality, beginning with a brief account of how the term culture is understood in this thesis.

2.1.3 Culture and Sexuality

It has long been acknowledged that individual behaviour is a function of the physical, social and psychological environment (Triandis, Malpass, & Davidson, 1973). Since culture is a fundamental element of an individual's experience (Lehman, Chiu, & Schaller, 2004), it is important to understand how culture influences sexual attitudes and behaviours (Triandis et al., 1973).

There are numerous definitions of culture. Anthropologists define culture as a set of guidelines which individuals inherit as members of a particular society. Such guidelines tell them how to view the world, how to experience it emotionally and how to behave in it (Amaro, Navarro, Conron, & Raj, 2002). Almost all sociological definitions of culture suggest that it represents a combination of shared meanings and distinct behavioural norms within some definable population that differ from those shared within other populations (Lehman, Chiu, & Schaller, 2004). The present study adopts the seminal definition of Kroeber and Kluckhohn (1952) as cited in Cuellar and Paniagua (2000). In this definition, culture refers to

shared learned meanings and behaviours that are transmitted from within a social activity context for the purpose of promoting individual/societal adjustment, growth and development. Culture has both external (i.e., artefacts, roles, activity contexts, institutes) and internal (i.e., values, beliefs, attitudes, patterns of consciousness, personality styles, epistemology) representations. The shared meanings and behaviours are subject to continuous change and modifications in response to changing internal and external circumstances (p. 12).

Individuals often belong to more than one cultural group, and culture can be based on any unifying social phenomenon such as race, ethnicity, gender, class, religion, region, national origin and age (Amaro et al., 2002; Wingood & DiClemente, 2013). As culture guides the

creation of meanings across many spheres of social life, it has been argued that complex social issues can be explained and resolved through cultural paradigms (Fiske, 2000; Lehman et al., 2004). The early work of Foucault (1978) initiated discussion of how culture guides and constructs meanings around crucial issues such as sexuality and has shaped subsequent thinking about sexuality as a cultural construct (DeLamater & Hyde, 1998). In recent years, the concept of sexuality as a cultural construct has been widely used in sexuality research (Parker, 2009).

Contemporary thinking about sexuality as a cultural construct has been heavily influenced by Gagnon and Simon (1973) pioneering work on sexual scripting. Sexual scripting theory (Gagnon & Simon, 1973; Simon & Gagnon, 1986, 2003) links sexual behaviour and experience to meanings that are learned within a particular social and cultural context (Kimmel, 2007; Parker, 2010). The theory identifies three levels of sexual scripts: cultural, interpersonal and intrapsychic. Cultural scripts provide a broad framework of instruction about sexual behaviour and experience that exists at the level of collective life. Interpersonal scripts translate this social framework into individual experience, allowing individuals to learn the cultural scripts for sexual interactions in specific settings. Intrapsychic scripts influence the ways that individuals interpret and attach meanings to their own sexual experiences, behaviours and interactions. These levels reciprocally influence each other, and scripts on all three levels are important determinants of individuals' sexual attitudes and behaviour (Gagnon, 1990; Simon & Gagnon, 1986).

According to Gagnon, "sexuality is not . . . [a] universal phenomenon which is the same in all historical times and cultural spaces" (Gagnon, 2004, p. 133). In other words, sexual scripts vary from culture to culture and by subgroups within the culture (Schneider & Gould, 1987). The theoretical framework of sexual scripting has been applied widely in sexuality research in order to understand and interpret the development and experience of

sexuality; in particular, how individuals adhere to or deviate from the guidelines of dominant sexual scripts in different cultural settings (Dworkin, Beckford, & Ehrhardt, 2007). Although the current study does not seek to empirically assess sexual scripts, the theory is relevant because its aim is to understand the factors (age, ethnicity, relationship status, length of residency in the country of migration, cultural adaptation after migration) that shape sexuality from a cultural perspective.

2.2 Theoretical Background

This section discusses the theoretical framework that guided the present study. This framework is embedded in social constructionism and acculturation theory.

2.2.1 Social Construction Theory

According to Gergen (2003), “the phrase social construction refers to a tradition of scholarship that traces the origin of knowledge, meaning, or understanding to human relationships” (cited in Kham, 2016, p. 31). Social constructionism has many roots, notably in the philosophy of the social influences on human experience (DeLamater & Hyde, 1998). Several of its major themes occur in the writings of authors at different times and places. Vico, Kant, Nietzsche, Dewey and Wittgenstein have all made constructionist remarks (Gergen, 2003, 2011; Kham, 2016). A landmark contribution to social constructionism was made by Berger Peter and Luckmann (1966) in their book *The Social Construction of Reality*, in which they argued that “reality is socially constructed” (p.1) – that is, all knowledge is created socially, including knowledge of what we perceive as reality (Kham, 2016). As Gergen (2011) explains, “what we take to be true as opposed to false, objective as opposed to subjective, scientific as opposed to mythological, rational as opposed to irrational, moral as opposed to immoral is brought into being through historically and culturally situated social

processes” (p. 109). Therefore, the concept of objectively knowable truth does not exist in social construction theory. Instead, social constructionists propose that an evolving set of knowledge/meanings is continuously constructed through a dynamic interaction between socio-cultural processes and interpersonal history, belief, values and ideas (Hoffman, 1990). In this process of structuring reality, individuals play an active role under the guidance of their culture (Tiefer, 1990). For social constructionists, each individual has a unique view of the world and understanding of reality that is shaped through social interaction (Kham, 2016).

Gergen (1985) identifies four key assumptions of social constructionism:

- The way in which people study the world is based on available concepts, categories, and methods; these categories are more a product of language than of empirical discovery.
- The various concepts and categories that people use vary considerably in their meanings and connotations from culture to culture and over time. Concepts are assumed to be related to human functions and experiences.
- The popularity or persistence of certain concepts and categories depends on their usefulness rather than on their validity.
- The way in which people describe or explain the world is a form of social action that has consequences.

These assumptions have implications for the methods researchers select and how they make meaning of knowledge that is constructed within the social and cultural context of the research setting (Kham, 2016). The contextual approach of social constructionism is highly relevant to the present study, which takes account of the cultural and social conditions that shape individuals’ sexual attitudes and behaviours (Andrews, 2012; Kham, 2016). The following section discusses how scholars have used social constructionism to examine sexuality in different social and cultural settings.

2.2.1.1 Social constructionist approach to sexuality

Social constructionists maintain that what most people call reality is a consensus worldview created through social interaction (Andrews, 2012; Gergen, 1985; Herek, 1986). From this perspective, sexuality must be understood within its historical, cultural and social context. According to Vance (1991), “a social construction approach to sexuality would examine the range of behaviour, ideology, and subjective meaning among and within human groups, and would view the body, its functions, and sensations as potentials (and limits) which are incorporated and mediated by culture” (p. 879).

Several scholars credit the modern social constructionist approach to sexuality to Michel Foucault (1978). Foucault’s theory of sexuality challenged the essentialist paradigm of sexuality as a biological quality characterised by an inner drive. He argued that sexuality is a cultural construct whose meanings are derived from language and influenced by institutionalised discourses (DeLamater & Hyde, 1998). According to Foucault (1978), sexualities are constantly produced, modified and changed with corresponding changes to sexual discourse and experience.

Among many others, Weeks (1986) and Vance (1991, 1998) made important theoretical contributions to the literature on the social construction of sexuality. Both agreed that sexuality is constructed by culture and society. Vance argued that this occurs when history confronts individuals with social circumstances (DeCecco & Elia, 1993), noting that

Social Construction Theory in the field of sexuality proposed an extremely outrageous idea. It suggested that one of the last remaining outposts of the “natural” in our thinking was fluid and changeable, the product of human action and history rather than the invariant result of the body, biology or an innate sex drive (Vance, 1998, p. 160).

Vance (1991) favoured a behavioural definition of sexuality, proposing that a physically identical sexual act can have varying social significance depending on how it is defined and understood in particular historical and cultural periods.

Weeks (1986) adopted a similar social constructionist position:

sexuality only exists through its social forms and social organization. Moreover, the forces that shape and mould the erotic possibilities of the body vary from society to society (p. 18).

Weeks, however, focussed more on the socio-cultural construction of sexuality that gives meaning to collective or personal sexual subjectivities (e.g. sexual identities) than on sexual behaviour (DeCecco & Elia, 1993).

In summary, in line with sexual script theory (Gagnon & Simon, 1973), the social constructionist approach adopts the view that sexuality is not a universal phenomenon and, hence, is not the same in all historical times, societies and cultures (Gagnon, 1990). In other words, sexuality is constituted differently within different socio-cultural contexts and, hence, discourses on sexuality can have different significance and meaning in different cultures and epochs (DeLamater & Hyde, 1998; Vance, 1991, 1998; Weeks, 1986, 2002). Cross-cultural variations in sexuality, thus, became a focus for a great deal of interdisciplinary research over the last two decades (Parker, 2009). The present study uses a social constructionist lens to examine how an individual's sexuality is shaped by the social and cultural context and how it acquires different meanings within and between different ethnic groups. The following section discusses the theoretical framework of acculturation that guided the study design.

2.2.2 Acculturation

Migration inevitably influences an individual's cultural orientation (Bhugra & Becker, 2005), but the degree and direction of cultural influence depends on whether or how migrants

reconcile the values, beliefs and norms of their traditional culture and the culture in the new setting (Siatkowski, 2007). Culture is the reference point from which individuals create, define and understand reality (Cuellar & Paniagua, 2000). Hence the concept of acculturation is central to understanding the process of cultural learning and psychological adaptation to culture change in migrants (Siatkowski, 2007). Previous acculturation studies provided policy makers with data that helped them to understand the positive and negative aspects of adapting to a new culture (Chirkov, 2009).

The conceptual framework of acculturation has been deployed to investigate the changes that come with intercultural contact in diverse ethnocultural settings (Ward, 2001). Acculturation has become a key concept in sexuality research, as measures of acculturation provide insight into the effects of culture on sexuality, both between ethnic groups and between different ethnocultural groups. This is evidenced in a growing body of empirical research on acculturation and sexuality (Ahrold & Meston, 2010; Brotto, Chik, Ryder, Gorzalka, & Seal, 2005; Brotto, Chou, Singh, & Woo, 2008; Brotto, Woo, & Ryder, 2007; Meston & Ahrold, 2010; Meston, Trapnell, & Gorzalka, 1996; Meston et al., 1998; Woo & Brotto, 2008; Woo, Brotto, & Gorzalka, 2009).

The increasing flow of migrants around the world has prompted growing scholarly interest in acculturation over recent decades (Kuo, 2014; Ramanathan, 2015; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). The concept of acculturation originated in anthropology during the period of European colonial expansion (Guarnaccia & Hausmann-Stabile, 2016; Hunt, Schneider, & Comer, 2004); its use has been traced to as early as 1880 in American anthropology. Subsequently the concept was adopted by many other disciplines including psychology, sociology and epidemiology (Hunt et al., 2004).

Acculturation has been used as an important variable in health-related research, but it has been conceptualised in different ways by different disciplines (Hunt et al., 2004; Salant &

Lauderdale, 2003). In the field of epidemiology, for instance, acculturation studies gained prominence in the 1960s when a study by Henry and Cassel (1969) revealed an association between modernisation and blood pressure (Hunt et al., 2004). This study showed that increase in blood pressure in modernised communities was due to stressful nature of social and culture change (Henry & Cassel, 1969). Since then public health researchers have used acculturation as an explanatory variable to describe health disparities among ethnic minorities. In psychology, acculturation has been a major focus of scientific inquiry in studies of mental health (stress, coping) in the context of migration and cultural change (Koch, Bjerregaard, & Curtis, 2004; Kuo, 2014). Over the last four decades, significant advances have been made in theoretical models of acculturation (Stuart & Ward, 2011), and social and behavioural scientists have developed several analytical tools to quantify acculturation using psychometric scales (Salant & Lauderdale, 2003).

2.2.2.1 Conceptualising acculturation

As previously noted, acculturation is one of the most important individual difference constructs in ethnic minority research (Chirkov, 2009; Kuo, 2014; Miller, 2007). Yet, the published literature contains numerous definitions of acculturation. Most of these derive from the 1936 “*Memorandum for the Study of Acculturation*” by anthropologists Redfield, Linton, and Herskovits (1936) (Guarnaccia & Hausmann-Stabile, 2016). They defined acculturation broadly as a phenomenon that results when “groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original culture patterns of either or both groups” (Redfield, Linton, and Herskovits, 1936, p.149). Most often, the context in which this process occurs is an ethnically pluralistic society in which groups of migrants from one culture come into contact with a host culture, typically referred to as the mainstream or dominant culture. One of the most widely accepted conceptualisations of acculturation is that proposed by Berry (Berry, 1992, 1997; Berry &

Kim, 1988). This theoretical framework defines acculturation as a multidimensional process of change that occurs when individuals of different cultural groups come into continuous contact (Berry & Kim, 1988). Where other definitions, such as Linton's, considered acculturation as a group process, Berry conceptualised it as a multidimensional process of change at both individual and group levels (Berry, 2003; Chirkov, 2009).

Critics such as Hunt et al. (2004) maintain that inconsistent conceptualisations of acculturation in published literature have led to serious errors in the use of acculturation as a variable in health research. These differences reflect differences in how acculturation domains are conceptualised. Domains of acculturation refer to the levels at which acculturation can take place (Miller, 2007). Some previous researchers used broad conceptualisations, while others were more specific (Hoffman-Goetz, Breen, & Meissner, 1997). Some argued that it should include behavioural domains as well as values and attitudes (Hoffman-Goetz et al., 1997) whereas others proposed that acculturation domains should include values, attitude and behaviour, and ethnic identity (Padilla, 1980). In recent years, the concept of acculturation has also come to encompass social, economic and political influences (Fang, Sun, & Yuen, 2016; Hindriks, Verkuyten, & Coenders, 2015).

2.2.2.2 Acculturation theories and models

A review of the theoretical literature on acculturation reveals two main paradigms: a unidimensional model (Gordon, 1964) and a bi-dimensional model (Berry, 1991, 1997; Rudmin, 2003).

In the former, acculturation is conceptualised as a unidimensional process. Change in cultural identity is seen to take place over a period of time, and along a single continuum (Ryder, Alden, & Paulhus, 2000). Gordon (1964) proposed that, in the process of acculturation, individuals give up their traditional values and behaviours as they take on the values and behaviours of the host culture (Schwartz et al., 2010). This unidimensional

approach is also referred to as the assimilation model, which involves a shift from cultural maintenance to full adaptation to the host culture (Ryder et al., 2000).

In contrast, the bi-dimensional model does not view cultural adaptations as necessarily polar opposites. In this model, acculturation is best understood by viewing the home and host cultures as independent of one another (Ryder et al., 2000; Sullivan et al., 2007). In other words, the extent to which individuals maintain their culture of origin (cultural maintenance) and adopt the culture of the host country (cultural adaptation) needs to be measured independently since they may adopt values and attitudes of the host culture without totally giving up those of their home culture (Berry, 1991, 1997).

The most widely used and sophisticated bi-dimensional model is that of John Berry (Ryder et al., 2000; Stuart & Ward, 2011; Sullivan et al., 2007). Berry (1991)'s model is based on two dimensions:

- Cultural maintenance: The extent to which individuals value and wish to maintain their cultural identity; and
- Contact-Participation: The extent to which individuals seek out contact with those outside their own group, and wish to participate in the daily life of the larger society.

Berry developed his acculturation framework around responses to two questions:

- Is it considered to be of value to maintain one's identity and characteristics?
- Is it considered to be of value to maintain relationships with a larger society? (p. 27)

Based on the responses, Berry (1991, 1997) identified four strategies of acculturation: integration ('yes' to both questions), assimilation ('no' to the first question, 'yes' to the second), separation ('yes' to the first, 'no' to the second) and marginalisation ('no' to both) (Figure 2.1). In other words, Berry conceptualised acculturation as a multidimensional process involving four distinct acculturating strategies (Ryder et al., 2000).

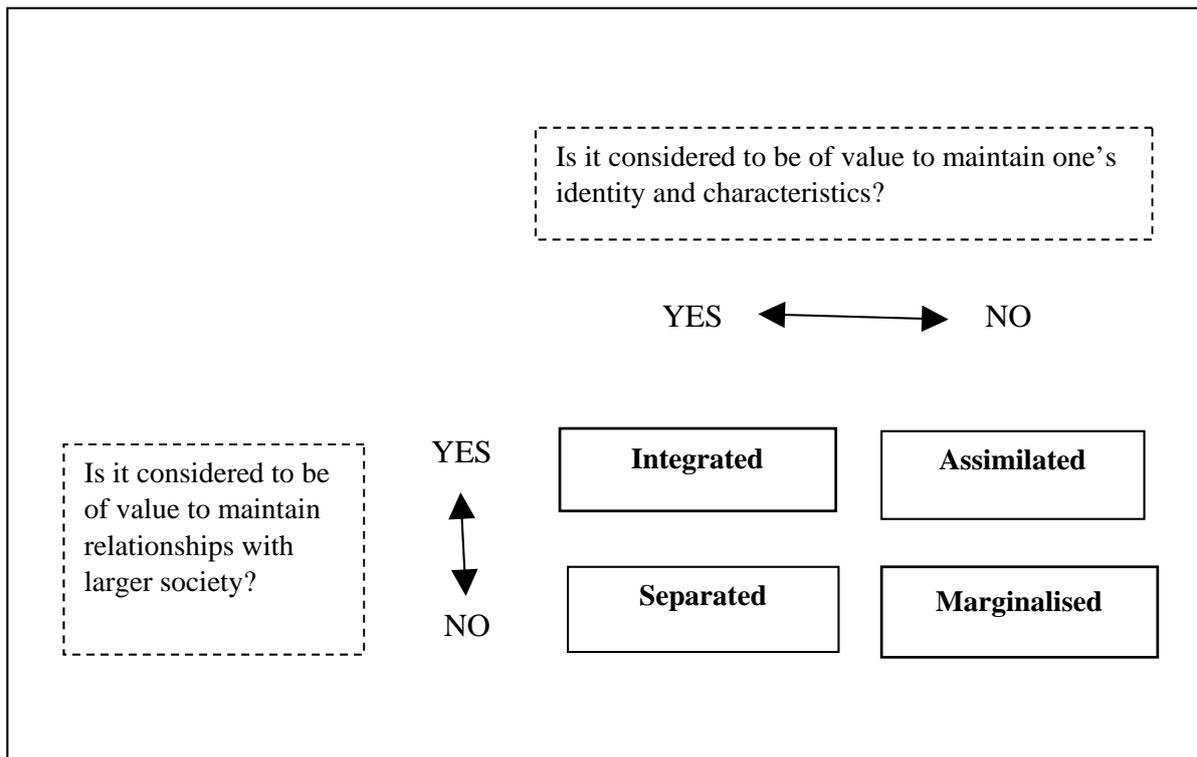


Figure 2.1 Acculturation framework (Adapted from Berry, 1991, 1997)

Assimilation involves moving away from one's ethnic group and adopting, in full, the culture and identity of the host society. Integration involves maintaining one's ethnic identity as well as maintaining a sustained link with the host culture. Separation entails withdrawal from the host society and marginalisation entails a lack of meaningful immersion (loss and alienation) in either the ethnic or host societies (Berry, 1991, 1997).

Despite its widespread use, this framework has also been criticised, partly because of its lack of clarity over dimensional and categorical conceptions of these dimensions (Lopez-Class, Castro, & Ramirez, 2011). Triandis (1978) argued that Berry's acculturation model is so complex that a large number of dimensions can be included and it is not particularly testable in the field. This model has also been criticised for its lack of psychological and cultural content and its inability to explain individual and group differences effectively

(Rudmin, 2003). By contrast, Koch et al. (2004) claimed that Berry's model only included psychological dimensions, whereas socio-demographic and socio-economic factors could be more important in contributors to the mental health experiences of migrants. Overall, however, it is clear that acculturation needs to be understood as a multidimensional process of change. Accordingly, Berry's theoretical framework is adopted in the present study.

2.2.2.3 Measures of acculturation

A variety of acculturation measures has been developed, ranging from single index to multidimensional scales (Kang, 2006). The single item indices include generational status, language preference, length of residency in the host country, and participation in the host culture, among others (Ryder et al., 2000). These measures have been criticised for being unable to fully account for the multifaceted complexities of acculturation (Cabassa, 2003; Kang, 2006). They are often called proxy measures in studies where acculturation is implied rather than ascertained (Hunt et al., 2004).

Other measures have been developed for use in several bi-dimensional models proposed by theorists other than Berry (Shah, Zhu, Wu, & Potter, 2006). Most of these acculturation instruments were designed for use with specific ethnic groups, such as the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA) for Asian Americans (Suinn, Ahuna, & Khoo, 1992), the Acculturation Rating Scale for Mexican Americans-II (ARSMA-II) for the group of Hispanic Americans (Cuellar, Arnold, & Maldonado, 1995) and the African American Acculturation Scale AAAS) for African Americans (Landrine & Klonoff, 1994).

Three scales have been developed to measure acculturation among South Asian migrants. One was specifically developed for South Asian adolescents (Ghuman, 1998) and is discussed in more detail in the following section. The second instrument, the Cultural Values Conflict Scale (CVCS), was developed to measure conflict in cultural values among South

Asian women as a function of their acculturative experience (Inman, Ladany, Constantine, & Morano, 2001). Raj and Silverman (2003) created a 10-item South Asian acculturation scale that included domains such as language, food and community affiliation. The authors noted, however, that the scale was only developed for the purpose of their study, which investigated whether acculturation played a role in increased/decreased risk of injury from intimate partner violence among South Asian women. Of these three scales, then, one (Ghuman, 1998) was for adolescents, one (Inman et al., 2001) was not a direct measure of acculturation, and the third (Raj & Silverman, 2003) lacked external validity. Hence it can be concluded that there is no acculturation measure for South Asian adults. Menon, Szalacha, and Prabhugate (2012) support this conclusion. In the present study, both unidimensional (length of residence) and bi-dimensional (Stephenson Multigroup Acculturation Scale, SMAS) measures were used to assess acculturation among South Asian women. The following sections describe some of the most widely used measures of acculturation in the published literature.

Ghuman's Acculturation Scale. This 29-item scale was originally developed in 1975 to assess biculturalism among young South Asian adolescents in Birmingham, England (Ghuman, 1998). The scale included questions on food and clothes, the role of women, religion, entertainment and community life. The scale's reliability (Cronbach's alpha=0.82) and validity were established on a large sample of South Asian young people in England (Ghuman, 1991). The scale was subsequently extended by adding two other items and replacing an item on school dinners for use in a Canadian study (Ghuman, 1994). The reliability (Cronbach's alpha) of the revised scale ranged from .084 to 0.88, and it was later employed in a study of South Asian adolescents in Australia (Ghuman, 2000). This scale was not used in the present study because it had been specifically developed for adolescents, whereas the present study focuses on South Asian adults.

Acculturation Rating scale for Mexican Americans II (ARSMA -II). This scale (Cuellar et al., 1995) was developed by adding two separate subscales to the original Acculturation Rating Scale for Mexican Americans-I (Cuellar, Harris, & Jasso, 1980) in order to assess acculturation using a multidimensional and orthogonal approach. The measure comprises 30 items, rated on a five-point scale, that examine behavioural and attitudinal indicators of acculturation, such as language preference, ethnic association and interaction, ethnic parent and self-identification. The two subscales that independently measure acculturation are Anglo Orientation (AOS) and Mexican Orientation (MOS). The subscales were found to have good internal reliability (Cronbach's alpha = .86 and .88, respectively) (Cuellar et al., 1995).

Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA). This is the most widely used instrument for assessing acculturation among Asian Americans (Ramanathan, 2015). Originally, the scale had 21 items, many of which were adopted from the Acculturation Rating Scale for Mexican Americans (ARSMA) (Cuellar et al., 1995) as a development model (Suinn, Rickard-Figueroa, Lew, & Vigil, 1987). These 21 items relate to language preference, friendship choice, cultural identity, behaviour, and generational and/or geographic history. Five new items (22 - 26) were included later (Suinn et al., 1992) in order to assess acculturation using a multidimensional and orthogonal approach. The second section has three dimensions: values, behavioural competencies, and self-perceived identity.

Stephenson Multigroup Acculturation Scale. The SMAS is a bi-directional 32-item questionnaire that was first developed and validated to assess the degree of acculturation among individuals from five ethnic groups in America: African Americans, individuals of African descent, Asian Americans, European Americans, and Hispanic Americans (Stephenson, 2000). The Hispanic American respondents were from Mexico, Central

America (Costa Rica), South America (Brazil, Bolivia, Peru, Colombia and Ecuador) and the Caribbean (Cuba, Puerto Rico, Dominican Republic).

The scale defined acculturation as the degree of immersion in dominant and ethnic societies. Immersion was measured as preferences and attitudes towards use of language, social interaction, food and media (e.g. “I eat traditional food from my native culture” and “I attend social functions with people from my native country”). Exploratory factor analysis yielded two factor solutions; *Ethnic Society Immersion* (ESI) and *Dominant Society Immersion* (DSI) (Stephenson, 2000).

The ESI (17 items) scale reflects the level to which one retains values and practices of an ethnic group, whereas the DSI (15 items) scale reflects the extent to which an individual adopts the practices of the dominant society. The alpha coefficients were 0.86 for the entire scale, 0.97 for ESI, and 0.90 for DSI. In terms of validity, both ESI and DSI were significantly correlated with ethnic group affiliation ($r = -0.39$, $p < .001$ for ESI and $r = 0.46$, $p < .001$ for DSI) (Stephenson, 2000).

Convergent and discriminant validity was tested by comparing DSI and ESI with two other widely used acculturation scales - the Acculturation Rating Scale for Mexican Americans-II (ARMSMA-II) (Cuellar et al., 1995) and the Bidimensional Acculturation Scale for Hispanics (BAS) (Marin & Gamba, 1996). The BAS measures Hispanic and non-Hispanic acculturation while the ARMSMA-II measures Mexican Orientation (MOS) and Anglo Orientation (AOS) (discussed earlier). DSI was found to be positively correlated with AOS and the non-Hispanic subscale while ESI was found to be positively correlated with MOS and the Hispanic subscale of BAS and ARMSMA-II acculturation scales, respectively. Conversely, ESI was found to be correlated with AOS and the non-Hispanic subscale while DSI was found to be negatively correlated with MOS and the Hispanic subscale of BAS and ARMSMA-II acculturation scales, respectively (Stephenson, 2000).

In summary, acculturation is a multidimensional construct that involves multiple areas of behaviours and psychological experiences. This is recognised in Berry's theory of acculturation. The current study chose SMAS as an appropriate measure of acculturation among multi-ethnic South Asian women for two reasons. First, this measure is in line with Berry's model of acculturation. Second, it was developed for use with multi-ethnic samples whereas most other bi-dimensional measures were intended for specific groups.

2.2.2.4 Limitations in acculturation studies

Critiques of acculturation studies (irrespective of outcome measured) have identified some limitations. These include: 1) inconsistent conceptualisations of acculturation and reliance on unidimensional models; 2) inconsistent measures of acculturation and reliance on a single item index such as length of residency or language proficiency; and 3) failure to incorporate the contextual aspects of the acculturation process (Chirkov, 2009; Hunt et al., 2004; Salant & Lauderdale, 2003; Schwartz et al., 2010). Although these limitations were identified across literature which examined acculturation influences on various outcomes, research on acculturation and sexuality; in particular, failed to adequately address these limitations. This is discussed in detail in section 2.3.2.

2.3 Acculturation, Sexuality and Sexual Help-seeking Attitudes and Behaviour

2.3.1 Acculturation among South Asian Migrants

This section presents a review of studies relating to acculturation among South Asian migrants around the world irrespective of outcome measured. It addresses the question: Is there a common pattern of acculturation and, if not, how do they differ and why?

South Asians constitute a considerable proportion of migrants in Australia, Canada, the United States and the United Kingdom (Crawford, Ahmad, Beaton, & Bierman, 2016; Kwok, Tranberg, & Lee, 2015). Despite being one of the fastest growing migrant populations all over the world, research examining their acculturation is limited (Ramanathan, 2015). As discussed earlier, there are four acculturation strategies: assimilation, integration, separation and marginalisation (Berry, 1991, 1997). In Australia, there is a dearth of research on this community and their acculturation strategies (Dey & Sitharthan, 2017). A review of relevant literature showed that a majority of international and Australian studies consistently applied Berry's (1991, 1997) theoretical framework of acculturation and concluded that integration was the preferred strategy of acculturation among South Asians. The following discussion examines three studies of South Asians in Australia (Dey & Sitharthan, 2017; Ghuman, 2000; Ramanathan, 2015).

Ghuman (2000) investigated acculturation among South Asian adolescents in Australia. This study was part of a larger project that examined issues around acculturation and identity among South Asian adolescents in the United States, United Kingdom and Canada. The Australian study involved boys and girls (n= 75, aged 14 to 16 years) from three high schools in the city of Newcastle and one in rural New South Wales. Adolescent girls showed a lower degree of acculturation towards Australian culture than boys. Overall, South Asian youth showed a lower degree of acculturation than their counterparts in Canada, the United Kingdom and the United States. In terms of acculturation strategy, South Asian adolescents favoured integration, whereby they retained their own ethnic culture while adapting to Australian culture.

Consistent with these findings, Dey and Sitharthan (2017) concluded that integration was the most preferred acculturation strategy among South Asian adolescents in Australia. The authors argued that Australia's multiculturalism played an important role in determining

adolescents' choice of such an acculturation strategy. Among South Asian ethnic groups, Sri Lankans preferred integration, while Pakistani adolescents preferred separation and no group preferred assimilation.

Previously, Ramanathan (2015) investigated Indian adult men (n=278) living in Australia as part of a larger study on the influence of acculturation on sexuality and sexual health of Indian men in Australia. The results suggested that biculturalism (integration) was the dominant pattern of acculturation among the respondents. Biculturalism was reported for the behavioural and self-identity domains of SL-ASIA discussed earlier in this chapter (Suinn et al., 1992), while ethnic values (Indian values) predominated in the values domain.

Consistent with this, among a sample of first generation Indian women (n=421) living in the United States, 85% of the respondents preferred an integration strategy (Kankipati, 2012). The author argued that Indian women are predisposed towards integration as they have high English proficiency (because English is the medium of education in schools in India), are employed in professional or related occupations as they came to the U.S. as professional migrants, and have already been exposed to western culture in India. The study also found that Indian women aged over 30 years were more likely to prefer an integration strategy than younger women.

A recent study among South Asian migrants (n=906) in the United States (Needham et al., 2017), however, indicated that they employed assimilation, integration and separation as acculturation strategies but rejected marginalisation. Like their Australian counterparts (Dey & Sitharthan, 2017; Ramanathan, 2015), participants' most preferred strategy was integration (more than 50%). The authors also found that those with higher income, no religious affiliation, who had spent longer in the United States and spoke English well were less likely to use the separation strategy than the assimilation or integration strategies.

By contrast, Naidoo (2003) concluded from her study of South Asian women that South Asian women displayed a “selectivity” in their acculturation attitudes. They were “adamant” about retaining the values of their traditional culture (family, home, child rearing, religion, relationships) as part of their self-identity while incorporating values from Canadian culture into their evolving identities. The western values they admired were opportunities for achievement for themselves and their children, especially in relation to education and careers. These findings are in line with the integrative mode of acculturation, whereby South Asian women maintained and adopted values from both ethnic and mainstream cultures.

There are indications, however, that trends may be changing in younger generations of South Asian migrants. An exploratory study of South Asian migrants (n=240) in Britain compared the acculturation attitudes and cultural identities of second-generation Indian and Pakistani adolescents (Robinson, 2009). Results suggested that integration was the most favoured strategy among Indian adolescents while separation was the most preferred strategy among Pakistani youth. Marginalisation was the least supported strategy in both groups.

In summary, the literature indicates a common pattern of integration as the preferred acculturation strategy among South Asians in westernised nations such as Australia, the United States, the United Kingdom, and Canada, whereby migrants adopt the culture, values and norms of the new culture while maintaining their ethnic (homeland) traditions. Marginalisation was rejected in all these countries.

The following section reviews literature on the influence of acculturation on sexuality.

2.3.2 Acculturation and Sexuality

Acculturation has been shown to significantly influence several aspects of sexuality, including sexual knowledge, attitudes, behaviours and sexuality-related health protective behaviour such as cancer screening. Studies, however, have generated mixed results depending on what outcome was measured (i.e. sexual knowledge, attitudes or behaviours),

and what model or measure of acculturation was used. The influence of dominant and ethnic acculturation has been found to differ within and between ethnic groups and even within the same dominant society.

This section reviews previous studies of acculturation and sexuality that have informed the design of the current study. It begins with an overview of research on Asian migrant populations. This is followed by a discussion of relevant literature on acculturation and sexuality among other migrant populations (Hispanics and Latinos). Finally, data on the role of acculturation in breast and cervical cancer screening behaviour are presented.

2.3.2.1 Sexual knowledge, attitudes and behaviours among Asian migrants

There is a paucity of research on acculturation and sexuality among Asian migrants. A review of available literature revealed that, although Asians are characterised by enormous demographic, cultural and ethnic heterogeneity (Okazaki, 2002), earlier research failed to distinguish among them, treating Asians as a homogenous group in demographic terms (Meston et al., 1996, 1998). Until the last decade or so, few studies sought to understand sexuality in Asian populations by addressing their ethnic diversity as East Asian, South East Asian or South Asian (Brotto et al., 2005; Brotto et al., 2008; Brotto et al., 2007; Kennedy & Gorzalka, 2002). Some studies included only a small number of South Asians in their sample, and one did not include any South Asians in its Asian population (Kennedy & Gorzalka, 2002). South Asians have been considered as ‘Non- Asian’ (Meston et al., 1998) or just ‘Asian’ (Brotto et al., 2005) due to small sample size. Only a few authors clearly identified South Asians as a sub-group (e.g. Indian women, Indian men) (Brotto et al., 2008; Ramanathan, 2013) in studies of acculturation influences on sexuality, hence research on this topic is very limited. It is worth mentioning that the small number of studies that closely examined ethnic differences in sexuality among South Asians (Indian, Bangladeshi,

Pakistani) did not investigate acculturation. Following is a brief overview of research on Asian migrants that has focussed on sexuality.

A study of Asian Canadians investigated the influence of acculturation on sexual knowledge, attitudes (Meston et al., 1998) among undergraduate students (n=702) in British Columbia using the Sexual Information and Sexual Attitudes subscales of Derogatis Sexual Functioning Inventory (DSFI) (Derogatis & Melisaratos, 1979). The results showed that Asian Canadians held more conservative attitudes towards masturbation, homosexuality, pornography and uncommitted sex, and demonstrated less sexual knowledge on issues related to sexual anatomy, physiology, psychology and sexual hygiene, than non-Asian Canadians. The study found that acculturation was positively related to sexual knowledge and attitudes. In other words, the more acculturated Asian Canadians were to Canadian culture, the greater was their sexual knowledge and the more liberal were their attitudes. These findings could usefully be compared with results from the current study.

In contrast, Meston et al. (1996) found no influence of acculturation on any of the interpersonal sexual behaviours (assessed on indicators such as sexual experience, sexual drive, sexual fantasy and orientation towards uncommitted sex) using DSFI (Derogatis & Melisaratos, 1979) on the same student sample, except for promiscuity and intercourse fantasies. The differential effect of acculturation on sexual attitudes and behaviours has been attributed to the fact that cultural influences on sexual behaviours may be slower to emerge than influences on sexual attitudes - Asians may learn that sex outside marriage is acceptable in the host culture but be unable to act accordingly "simply because of family constraints" (Meston et al., 1998). Both the studies used length of residency as a measure of acculturation (Meston et al., 1996, 1998). Although the findings provided important clues about sexual knowledge, attitudes and behaviours of the Asian population in comparison with non-Asian Canadians, caution is required to interpret the results. These studies used university samples

with a limited age range, the ability to generalise the results to other age groups is limited. Secondly, the studies employed a unidimensional assimilation model to conceptualise acculturation and length of residency as a proxy measure. As discussed earlier, such an approach has inherent limitations as it fails to account for individuals who adopt biculturalism (integration) as an acculturation strategy (Brotto et al., 2005).

Some of the findings discussed above are consistent with those from a study by Brotto et al. (2005). The authors compared responses of Asians (n=176) and Euro Canadians (n=173) using the same sexual knowledge and attitude scale employed by Meston et al. (1996, 1998); hence, the results are directly comparable. Asian Canadian women had significantly less sexual knowledge, experience, conservative attitudes and lower rates of desire, arousal and sexual pleasure than Euro Canadians.

The difference between the studies of Meston et al. (1996, 1998) and Brotto et al. (2005) is the measure used to assess acculturation. The latter used a bi-dimensional acculturation scale, the Vancouver Index of Acculturation (VIA) (Ryder et al., 2000) in combination with length of residency (a unidimensional scale). The VIA has two domains: heritage acculturation (an individual's culture of birth or upbringing) and mainstream acculturation (the dominant culture in the new setting). Results showed differential influence of acculturation domains on different outcome measures of sexuality: knowledge, attitudes and experience.

For Euro-Canadian and Asian women, both heritage (ethnic) and mainstream (dominant culture) acculturation significantly interacted to predict their sexual attitudes above and beyond the effect of length of residency in Canada (Brotto et al., 2005). This finding is important as it clearly demonstrates that length of residency may be an inadequate index of acculturation. None of the acculturation domains predicted sexual knowledge. Only acculturation towards the mainstream (dominant) culture, however, predicted sexual

experience (petting, oral sex, intercourse, masturbation) in Asian women. The author provided no explanation of this important finding of differential influence of mainstream and heritage acculturation on different aspects of sexuality.

Another investigation by Brotto et al. (2007) reported similar results for the influence of mainstream acculturation on sexual permissiveness in Canadian East Asian men. Unlike Meston et al. (1998), this study did not find any significant relationship between length of residency and attitudes to sexual permissiveness.

A later study by Ahrold and Meston (2010) reported findings similar to those of Brotto et al. (2005). It showed that interaction between mainstream and ethnic culture (using VIA) predicted more casual sexual attitudes in Asian American women rather than mainstream or ethnic acculturation alone. Another study (Meston & Ahrold, 2010), found a differential effect of acculturation on sexual attitudes between different Asian ethnic groups within the same mainstream society. Specifically, acculturation towards mainstream (dominant) culture tended to be a stronger predictor of attitudes towards homosexuality and casual sex for East Asians than for South Asians living in the United States.

These findings by Brotto and associates (Brotto et al., 2005; Brotto et al., 2007) and Ahrold and associates (Ahrold & Meston, 2010; Meston & Ahrold, 2010) are directly relevant to the current study for two reasons. First, they attempted to explain the influence of acculturation on sexuality using a bi-dimensional (VIA) and a unidimensional (length of residency) scale, as does the current study. Second, results showed that both domains of acculturation had interesting effects on sexuality, something that would not have been detected with a unidimensional measure of acculturation alone (Woo et al., 2009). Hence it will be useful to compare the Australian results.

A review of the available literature showed that, in order to capture the essence of 'sexuality', researchers have studied only one or two of the three outcome variables (sexual

knowledge, attitude and behaviour) (Somers & Paulson, 2000). Overall, research on sexual knowledge remains scant, despite the fact that several health behaviour models acknowledge the importance of knowledge as a precursor of healthy behaviour (Ahmad & Stewart, 2004) and that, according to the sexual health literature, certain attitudes and beliefs about sexuality are predictive of sexual knowledge (Somers & Paulson, 2000).

Little is known about the influence of acculturation on sexual knowledge. However, a study by Brotto et al. (2008) explored the relationship between acculturation (using VIA) and reproductive health knowledge among Canadian women (n=663) from East Asian, Indian and European backgrounds along with women living in India (n=145). This study found significant differences in reproductive health knowledge between Indo-Canadian and Indian women. The authors also indicated that Canadian migrant women (East Asian, Indian) with higher levels of acculturation towards mainstream (dominant) culture were likely to have more accurate reproductive health knowledge, while women with higher levels of heritage (ethnic) acculturation were likely to have lower levels of reproductive health knowledge.

Previous studies also investigated the relationship between acculturation and sexual responding (such as first sexual intercourse). Woo and Brotto (2008) concluded that, in Canada, individuals from Asian backgrounds have a higher rate of sexual problems (sexual avoidance, sexual dissatisfaction, non-sensuality) than Europeans and this effect was explained by acculturation (using VIA). The authors showed that, for Asian women who are highly acculturated, later age of sexual debut was associated with more sexual complaints. The study found no significant relationship between heritage acculturation (ethnic) and age of first sexual intercourse and sexual complaints.

Nevertheless, it is clear that these efforts to examine the influence of acculturation on sexuality have been characterised by inconsistencies in methodology and findings. Because acculturation has been inconsistently conceptualised, different measures have been used.

Some studies used a unidimensional measure such as length of residency, while others used a bi-dimensional measure such as VIA in combination with length of residency. Arguably, such inconsistencies may have led to inconsistent results (Meston & Ahrold, 2010). Accordingly, the following discussion examines studies that used acculturation measures other than length of residency and VIA.

In the United States, So, Wong, and DeLeon (2005) explored Asian American college students' (n=248) HIV risks, HIV knowledge, substance use, and acculturation. Acculturation was measured using questions about language spoken at home, food eaten most often, and TV/movie entertainment watched. Results showed that acculturation was associated with higher levels of HIV knowledge and risky sexual behaviour, indicating that the more acculturated Asian students were, the more likely they were to be sexual risk takers, despite having good knowledge of HIV. Those who spoke English at home and watched American entertainment were found to be more likely to have more sexual activities. The study sample, however, over-represented the middle-class subgroup of Asian Americans and was therefore not a true representation of the Asian population as a whole.

Similarly, findings from a study of Asian American adolescents indicated that, for young Asian women, high levels of acculturation were associated with more sexual experience (Hahm, Lahiff, & Barreto, 2006). This study used place of birth and English language use at home to measure acculturation. The authors argued that, as young women (adolescents) acculturate, they place less importance on Asian cultural and familial values. They added that acculturated Asian women (adolescents) perceived sex as an assertion of independence and gender equality

As previously mentioned, Ramanathan (2013) explored the relationship between acculturation and sexuality among Indian men living in Australia using a multidimensional scale (SL-ASIA) in combination with length of residency. Although the results showed that

Indian men were moderately permissive in their sexual attitudes, acculturation (assessed via the 21 items of the SL-ASIA, as discussed earlier) did not significantly predict sexual permissiveness. Ramanathan (2013) concluded that men who believe in Indian cultural values are more likely to have less permissive (more conservative) attitudes towards sexual permissiveness.

In summary:

- § A majority of the studies examining acculturation and sexuality in Asian populations were conducted on young samples of university students. As most participants were in early adulthood, the generalisability of the results to other age groups may be limited. In other words, current knowledge of the influence of acculturation on sexuality among Asians is largely based on biased convenience samples of young university students (Ramanathan 2013).
- § Several studies treated Asians as a homogenous group and failed to report ethnic variations in sexuality among them. Studies that addressed this limitation included only small numbers of South Asians and provided no explanation for this.
- § Overall, across the published literature on acculturation and sexuality among Asians, no information was provided on relationship status. Yet this is an important demographic covariate that is likely to influence sexual attitudes, behaviours and experience. Only one investigation acknowledged this as a limitation and reported that attitudes towards extra-marital sex may differ between married and unmarried individuals (Ahrold & Meston, 2010).
- § Most studies of acculturation and sexuality among Asians were conducted in Canada and the United States and most of these adopted a quantitative methodology. Only one study was conducted in Australia (Ramanathan, 2013) and it employed a mixed method (qualitative and quantitative) approach.

- § Acculturation has been inconsistently conceptualised based on a unidimensional or bi-dimensional model, therefore different measures of acculturation have been used. Some studies used a unidimensional measure such as length of residency, language spoken at home, or place of birth, while others used a bi-dimensional measure, such as VIA or SL-ASIA, in conjunction with a unidimensional measure. The unidimensional model, however, has been criticised as an inadequate measure of acculturation, while there is strong empirical evidence to support the bi-dimensional model.
- § Studies have reported mixed results for the influence of acculturation in Asian populations and between Asian and other populations. This finding may be largely attributable to the use of inconsistent conceptualisations and measures of acculturation.
- § Depending on the outcome measure for sexuality (knowledge, attitude, behaviour), the influence of acculturation varied. No theoretical explanation was provided on this important finding.

2.3.2.2 Research on acculturation and sexuality among Hispanics/Latinas

A substantial body of research has investigated the role of acculturation in sexuality in non-Asian populations, particularly Hispanics/Latinas in the United States. In contrast to the findings on Asian populations, these studies report varying effects of acculturation on sexuality among the latter population. The following section briefly reviews the literature on Hispanic/Latina acculturation and sexuality.

Previous studies showed that mainstream (dominant) acculturation influences sexual experience in Latino adolescents. Afable-Munsuz and Brindis (2006), from an extensive review, reported that a total of 13 studies investigating the relationship between acculturation and sexual activity in Latino youth (adolescents) were published between 1985 and 2006. In

these studies, sexual experience was assessed via a range of activities such as vaginal intercourse, number of partners in the last year, number of lifetime partners, oral sex, anal sex, and sexual initiation. They also employed different measures of acculturation, including country of birth, language, length of residency, and cultural enjoyment. Eleven studies demonstrated a positive relationship between acculturation and sexual experience, with the strongest relationship between language acculturation and sexual initiation.

Several studies, however, indicated that higher acculturation towards the dominant culture was associated with increased sexual risk taking. Newcomb et al. (1998) showed that highly acculturated Latino women (n=227) were more likely to report higher sexual risk than those who were less acculturated. Such a result was consistent with findings from another study of Hispanic women (n=2,596) in which highly acculturated participants reported a higher number of lifetime sexual partners than did less-acculturated women (Sabogal, Faigles, & Catania, 1993). Kaplan, Erickson, and Juarez-Reyes (2002) found that being less acculturated was associated with a later age of sexual debut, fewer lifetime sexual partners, and fewer pregnancies among Latina adolescents (n=670). Similar results were also found in Mexican American adolescents (Adam, McGuire, Walsh, Basta, & LeCroy, 2005). Most of these studies used unidimensional measures to assess acculturation.

By contrast, previous research on the Hispanic population, using language as a proxy, suggested that higher acculturation with mainstream culture was associated with positive outcomes, such as increased condom use. For example, Marin, Tschann, Gomez, and Kegeles (1993) found that mainstream acculturation encouraged Hispanic women to use condoms.

In summary:

Among Hispanic/Latino populations, the influence of acculturation on sexuality varied. Some studies found a negative effect, i.e. acculturation towards the mainstream (dominant) culture was associated with risky sexual attitudes and

behaviours; while others found a positive effect, i.e. acculturation towards mainstream (dominant) culture was associated with safe and healthy sexual attitudes and behaviours.

Similar mixed results are evident in studies that examined the relationship between acculturation and cancer screening behaviour in Asian and other populations. This literature is discussed in the following section.

2.3.2.3 Acculturation and cancer screening behaviour

The purpose of this section is to shed light on the influence of acculturation on breast and cervical cancer screening behaviour.

Breast cancer screening. There is a body of published evidence that acculturation influences breast cancer screening in migrant women. In a study of Hispanic women (n=903) from four different subgroups (Colombian, Dominican, Ecuadorian, and Puerto Rican) in New York City, O'Malley, Kerner, Johnson, and Mandelblatt (1999) reported that greater acculturation (using a linguistic measure) was associated with higher rates of clinical breast examination (CBE) and mammogram. Similarly, Mandelblatt et al. (1999) found that acculturation (measured by length of residency) was positively associated with the number of mammograms and CBEs in Colombian, Dominican, Ecuadorian, Puerto Rican, Haitian, and Caribbean women.

Other studies, however, have reported that greater acculturation towards ethnic culture positively influences breast cancer screening behaviour. A study of older Vietnamese women (n=141) in the United States, for instance, found that less acculturated women tended to participate more in mammography (Yi, 1992). Suarez (1994) also found an independent positive effect of Mexican family attitudes and values on mammogram screening among Mexican women living in the United States. The author argued that Mexican-American women with stronger traditional family attitudes would participate more in mammography

screening because of the emotional and/or financial support they receive from their extended family.

The literature also suggests that acculturation has a small or no effect on breast screening behaviour. Marks et al. (1987), in a study of elderly Hispanic women (n=603) in the United States, used language preference, country of birth, contact with homeland and attitude about children's friends as measures of acculturation. The study found that none of the acculturation dimensions was strongly associated with breast cancer screening behaviour except for English language proficiency, which yielded a small effect. More recently, Kwok, Fethney, and White (2012) found no significant relationship between acculturation (measured by length of residency) and breast cancer screening behaviour in a study of Chinese women (n=292) in Australia.

An earlier study demonstrated a differential effect of various acculturation variables among subgroups of Hispanic Americans. Solis, Marks, Garcia, and Shelton (1990) used language and ethnic identification as measures of acculturation to assess acculturation influence on breast cancer screening among Mexican American, Cuban American and Puerto Rican adults. Only English language use (but not ethnic identification) was found to be associated with breast cancer screening among Mexican Americans. No language effect was observed among Cuban or Puerto Rican women.

Mixed results for the influence of acculturation on breast cancer screening were also reported from studies of South Asian women. Several studies found that higher acculturation was associated with high participation (Boxwala, Bridgemohan, Griffith, & Soliman, 2010; Kwok et al., 2015; Somanchi, Juon, & Rimal, 2010). These studies used length of residency as a proxy measure for acculturation. A study of South Asian Muslim women (n=115) in Chicago, United States, however, found a significant association between participation in mammography and length of residency, but no association using a broad measure of

acculturation - the Suinn-Lew Asian Self Identity Acculturation Scale (SL-ASIA) (Suinn et al., 1992) (Hasnain, Menon, Ferrans, & Szalacha, 2014).

It has been argued that variations in the operationalisation of acculturation may be responsible for such inconsistent results, since studies relied on different measures of acculturation such as length of residency, language proficiency, ethnic identification and family values (Brown, Consedine, & Magai, 2006; O'Malley et al., 1999).

Cervical cancer screening. Previous studies of cervical cancer screening among South Asian women consistently demonstrated that acculturation, using length of residency as a proxy measure, increased their likelihood of having a Pap test (Chaudhry, Fink, Gelberg, & Brook, 2003; Lee, Ju, Vang, & Lundquist, 2010). Studies using a multidimensional measure of acculturation, however, reported different results. For example, using a multidimensional scale (SL-ASIA) (Suinn et al., 1992), Menon et al. (2012) showed that neither length of residency nor all dimensions of acculturation predicted the likelihood of ever having had a Pap test among South Asian migrants (n=127) in the United States.

Gupta, Kumar, and Stewart (2002), in their study of South Asian women in Canada, measured acculturation using a number of dimensions (language, cultural identity, movie preference, involvement in cultural celebrations/traditions and value systems regarding marriage, dating, and other relationship-based factors), in combination with length of residency. The results showed that low levels of acculturation were associated with low participation in cervical cancer screening. The relationship between acculturation (using those dimensions) and Pap testing was stronger than the relationship between length of residency and Pap testing.

Several studies of Hispanic women found that low acculturation to mainstream society was associated with low participation in cervical cancer screening. Coronado, Thompson, Koepsell, Schwartz, and McLerran (2004), for instance, investigated Pap test use

patterns in a population-based sample of Hispanic and non-Hispanic white women from rural Washington State. The study developed an acculturation scale that included questions on ethnic identification, place of birth, language most often spoken, and language most often used for thought. The results showed that less acculturated Hispanic women (n= 382) were more likely than highly acculturated Hispanic and non-Hispanic white women (n= 385) to report personal barriers (such as fear of finding cancer or diseases other than cancer, embarrassment) as reasons for not getting a Pap test. Similar results were found in another study of Hispanic women (n=566) from Phoenix Metropolitan University (Harmon, Castro, & Coe, 1997).

Tang, Solomon, Yeh, and Worden (1999), in a study of Asian and Caucasian students (n=206) from Northeastern University in the United States, investigated acculturation as a predictor of cervical cancer screening using SL-ASIA (Suinn et al., 1992). The first 21 items of the scale, but not the other acculturation dimensions, were associated with cervical cancer screening behaviour. The authors suggested that cervical cancer screening behaviour might be influenced by the family, which would be reflected in the first 21 items (which is based on ethnic identification, language, country of birth and traditional cultural environment).

In summary:

- Mixed results have been reported for the influence of acculturation on breast and cervical cancer screening behaviour among Asians and other communities.
- Lack of consistency in acculturation measures was evident in published studies of breast and cervical cancer screening behaviour among Asian and other migrant communities. This, arguably, is one of the reasons for such inconsistent results.

2.3.3 Sexual Help-seeking

This section summarises literature on help-seeking attitudes and behaviours relating to sexual health. Better understanding of factors associated with help-seeking patterns can help to improve access to treatment and result in better sexual health outcomes (Moreira et al., 2005).

Although the prevalence of sexual problems in women such as sexual dysfunction, sexual disorder and distress about sex has been on the rise, the number of women who seek medical help is lower than the number of women who actually have sexual problems (Berman et al., 2003). Research in the United States showed that women are more likely (5 out of 10) to seek medical help than men (Berman et al., 2003). Shifren et al. (2009) sought to understand the lack of help-seeking behaviour for sexual issues among women, using a cross-sectional survey of 50,002 American households to collect data on help-seeking from health care providers for self-reported sexual problems. Only one-third of women with sexual problems sought help from formal care providers (general practitioner or gynaecologist). Younger women and women who were in a relationship (married or with a current partner) were more likely to seek help. Poor self-perceived health and embarrassment about discussing sexual topics with a physician were identified as barriers to medical help-seeking.

In a vastly contrasting setting, Kohler et al. (2017) conducted in-depth interviews with 20 Malawian breast cancer patients in Africa. The authors concluded that awareness and dispelling misconceptions were key to helping women access medical help for the treatment of breast cancer. These women frequently turned to social networks for help and focused on traditional remedies; economic hardship, distance from available facilities, and overall knowledge of the medical field further limited the likelihood that they would seek help from medical sources. Help-seeking behaviours associated with sexual problems may be mitigated by similar factors.

The Global Study of Sexual Attitudes and Behaviours (GSSAB), a survey of 27,000 men and women from 29 countries, sought to identify what sexual disorders existed within middle-aged demographics around the world (Moreira et al., 2005). The study also reported help-seeking behaviours for sexual health problems in this population. Results showed that 77.8% of women did not seek any professional help or advice for their sexual problems, and only 18.8% of women had made an attempt to seek medical help. The most commonly cited reasons for not seeking help were: 'I thought it was a normal part of growing older' (74% of men and 75% of women) and 'I did not think it was serious' (68% of both men and women). Although the pattern of help-seeking behaviour was remarkably similar in men and women, cross-cultural differences in some help-seeking behaviours were identified.

Similar findings regarding sexual help-seeking behaviours were observed by (Nicolosi et al., 2006) across a large sample population (n=1,345) in Anglophone nations (United States, United Kingdom, Canada, Australia and New Zealand). Thirty-six percent of the men and women surveyed did not seek any help or advice concerning their sexual problems, with little difference between the male and female participants. When asked why they did not actively pursue help, the respondents cited a lack of concern by their physicians, lack of awareness that their problem was in fact a problem, and embarrassment.

A strategic literature search using terms such as *sexual help seeking by South Asians*, *South Asians and sexual health*, *South Asians sexual help*, and *South Asian sexual care* by the current study identified several studies published from 2014 concerning elder abuse, suicidal tendencies, and other issues not relevant to the focus of the current study. When the search strategy was extended to the last 50 years, issues such as the prevalence of HIV/AIDS in American South Asians (Bhattacharya, 2004), help-seeking and other sexual behaviours of lesbian, gay, bi-sexual, transgender, intersex, and queer South Asians in California (Choudhury et al., 2009) and intimate partner violence (sexual violence) (Ahmed, Reavey, &

Majumdar, 2009) were pre-dominant. No study was found on sexual help-seeking among South Asian women in Australia. Clearly, there is a paucity of research on sexual help-seeking attitudes and behaviours among South Asian women. At the same time, it should be noted that the large scale Global Study of Sexual Attitudes and Behaviours (GSSAB) (Moreira et al., 2005; Moreira, Kim, Glasser, & Gingell, 2006; Nicolosi et al., 2006; Nicolosi, Glasser, Kim, Marumo, Laumann, et al., 2005) did not include South Asians.

Ramanathan, Sitharthan, Pepper, and Wylie (2013)'s investigation of 225 Indian men living in Australia showed that a majority (81%) preferred to seek help from medical doctors for sexual health related issues. Among these, more men preferred a doctor from a western background over one with an Indian background. A large proportion of respondents preferred to seek help from their regular General Practitioner (GP). This is consistent with a U.K. study which found that General Practitioners (GP) were the most preferred option for sexual health care among Indians, Pakistanis and Bangladeshis (Griffiths, Hart, & Prost, 2008). Issues around privacy and confidentiality mean that having a GP from the same ethnic and religious background is seen as problematic by South Asians when it comes to seeking sexual health related advice (Griffiths, Hart, et al., 2008). Similar results were also found in a qualitative study of second generation Vietnamese women in Australia, which showed that GP's ethnicity had a significant impact on the use of sexual health services (Rawson & Liamputtong, 2009). Participants reported that seeking help for sexual health issues from a GP from the same Vietnamese background might result in being 'exposed' and 'getting judged'. Vietnamese women in Australia also preferred a female GP, as did South Asian women in the UK (Griffiths, Hart, et al., 2008).

In summary:

- § Across the globe, a lack of sexual help-seeking attitudes and behaviours among women has been reported.

- § One of the commonly cited reasons for not seeking help for sexual health was ‘I did not think it was serious’.
- § There is a paucity of research on sexual help-seeking among South Asian populations.
- § The General Practitioner (GP) was the most preferred channel for sexual help-seeking for South Asians. The GP’s ethnicity significantly affected their choice of sexual health service provider.

The following section discusses the conceptual framework of the current study.

2.4 Conceptual Framework

Given the complex nature of sexuality and lack of explicit theoretical basis in the majority of empirical research (Ramanathan, 2013), a conceptual model to explain the influence of acculturation on sexuality was developed to guide the current study. Following the thorough review of existing literature presented above, the framework was based on social construction theory with particular focus on sexuality (Vance, 1991, 1998; Weeks, 1986, 2002) and Berry’s (1991, 1997) theory of acculturation.

The theory of social construction postulates that an evolving set of meanings/knowledge is continuously constructed through a dynamic interaction between socio-cultural processes and the interpersonal self (Hoffman, 1990; Tiefer, 1990). This theory suggests that knowledge, attitudes and behaviours related to sexuality are influenced by dynamic socio-cultural conditions (Parker, 2009). Further to this, acculturation theory explains the process of change that occurs when individuals of different cultural groups come into continuous contact (Berry, 1991, 1997). This process of change results in cultural learning followed by psychological and behavioural adaptation (Siatkowski, 2007).

The model shown in Figure 2.2 was developed to guide a rigorous analysis of different aspects of sexuality (sexual knowledge, attitude, cancer screening behaviour) in an ethnically, culturally and linguistically diverse group of South Asian migrant women. It takes account of a number of variables that make up their socio-demographic and cultural matrix as well as their psychological adaptation to cultural change following migration to Australia. While social constructionism provides the social and cultural context of sexuality, the theory of acculturation explains a learning process involving adaptation to a new culture. Overall, the model recognises that migrant women’s sexuality is influenced by multiple factors, such as socio-demographic variables and acculturation. The directions of associations between independent and dependent variables are shown in Figure 2.2.

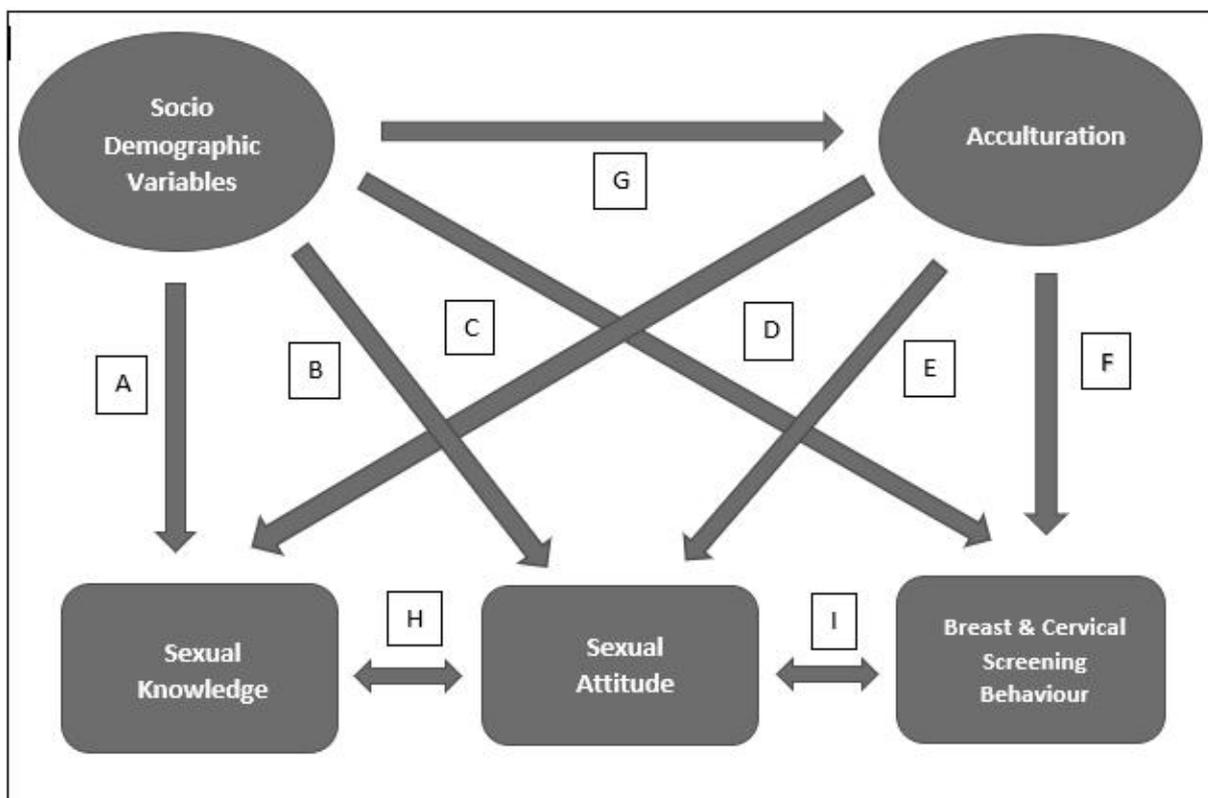


Figure 2.2 Conceptual framework for the study

In this model, acculturation and socio-demographic variables (age, ethnicity, relationship status, immigration status, length of residency in Australia) are the independent variables and the dependent variables are sexual knowledge, sexual attitude and sexual help-seeking behaviour (breast and cervical cancer screening). The influence of socio-demographic variables on sexual knowledge, sexual attitude and breast and cervical cancer screening behaviour is denoted by paths A, B and C, respectively. The influence of acculturation on sexual knowledge, sexual attitude and breast and cervical cancer screening behaviour is denoted by paths D, E and F. For analytical purposes, one of the independent variables was treated as dependent variable. For example, the proposed model assumed that socio-demographic variables (such as ethnicity) will influence acculturation (path G). Additionally, the associations among the dependent variables i.e. sexual knowledge, sexual attitude and breast and cervical cancer screening were also explored (path H and I).

Chapter 3

Methodology

This chapter describes the methodology employed in the study. It begins with a re-statement of the study aims. This is followed by an account of the research design, the sample and sample size calculation, participants and their recruitment, instrumentation, variable measurement, validity and reliability, data management, data re-coding, data analysis, and ethical considerations.

3.1 Re-statement of Study Aims and Research Questions

The study had two broad aims:

- To explore South Asian migrant women's sexual knowledge, sexual attitudes and sexual help-seeking attitudes and behaviour with particular focus on breast and cervical cancer screening behaviour;
- To examine the influence of acculturation on their sexual knowledge, sexual attitudes and cancer screening behaviour.

The association between each of the dependent variables (sexual knowledge, sexual attitudes, breast and cervical cancer screening behaviour), and the independent variables (socio-demographic variables and acculturation) were measured based on the research questions introduced in Chapter 1. The research questions were:

Acculturation

1. What is the acculturation status of South Asian women in Australia?

Sexual knowledge

2. What is the level of sexual knowledge among South Asian women?
3. Do socio-demographic variables (ethnicity, age, relationship status, length of residency in Australia) influence sexual knowledge of South Asian women?
4. Does acculturation influence sexual knowledge of South Asian women?

Sexual attitudes

5. What are South Asian women's attitudes towards sexuality?
6. Do socio-demographic variables influence the sexual attitudes of South Asian women?
7. Does acculturation influence sexual attitudes of South Asian women?

Sexual help-seeking

8. What are the attitudes and behaviour of South Asian women towards help-seeking for sexual health problems?

Breast and cervical cancer screening

9. What is the breast and cervical cancer screening behaviour among South Asian women?
10. Do socio-demographic variables influence breast and cervical cancer screening behaviour in this population?
10. Does acculturation influence breast and cervical cancer screening behaviour in this population?

3.2 Research Design, Sampling and Recruitment

3.2.1 Research design

As the study aimed to investigate relationships between variables (such as acculturation and sexuality), quantitative methodology was most appropriate (Ingham-Broomfield, 2015).

Accordingly, a cross-sectional survey design using a structured questionnaire (in online and pen-paper formats) was adopted.

3.2.2 Participants

Women aged 18-59 years from a South Asian background, living in Australia at the time of the survey and able to speak, read and write English, were eligible to participate in the study.

3.2.3 Sample size and power analysis

Power analysis was used to determine the required sample size for multiple regression analysis using Cohen's formula (Cohen, 1988). Initially, an *a priori* power analysis was conducted using G*Power 3.1 software (Faul, Erdfelder, Lang, & Buchner, 2007). With an alpha (α) = .05, power = 0.80 and medium effect size ($d=.5$); the projected sample size needed for multiple regression analysis was approximately 120. However, due to the sensitive nature of the topic, a high number of non-completers was expected. At the conclusion of the study, a total of 194 (online=175, pen-paper =19) South Asian women had participated and of them, 160 submitted completed data showing a response rate of approximately 82%. A *post-hoc* power analysis was conducted at alpha =.05 with medium effect size ($d=.05$), the sample size 160 (100% complete responses) yielded a power of 0.93 (Faul et al., 2007).

3.2.4 Recruitment

The online survey was launched through a service provider, Zoomerang, facilitated by The University of Sydney. The survey was open for participation from 20/03/2011 to 25/01/2014. Advertisements for the online survey were placed on The University of Sydney website, and community website (see Appendix D). Flyers were distributed in South Asian grocery shops, restaurants, community language schools and Multicultural Resource Centres in Sydney. Invitations to participate in the study were also distributed at community and religious festivals in Sydney, such as Parramasala (a cultural festival for the Indian community held in Parramatta), Boishakhi Mela (Bengali New Year celebration for the Bangladeshi community

held at Olympic Park) and the Eid Festival (a religious festival celebrated locally by Pakistani and Bangladeshi Muslims in Wiley Park). The importance of the study had been acknowledged by leaders from various South Asian community-based organisations, including the Federation of Australian Indian Associations Inc. (FAIA) and the Bangladesh Association of NSW Inc., both of whom provided written support and endorsement (see Appendix D).

Participant recruitment, however, proved to be a significant challenge, possibly due to the sensitive nature of the topic. Accordingly, the study employed a pen-paper survey as well. Participants for the pen-paper survey were recruited using the snowball technique through social and community groups in Sydney by ethnically matched community volunteers. These volunteers used their social networks to disseminate information about the study among potential participants and distributed the questionnaire packages to those who expressed interest. Participants were also recruited through peer referral.

3.3 Instrument

The research instrument was developed from an extensive review of the literature on study variables relevant to the research questions. The questionnaire comprised six sections designed to collect the following data: 1) socio-demographic characteristics (5 items); 2) sexual knowledge (31 items); 3) sexual attitudes (23 items); 4) sexual help-seeking attitudes and behaviour (9 items); 5) cancer screening behaviour (6 items); and 6) acculturation status (28 items) (see Appendix B). All questions were closed-ended except for one question on sexual help-seeking behaviour, 'If you have sought help or advice for sexual health issues who did you seek help from?'

3.4 Measures

3.4.1 Socio-demographic Characteristics

Socio-demographic characteristics of the study participants included age, ethnicity, relationship status, immigration status and year of arrival in Australia.

3.4.2 Sexual Knowledge

Based on a review of literature and published instruments, a pool of 31 questions was generated to assess knowledge of sexual health (Agius, Dyson, Pitts, Mitchell, & Smith, 2006; Agius, Pitts, Smith, & Mitchell, 2010; Andersen & Cyranowski, 1995; Gagnon, Merry, Bocking, Rosenberg, & Oxman-Martinez, 2010). The items in this section covered three broad topics: knowledge on sexual response cycle, reproductive health; and sexually transmitted infections and diseases (STI/STDs).

There were 18 questions on sexual response cycle (excitement, plateau, orgasm and resolution) (Andersen & Cyranowski, 1995) with 7 components: sexual desire (4 questions), arousal and sexual anatomy (2 questions), orgasm (6 questions), oral sex (2 questions), masturbation (2 questions) and sexual dysfunction (2 questions). To assess knowledge of reproductive health, 6 items were selected related to pregnancy (e.g. 'Women cannot become pregnant during menstrual period') and birth control (e.g. 'A man can get rid of all his sperm by ejaculating three times in a row and thus can't get anyone pregnant'). There were 7 questions on sexually transmitted infections and diseases (STI/STDs) (e.g. 'Condoms can prevent acquiring or passing along sexually transmitted diseases').

Each item had three possible responses - True, False and Do not know. For each item, a +1 score was given for a correct answer and 0 for an 'incorrect' or 'do not know' response (Agius et al., 2010; Dean, 2014; Fui-Ping, Rozumah, Mariani, Rumaya, & Mansor, 2010; Weinstein, Walsh, & Ward, 2008). The total score ranged from 0-31, where 0 indicated incorrect answers and 31 indicated correct answers for all the items. The intention was to

derive three aggregate composite scores to measure knowledge of sexual response cycle, reproductive health and sexually transmitted infections and diseases (STI/STDs), where higher scores demonstrate greater knowledge. Two sexologists, one urologist and one general practitioner with training in urology validated the correct responses for each item.

In order to check the relevance, clarity, gender sensitivity and cultural appropriateness of the questionnaire items on sexual knowledge, opinions were sought from three professional women from ethnically matched backgrounds. Two were registered psychologists of Indian origin and one was a general practitioner from Bangladesh. Based on their feedback, we simplified certain questions and introduced definitions and additional statements to ensure clarity. For example, we defined terms such as hymen, clitoral orgasm, douching, erectile dysfunction, and genital warts. We used the term venereal diseases (VD) in one of the questions; even though it is an outdated term in Western countries, it is still commonly used to refer to sexually transmitted diseases in South Asia. The questions were also re-arranged into topic areas, with less sensitive questions placed first and more sensitive questions placed last. For example, the questions on pregnancy were placed before the question on masturbation by women.

3.4.4 The Brief Sexual Attitudes Scale (BSAS)

The sexual attitudes of South Asian women were measured using the Brief Sexual Attitudes Scale (Hendrick, Hendrick, & Reich, 2006). The BSAS is a 23-item scale consisting of 4 subscales: permissiveness, birth control, communion and instrumentality. The permissiveness subscale has 10 items and assesses attitudes towards open, casual sex and multiple partners (e.g. 'I do not need to be committed to a person to have sex with him'). The birth control subscale has 3 items that assess attitudes towards birth control responsibility (e.g. 'A woman should share responsibility for birth control'). The communion subscale includes 5 items that assess attitudes towards sex not centred on relationship (e.g. 'Sex is the closest form of

communication between two people’) while the instrumentality subscale contains 5 items that measure attitudes towards the physical pleasure of sex (e.g. ‘Sex is primarily the taking of pleasure from another person’) with little or no commitment between the participants. The reliability scores for the four subscales are: permissiveness (.95), birth Control (.88), communion (.73) and instrumentality (.77) (Hendrick, Hendrick, & Reich, 2006).

Each item of the BSAS is rated on a 5-point scale ranging from strongly agree = 1 to strongly disagree = 5. The summated mean score for each of the subscales was used for analysis, where a lower score reflected greater endorsement of the subscale. For example, with the permissiveness subscale, a mean score of 1 shows a highly permissive sexual attitude and a mean score of 5 indicates a highly conservative attitude. On sexual communion, a mean score of 1 demonstrates an attitude that sex is a unifying phenomenon between partners in love, whereas a mean score of 5 indicates the attitude that sex between two people is simply a physical exchange that does not necessarily involve emotion. Similarly, a mean score of 1 indicates an attitude towards birth control as a shared sexual responsibility between men and women, whereas 5 reflects the attitude that there should be no control. In relation to instrumentality, a mean score of 1 demonstrates the attitude that sex is a self-focused pleasurable activity, while 5 indicates that sex is a mutually pleasurable and satisfying activity.

3.4.4 Sexual Help-seeking Attitudes and Behaviour

This section included 9 items relating to sexual help-seeking attitudes and behaviour in general. Some of these items were from the questionnaire used in a global study of sexual attitudes and behaviours (GSSAB) (Moreira et al., 2005). The key questions underpinning these items were: Do South Asian women seek help for sexual health? If yes, what are their preferences? If they do not seek help for sexual health, what are the reasons for this? In addressing these questions, the main factors taken into consideration were: 1) preferences in

relation to seeking help for sexual health issues; 2) preferences in relation to medical professionals; and 3) barriers to seeking help from general practitioners (GPs).

3.4.5 Breast and Cervical Cancer Screening Behaviour

This section sought information about participation in mammographic screening, Clinical Breast Examination (CBE) and Pap test screening. A total of six variables (two outcome variables for each screening procedure) was used. Screening questions were partly adapted from the Behavioral Risk Factor Surveillance System Questionnaire (BRFSS) (Centre for Diseases Control and Prevention [CDC], 2001). The first outcome variable for each screening was based on the question: 'Have you ever had a screening mammogram/CBE/Pap test?'. The second outcome variable was based on the question 'How long has it been since you had your last screening mammogram/CBE/Pap test?'. Based on the responses, we assessed participation in Pap test screening as recommended by Australian guidelines (within past 2 years for those aged 18+ years) and clinical breast examination (CBE) as recommended (within past year for those aged 40+ years) and mammogram (within past 2 years for those aged 40+ years).

3.4.6 Stephenson Multigroup Acculturation Scale (SMAS)

To assess the acculturation status of South Asian women in Australia, an adapted version of the Stephenson Multigroup Acculturation Scale (SMAS) (Stephenson, 2000) was used. The original SMAS is a 32-item questionnaire, initially developed for respondents from five different ethnic groups in America. The scale yields two factor solutions: Ethnic Society Immersion (ESI) and Dominant Society Immersion (DSI).

The ESI score reflects the level to which one retains values and practices of an ethnic group, whereas the DSI score reflects the extent to which an individual adopts the practices of the dominant society. The alpha coefficients of the SMAS are 0.86 for the entire scale, 0.97 for ESI, and 0.90 for DSI (Stephenson, 2000). For the current study, the questionnaire was

adapted by deleting questions in relation to English language ability of the respondents (such as ‘I feel comfortable speaking English’ and ‘I understand English, but I’m not fluent in English’) since being able to read, write and speak English was one of the inclusion criteria. In addition, the words ‘American’ and ‘United States’ were replaced by ‘Australian’ and ‘Australia’, respectively. The final 28-item scale (ESI=16 items, DSI =12) used a Likert response format: 1 = false, 2 = partly false, 3 = partly true, and 4 = true. Summated mean scores for the subscales were used for statistical analysis, where a higher score reflected greater immersion.

3.5 Data Management

The data collected through the online survey using the Zoomerang link were extracted and imported into the Statistical Package for the Social Sciences (SPSS) software. The pen-paper survey data were entered into the same SPSS dataset. In compliance with the Sydney University Data Management Policy, a Research Data Management Plan (RDMP) was submitted to gain access to the University's Research Data Store (RDS). The dataset was uploaded in RDS and encrypted to ensure high security and confidentiality. Only the Chief Investigator had approval to add and delete user access to the data on RDS.

3.6 Data Re-coding

A few variables were re-coded for the purpose of statistical analysis. For the socio-demographic variables, data on respondents’ relationship status, immigration status and age were grouped into fewer categories so that meaningful comparisons could be made with other studies and certain statistical analyses could be performed. Relationship status was re-coded as ‘not in a relationship’ (single, separated, divorced) and ‘in a relationship’ (married, de-facto/dating); immigration status was re-coded as ‘permanent resident’ (permanent resident,

citizen) and 'non-permanent resident' (overseas student, temporary resident); age was re-coded as '<30 years' and '≥30 years' for the purpose of binary categorical analyses. Length of residency was calculated using data on participants' arrival year in Australia and then re-coded as '<10 years' and '≥10 years'.

3.7 Data Analysis

Data were analysed using SPSS software version 24. An analysis of missing data identified that missing data varied across the different survey sections and items (Appendix F, Table 3.1). Therefore, the study employed the most commonly used approach i.e. listwise deletion (Kang, 2013) to handle missing data. This method is called 'complete case' method (CC) because it allows only cases with no missing values to be analysed (Kang, 2013).

The criterion for statistical significance was set at $\alpha=.05$. Data for categorical variables were presented using frequency distributions reporting percentages. For metric variables, data were summarised using measures of central tendency, such as mean and median, and measures of variation such as range and standard deviation.

3.7.1 Scales

Reliability analysis. Reliability was determined by computing measures of internal consistency of sub-scales, and the overall scale. Cronbach's alpha was computed as a measure of internal consistency of the scale. The criteria of Cronbach's alpha for establishing internal consistency reliability was: Excellent ($\alpha>0.9$), Good ($0.7<\alpha<0.9$), Acceptable ($0.6<\alpha<0.7$), Poor ($0.5<\alpha<0.6$), Unacceptable ($\alpha<0.5$) (George & Mallery, 2003).

3.7.2 Statistical Analysis: Non-parametric Tests

The independent variables used in the study were acculturation and the socio-demographic variables of age, ethnicity, length of residency, relationship status and immigration status.

The dependent variables were sexual knowledge, sexual attitudes and breast and cervical cancer screening behaviour.

Descriptive statistics (including skewness and kurtosis) were explored for all continuous variables, combined with Kolmogorov-Smirnov and Shapiro Wilcox goodness-of-fit tests to assess the normality of the distribution (Field, 2009) (Appendix F, Table 3.2). Results indicated that all scores were not normally distributed. Therefore, the study used non-parametric tests.

Chi-squared test of independence was used to test the relationship between two categorical variables (e.g. between ethnicity and ever had a cancer screening). Spearman's correlation was used to investigate the relationship between independent variables that are continuous in nature (such as age, length of residency, acculturation dimensions) and continuous dependent variables (such as scores on sexual knowledge and the Brief Sexual Attitudes Scale).

To evaluate differences or relationships between two levels of independent variables (nominal data) the Mann Whitney test was used, while the Kruskal-Wallis test for K-independent samples was used for three or more levels. For example, the Mann Whitney test was conducted to evaluate the differences in sexual knowledge between participants in a relationship and not in a relationship. Kruskal-Wallis tests were conducted to evaluate differences in sexual attitudes among the four different ethnic groups (Indian, Bangladeshi, Pakistani and Sri Lankan).

Binary Logistic regression analysis was used to identify predictors of dichotomous dependent variables (ever/never had a screening) and stepwise multiple logistic regression analyses were conducted to identify predictors of dependent variables (such as sexual knowledge and sexual attitudes).

3.8 Ethical Considerations

The study was approved by the Human Research Ethics Committee (HREC) of The University of Sydney, Australia on 24th February 2011 (Ethics approval number 13455) (Appendix C). The online survey contained a Participant Information Sheet (Appendix A) explaining the purpose and significance of the study, and the eligibility criteria for participation. Participants were informed that participation was completely voluntary and that submission of a completed survey was considered evidence of consent. No personally identifying information was recorded. The information sheet explained the anonymous nature of the study and the right to withdraw at any time prior to submitting the questionnaire without penalty or prejudice. Additional approval was sought from the HREC to employ a pen-paper survey which was granted on 21/09/2012 (Appendix C) and the survey was conducted until 25/01/2014. A package containing the Participant Information Sheet, questionnaire and reply-paid envelope was distributed to participants using the paper format of the survey. Researchers took appropriate measures to maintain the confidentiality of the collected data.

Chapter 4

Results

This chapter presents the findings of data analysis from the survey of 194 South Asian women living in Australia. The chapter begins by describing the background characteristics of the participants. This is followed by descriptive statistics of the independent and dependent variables and analyses of the associations between these variables to address the research questions stated in Chapter 1. The chapter is organised as follows:

1. Socio-demographic characteristics of participants
2. Results on acculturation status
3. Results on sexual knowledge
4. Results on sexual attitudes
5. Results on sexual help-seeking attitudes and behaviour
6. Results on breast and cervical cancer screening behaviour.

The findings on breast and cervical cancer screening behaviour are presented in a co-authored manuscript which has been submitted for publication.

4.1 Socio-demographic Characteristics of Participants

Data were collected on participants' age, ethnicity, relationship status, immigration status, and length of residency in Australia. Table 4.1 summarises the results.

Table 4.1

Socio-demographic Characteristics of Participants

Characteristic	Category	N	(%)
Age (N=190)	18-29 years	56	(29.5)
	30-39 years	87	(45.8)
	40-49 years	39	(20.5)
	50-59 years	8	(4.2)
Ethnicity (N=194)	India	61	(31.4)
	Bangladesh	43	(22.2)
	Sri Lanka	54	(27.8)
	Pakistan	36	(18.6)
Relationship Status (N=194)	Single	18	(9.2)
	De-facto/dating	32	(16.5)
	Married	133	(68.6)
	Separated Divorced	2 9	(1.0) (4.6)
Immigration Status (N=194)	Overseas student	6	(3.1)
	Temporary resident	2	(1.0)
	Permanent resident	21	(10.8)
	Citizen	165	(85.1)
Length of residency (N=160)	<10 years	32	(20.0)
	≥10 years	128	(80.0)

Of the four ethnic groups of South Asian women ($n=194$), Indians comprised the highest proportion (31.4%, $n=61$), followed by Sri Lankans (27.8%, $n=54$), Bangladeshi (22.2%, $n=43$) and Pakistanis (18.6%, $n=36$).

The overall mean age was 34.79 years ($SD=8.19$, range 18-59 years). A majority of the participants (45.8%) were in the young age category (30-39 years). Age was re-coded as 'less than 30 years' and 'more than or equal to 30 years'. Results showed that 70.5% ($n=134$) of participants were above the age of 30 years and the rest (29.5%, $n=56$) were below 30 years of age.

More than two-thirds of the participants were in a marital relationship (68.6%, $n=133$). Relationship status was re-coded as 'in a relationship' (dating/de-facto, married) and 'not in a relationship' (single, divorced, separated). Results showed that a majority were in a relationship (85.1%, $n=165$) and 14.8% ($n=29$) were not in a relationship.

The majority of participants were citizens of Australia (85.1%, $n=165$). Residency status was re-coded as 'permanent resident' (permanent resident, citizen) and 'non-permanent resident' (student, temporary resident). Results showed that 95.9% ($n=186$) of the participants were permanent residents and the rest (4.1%, $n=8$) were non-permanent residents of Australia.

The mean length of residency in Australia was 16.38 years ($SD=7.43$, range 1.83-37.83 years). Length of residency was re-coded as 'less than 10 years' and 'more than or equal to 10 years'. Some 80% ($n=128$) had lived in Australia for more than 10 years while the rest (20%, $n=32$) had done so for less than 10 years.

4.2 Acculturation

This section presents results pertaining to acculturation status of the participants. The association between acculturation status and socio-demographic variables such as ethnicity and length of residency were explored and the results are presented in this section.

4.2.1 Research Question 1: What is the Acculturation Status of South Asian Women in Australia?

4.2.1.1 Acculturation status

An adapted version of the Stephenson Multigroup Acculturation Scale (SMAS) was used to assess acculturation status. A detailed discussion of the SMAS was provided in Chapter 3. The scale yielded data for each individual on two separate scales: Dominant Society Immersion (DSI) and Ethnic Society Immersion (ESI). The mean score was 2.99 ($SD=.46$) on DSI and 3.10 ($SD=.38$) on ESI (see Table 4.2). This implies that the participants were highly immersed into both societies, but slightly more immersed into the ethnic society.

Table 4.2

Descriptive statistics of Stephenson Multigroup Acculturation Scale (SMAS) (N=186)

Acculturation domain	<i>M</i>	<i>SD</i>	Range	Cronbach's Alpha (α)
Dominant Society Immersion (DSI)	2.99	.46	2.60	0.72
Ethnic Society Immersion (ESI)	3.10	.38	1.90	0.62

4.2.1.2 Acculturation strategies using Berry's model

Following Coatsworth et al. (2005), the scores of the DSI and ESI subscales were used to examine whether the participants' degree of immersion into dominant and/or ethnic society produced a pattern that approximated the four acculturation strategies proposed by Berry (1991, 1997). A mean value of 2.50 or more on the DSI scale was considered to show a high level of immersion into Australian society. Similarly, on the ESI scale, a mean value of 2.50 or more was considered to show a high level of ethnic society immersion. As the minimum mean score on the ESI scale was 2.06 (maximum 4.00), a cut-off point of 2.50 was used. Table 4.3 presents a cross table of ethnic society-immersed and Australian society-immersed participants.

Table 4.3

Cross Table of Ethnic Society Immersed and Dominant Society Immersed Participants (N=186)

Ethnic society immersed	Australian society immersed		
	No (%)	Yes (%)	Total (%)
No	4 (2.2)	10 (5.4)	14 (7.5)
Yes	20 (10.8)	152 (81.7)	172 (92.5)
Total	24 (12.9)	162 (87.1)	186 (100)

Based on Berry's acculturation strategies (1991, 1997), these results were used to develop an overall profile of the sample. This showed that 5.4% of participants were assimilated into Australian culture (Assimilation), 81.7% were integrated into both Australian and South

Asian culture (Integration) and 10.8% were separated (Separation). Only 2.2% of participants were found to be marginalised (Marginalisation).

4.2.1.3 Acculturation status and ethnicity

Kruskal-Wallis tests were conducted to evaluate differences in acculturation status among the four ethnic groups. ESI was found to be highest among Bangladeshi women, followed by Indian women, while DSI was highest among Indian women, followed by Bangladeshi women. The tests were significant for both domains of acculturation: DSI $\chi^2(3, 186) = 25.5, p < .001$ and ESI $\chi^2(3, 186) = 33.3, p < .001$, indicating that there were significant ethnic differences in acculturation status (see Table 4.4).

Table 4.4
Bivariate Analysis between Acculturation and Ethnicity (N=186)

Acculturation domain	Ethnicity	N	Mean Rank	Chi-square	P
Dominant Society Immersion(DSI)	India	61	115.3	25.5	<.001
	Bangladesh	37	102.3		
	Sri Lanka	53	83.3		
	Pakistan	35	61.3		
	Total	186			
Ethnic Society Immersion (ESI)	India	61	106.9	33.3	<.001
	Bangladesh	37	125.3		
	Pakistan	35	77.4		
	Sri Lanka	53	66.4		
	Total	186			

4.2.1.4 Acculturation status and length of residency

Spearman's rank correlation test was conducted to explore the relationship between acculturation status and participants' length of residency in Australia. Results indicated that participants with a longer period of residency in Australia were less likely to be immersed

into ethnic society (ESI). Spearman's rank correlation showed that length of residency was negatively correlated with ESI ($r_s = -.33$, $p < .001$). No significant relationship was found between length of residency and DSI (see Table 4.5).

Table 4.5
Bivariate Analysis between Acculturation and Length of Residency (N=148)

Acculturation domain	Length of residency (years)	
	r_s	p
Dominant Society Immersion (DSI)	-.00	.98
Ethnic Society Immersion (ESI)	-.33	<.001

4.2.1.5 Summary of inferences on acculturation

- The majority of participants (81.7%) were integrated into both ethnic and Australian society.
- Only 2.2% adopted marginalisation as an acculturation strategy.
- Indians were the most acculturated towards the dominant society. They were also a highly integrated ethnic group.
- The different ethnic groups varied significantly in their immersion into their respective ethnic societies as well as into Australian society.
- Participants with a longer period of residency in Australia were less likely to be immersed in ethnic society.

4.3 Sexual Knowledge

This section presents results pertaining to sexual knowledge. Participants' sexual knowledge scores are presented first, followed by results of analyses of the relationships between sexual knowledge scores and socio-demographic variables (age, length of residency, relationship status and ethnicity) and between sexual knowledge scores and acculturation status. Finally, the results of multivariate analyses to predict sexual knowledge scores are presented.

4.3.1 Research Question 2: What is the Level of Sexual Knowledge among South Asian Women?

This section presents participants' responses to the sexual knowledge questions discussed in detail in Chapter 3. The 31-item sexual knowledge questionnaire contained 18 items on the sexual response cycle, 6 items on reproductive health and 7 items on sexually transmitted infection and diseases (STI/STDs). The responses are presented in Appendix F, Table 4.33.

4.3.1.1 Knowledge of sexual response cycle

There were 18 items to assess participants' knowledge of the sexual response cycle. The Cronbach's alpha coefficient (α) for those 18 knowledge items was 0.53, suggesting an internal consistency below the acceptable limit (George & Mallery, 2003). An examination showed that four (4) items were negatively correlated to the item total. Therefore, those four items were deleted from the final analysis. The deleted items were: 'Men have higher levels of sexual desire than women', 'After a certain age (say past 55), both men and women experience a loss of interest in sexuality', 'The presence of hymen (a thin membrane that surrounds the opening to a women's vagina) is an indicator that a woman is a virgin' and 'Women take longer to reach orgasm than men'. The remaining 14 items yielded a reliability coefficient (α) of 0.71 (indicating good internal consistency) and hence were retained to provide a composite measure of participants' knowledge of the sexual response cycle. The

scores of the 14 items were summed to derive a sexual response cycle knowledge scale measurement.

Table 4.6 presents the results. More than two-thirds of participants gave incorrect responses to the questions on sexual drive in post-menopausal women (67.9%, $n=129$) and use of condoms during oral sex (67.6%, $n=127$). More than half of the participants gave incorrect answers to questions related to arousal (58%, $n=109$), masturbation by women (63.3%, $n=119$), erectile dysfunction (64.2%, $n=120$) and orgasm (two questions; 55.1%, $n=103$ and 64.7%, $n=123$). Participants achieved the highest score (70.1%, $n=131$) on the item 'Oral sex is absolutely safe, can't cause any sexually transmitted diseases'. The aggregated sexual response cycle knowledge scores ranged from 0 to 14 with a mean score of 6.82 ($SD=3.15$) (Table 4.7).

4.3.1.2 Knowledge of reproductive health

There were 6 items to assess participants' knowledge of reproductive health. The Cronbach's alpha coefficient (α) for those 6 knowledge items was 0.48, suggesting an internal consistency below the acceptable limit (George & Mallery, 2003). An examination showed that one item was negatively correlated to the item total and that deleting another item would significantly increase the Cronbach's alpha. The two items deleted for the final analysis were: 'Sexual intercourse during pregnancy is harmful for women' and 'Women will not become pregnant if a man 'pulls out' (withdrawal method) before ejaculation'. The remaining 4 items yielded a reliability coefficient (α) of 0.62 (acceptable internal consistency) and hence were retained to provide a composite measure of participants' knowledge of reproductive health. The scores of the 4 items were summed to derive a reproductive health knowledge scale measurement.

Table 4.6 presents the reproductive health knowledge scores for individual items. Of the four questions, more than half of the participants (61.6%, $n=117$) answered incorrectly on

the item 'Women cannot become pregnant during menstrual period'. The majority (72.9%, $n=137$) correctly identified that passing urine or douching cannot prevent pregnancy while nearly two-thirds (65.8%, $n=123$) correctly identified that ejaculating three times in a row to get rid of sperm does not prevent pregnancy. The aggregated reproductive health knowledge scores ranged from 0 to 4, with a mean score of 2.38 ($SD=1.29$) (Table 4.7).

Table 4.6
Sexual Knowledge Scores on Individual Items (22 items)

Sexual knowledge item	Correct		Incorrect	
	<i>n</i>	(%)	<i>n</i>	(%)
Sexual desire				
1. There is a natural decline in sexual drive in all post-menopausal women.	61	(32.1)	129	(67.9)
2. Heavy consumption of cigarette and/or alcohol may reduce sexual desire.	129	(68.6)	59	(31.4)
Arousal.				
3. Vaginal discharge is always a noticeable sign for sexual arousal.	79	(42)	109	(58)
Orgasm				
4. Sex is a failure if there is no orgasm.	84	(44.9)	103	(55.1)
5. 'Vaginal orgasms' are better than 'clitoral orgasms'.	67	(35.3)	123	(64.7)
6. One can never have an orgasm from oral sex.	119	(63)	70	(37)
7. The larger the penis, the greater the chance of female orgasm.	115	(61.2)	73	(38.8)
8. A circumcised penis decreases a woman's ability to experience orgasm.	114	(60.6)	74	(39.4)
Oral Sex				
9. Oral sex is absolutely safe, can't cause any sexually transmitted diseases.	131	70.1	56	29.9
10. Condoms can't be used while giving or receiving oral sex.	61	32.4	127	67.6
Masturbation				
11. Masturbation (sexual stimulation of a person's genitals, usually to the point of orgasm) is an unhealthy practise.	95	(50.8)	92	(49.2)
12. Most women do not masturbate.	69	(36.7)	119	(63.3)

Sexual function/dysfunction

13. Premature ejaculation (a condition in which a man ejaculates earlier than he or his partner would like him to) is typically a younger man's problem. 106 (56.1) 83 (43.9)
14. Viagra and other similar medications are very effective to treat erectile dysfunction (inability to develop or maintain an erection of the penis sufficient for satisfactory sexual performance) in men. 67 (35.8) 120 (64.2)

Pregnancy/birth control

15. Women can become pregnant the first time they have sexual intercourse. 120 (64.5) 66 (35.5)
16. Women cannot become pregnant during menstrual period. 73 (38.4) 117 (61.6)
17. A man can get rid of all his sperm by ejaculating three times in a row and thus can't get anyone pregnant. 123 (65.8) 64 (34.2)
18. Passing urine or douching (using water or a medicated solution to clean the vagina) immediately after sexual intercourse washes out sperm and prevents pregnancy. 137 (72.9) 51 (27.1)

STI/STDs

19. Condom can prevent from getting or passing along sexually transmitted diseases (STDs). 168 (88.4) 22 (11.6)
20. Treatment of venereal diseases (VD) is best when both partners are treated at the same time. 101 (53.4) 88 (46.6)
21. Chlamydia and gonorrhoea (sexually transmitted bacteria that affect both men and women) are no big deal and will go away on their own. 15 (8.1) 170 (91.9)
22. Unlike genital warts, genital herpes (painful genital sores) is not contagious and therefore no need to avoid sexual intercourse during an active infection. 52 (30.8) 117 (69.2)
-

Table 4.7

Scores of Sexual Response Cycle, Reproductive Health and STI/STDs Knowledge (N=190)

Sexual Knowledge	<i>M</i>	<i>SD</i>	Range	Cronbach's Alpha (α)
Sexual response cycle	6.82	3.15	14.0	0.71
Reproductive Health	2.38	1.29	4.0	0.62
STI/STDs	2.29	1.19	4.0	0.61

4.3.1.3 Knowledge of sexually transmitted infections and diseases (STI/STDs)

There were 7 items to assess participants' knowledge of sexually transmitted infections and diseases (STI/STDs). The Cronbach's alpha coefficient (α) for those 7 knowledge items was 0.52, suggesting an internal consistency below the acceptable limit (George & Mallery, 2003). An examination showed that deleting three items would significantly increase the Cronbach's alpha. The three deleted items were: 'AIDS (Acquired Immune Deficiency Syndrome) is a sexually transmitted disease caused by bacteria', 'One can catch Human Papilloma Virus (HPV) from a toilet seat or from sitting where someone else who has HPV has been sitting' and 'Genital warts (small, soft, lumps in the genital area caused by HPV) if left untreated can cause cervical cancer'. The remaining 4 items yielded a reliability coefficient (α) of 0.61 (acceptable internal consistency) and hence were retained to provide a composite measure of participants' knowledge of reproductive health. The scores of the 4 items were summed to derive a sexually transmitted infections and diseases knowledge scale measurement.

Table 4.6 presents the STI/STDs knowledge scores for individual items. Among the participants, 91.9% ($n=170$) incorrectly answered the question related to chlamydia and gonorrhoea. More than two-thirds of participants (69.2%, $n=117$) incorrectly answered the question on genital herpes. A sizeable proportion of participants (88.4%, $n=168$) believed that

condoms can prevent STDs from being acquired or passed along. The aggregated STI/STDs knowledge scores ranged from 0 to 4 with a mean of 2.29 ($SD=1.19$) (Table 4.7). The following section presents results on relationships between sexual knowledge scores and demographic variables.

4.3.2 Research Question 3: Do Socio-demographic Variables Influence Sexual Knowledge of South Asian Women?

4.3.2.1 Sexual knowledge and age, length of residency

In order to determine if there were any relationships between sexual knowledge scores and participants' age, a series of Spearman rank-order correlation tests was conducted. Spearman's rank correlation tests indicated that age was not significantly correlated to any of the sexual knowledge scores.

In order to determine if there were any relationships between sexual knowledge scores and length of residency, a series of Spearman rank-order correlation tests was conducted. The results indicated that participants with a longer period of residency in Australia tended to be more knowledgeable about reproductive health. Spearman's rank correlation showed a positive correlation between length of residency and reproductive health knowledge ($r_s = .21, p < .01$). No significant correlations were found between length of residency and participants' knowledge of sexual response cycle and STI/STDs. Table 4.8 reports the summary of bivariate analyses of age and length of residency with the sexual knowledge scores.

Table 4.8
Bivariate Analysis of Sexual Knowledge Scores with Age and Length of Residency

	Sexual response cycle		Reproductive health		STI/STDs	
	r_s	p	r_s	p	r_s	p
Age (in years) ($N=183$)	-.10	.15	.01	.83	.09	.55
Length of residency ($N=153$)	.06	.41	.21	.008	.04	.55

4.3.2.2 Sexual knowledge and relationship status

Mann Whitney U tests were used to evaluate difference in scores on knowledge of sexual response cycle, reproductive health and STI/STDs across categories of relationship status. The results are presented in Table 4.9. Participants in a relationship had better sexual knowledge (sexual knowledge cycle, reproductive health and STI/STDs) compared to those who were not in relationship. These relationships, however, were not statistically significant.

Table 4.9
Bivariate Relationship between Sexual Knowledge Scores and Relationship Status (N=189)

Sexual Knowledge	Relationship Status	N	Mean Rank	U	Z	P
Sexual response cycle	In a relationship	162	96.0	2014.0	-0.6	.50
	Not in a relationship	27	88.5			
	Total	189				
Reproductive health	In a relationship	162	95.3	2128.0	-0.2	.81
	Not in a relationship	27	92.8			
	Total	189				
STI/STDs	In a relationship	162	96.5	1943.5	-0.95	.34
	Not in a relationship	27	85.9			
	Total	189				

4.3.2.3 Sexual knowledge and ethnicity

A series of Kruskal-Wallis tests was conducted to evaluate differences among the four ethnic groups (Indian, Bangladeshi, Pakistani and Sri Lankan) in their scores for sexual response cycle, reproductive health and STI/STDs knowledge. The results are presented in Table 4.10. Sri Lankan women had the highest score for both reproductive health ($\chi^2 (3, 189) = 7.9, p < .05$) and STI/STDs knowledge (STI/STDs $\chi^2 (3, 189) = 20.0, p < .001$) compared to other ethnic groups. No significant ethnic differences were found for participants' knowledge on sexual response cycle.

Table 4.10
Bivariate Relationship between Sexual Knowledge Scores and Ethnicity (N=189)

Sexual Knowledge	Ethnicity	N	Mean Rank	Chi-square	P
Sexual response cycle	India	60	97.5	0.9	.81
	Bangladesh	39	96.1		
	Sri Lanka	54	96.6		
	Pakistan	36	87.0		
	Total	189			
Reproductive health	Sri Lanka	54	109.1	7.9	.047
	Pakistan	36	101.4		
	India	60	84.9		
	Bangladesh	39	84.7		
	Total	189			
STI/STDs	Sri Lanka	54	111.97	20.0	<.001
	Bangladesh	39	111.87		
	Pakistan	36	87.22		
	India	60	73.43		
	Total	189			

The following section presents results on relationships between sexual knowledge scores and acculturation.

4.3.3 Research Question 4: Does Acculturation Influence Sexual Knowledge of South Asian Women?

4.3.3.1 Sexual knowledge and acculturation (SMAS)

Spearman's rank correlation tests were conducted to examine the relationships between participants' sexual knowledge scores and acculturation. Greater immersion into dominant society increased the likelihood of having a high level of knowledge about the sexual response cycle. Greater immersion into ethnic society increased the likelihood of having a low level of knowledge about STI/STDs. Spearman's rank correlation showed that sexual response cycle knowledge was positively correlated with DSI ($r_s = .26, p < .001$) and

knowledge on STI/STDs was negatively correlated with ESI ($r_s = -.19, p < .01$). DSI was not significantly related to any other scores of sexual knowledge (see Table 4.11).

Table 4.11
Bivariate Relationship between Sexual Knowledge Scores and SMAS Scores

	Sexual response cycle		Reproductive health		STI/STDs	
	r_s	p	r_s	p	r_s	p
Dominant Society Immersion (DSI) (N=181)	.26	<.001	.07	.34	.03	.64
Ethnic Society Immersion (ESI) (N=184)	.07	.32	.02	.73	-.19	.008

The following section presents the results of the multivariate analysis of participants' sexual knowledge scores.

4.3.4 What are the predictors of sexual knowledge?

A series of stepwise multiple regression analyses was conducted to explore the best combination of independent variables to predict sexual knowledge. For each aggregate score of sexual response cycle, reproductive health and STI/STDs knowledge, a separate stepwise regression procedure was performed with sexual knowledge scores as dependent variables. The independent variables that were significant at $p \leq .15$ in the bivariate analyses were considered as predictors and predictors that were significant at $p < .05$ were retained in the final model.

The assumptions of multiple regression analysis were tested using guidelines by Field (2009). Before conducting the analyses, the correlation coefficients between the independent variables were calculated to assess whether any individual variables were strongly correlated. There was no correlation greater than .50, therefore multicollinearity was not a threat. The assumptions of multicollinearity were also confirmed using variance inflation factor (VIF)

and tolerance. The assumption of independent errors was tested using the Durbin-Watson test statistic while the presence of influential outlying cases was assessed using Cook's and Mahalanobis distances. The histogram of standard residuals and the P-P plot were used to confirm normality of the distribution. The scatter plot of standard residual was used to assess the assumption of homoscedasticity. All three dependent variables met all assumptions.

4.3.4.1 Multiple regression analysis for sexual response cycle knowledge

In order to predict sexual response cycle knowledge, a stepwise multiple regression analysis was conducted where participant's age and dominant society immersion (DSI) were entered as independent variables. Table 4.12 presents the results of multiple regression analysis for sexual response cycle knowledge. Although a significant regression equation was found $F(1,173) = 24.01, p < .001; R^2 = 0.12$, the predictor ($p < .05$) accounted for a low percent of variability in the model. The coefficient of determination was low ($R^2 < .13$), indicating that the model explained 12% of the variability in the dependent variable; the effect size was also small (effect size $f^2 < .15$) (Cohen 1988). Therefore, the model cannot be used as a reliable predictive equation because unidentified factors account for most of the variability, nor can the model be meaningfully interpreted (Ellis & Steyn, 2003).

Table 4.12
Results of Multiple Regression Analysis for Sexual Response Cycle Knowledge (N=175)

Significant predictor	B	β	SE B	t	p
Dominant Society Immersion (DSI)	2.38	.34	0.48	4.90	<.001

4.3.4.2 Multiple regression analysis for reproductive health knowledge

In order to predict reproductive health knowledge, a stepwise multiple regression analysis was conducted where participants' ethnicity and length of residency were entered as independent variables. Table 4.13 presents the results of multiple regression analysis for

reproductive health knowledge. Although a significant regression equation was found $F(1,151) = 5.80, p < .05; R^2 = 0.03$, the predictor ($p < .05$) accounted for a low percent of variability in the model. The coefficient of determination was low ($R^2 < .13$), indicating that the model explained only 3% of the variability in the dependent variable; the effect size was also small (effect size $f^2 < .15$) (Cohen 1988). Therefore, the model cannot be used as a reliable predictive equation because unidentified factors account for most of the variability, nor can the model be meaningfully interpreted (Ellis & Steyn, 2003).

Table 4.13
Results of Multiple Regression Analysis for Reproductive Health Knowledge (N=153)

Significant predictor	<i>B</i>	<i>b</i>	<i>SE B</i>	<i>t</i>	<i>p</i>
Length of residency	0.03	.19	0.01	2.40	.017

4.3.4.3 Multiple regression analysis for STI/STDs knowledge

In order to predict STI/STDs knowledge, a stepwise multiple regression analysis was conducted where participants' ethnicity and ethnic society immersion (ESI) were entered as independent variables. Table 4.14 presents the results of multiple regression analysis for STI/STDs knowledge. A significant regression equation was found $F(3,180) = 10.81, p < .001$ with an $R^2 = 0.15$.

This result suggests that participants' ethnicity (being Indian, Pakistani) and immersion into ethnic society (ethnic acculturation) significantly predicted knowledge of STI/STDs. Together, these variables accounted for 15% of the variability in STI/STDs knowledge, indicating a moderate effect (effect size $f^2 = .18$) (Cohen 1988).

Table 4.14
Results of Multiple Regression Analysis for STI/STDs Knowledge (N=184)

Significant predictors	<i>B</i>	β	<i>SE B</i>	<i>t</i>	<i>p</i>
Indian	-0.85	-.33	0.18	-4.52	<.001
Pakistani	-0.15	-.20	0.05	-2.83	.005
Ethnic Society Immersion(ESI)	-0.56	-.18	0.21	-2.61	.010

Results showed that ethnicity (Indian) was negatively related to STI/STDs knowledge ($\beta=-.33$), indicating that being from an Indian ethnic background increased the likelihood of having low level of knowledge on STI/STDs. Ethnicity (Pakistani) was also negatively related to STI/STDs knowledge ($\beta=-.20$), indicating that being from a Pakistani ethnic background increased the likelihood of having low level of knowledge on STI/STDs. In addition, ESI was negatively related to STI/STDs knowledge ($\beta=-.18$), indicating that with greater immersion into ethnic society, participants were likely to have a lower level of knowledge of STI/STDs.

4.3.5 Summary of Inferences on Sexual Knowledge

- Age was not significantly related to any of the sexual knowledge scores.
- Length of residency was significantly related to reproductive health knowledge.
- Relationship status was not significantly related to any of the sexual knowledge scores.
- Significant ethnic differences were found in reproductive health knowledge and STI/STDs knowledge among the four groups (Indian, Bangladeshi, Sri Lankan and

Pakistani). After controlling for other variables, being from an Indian or Pakistani ethnic background was found to be negatively related to STI/STDs knowledge.

- Dominant Society Immersion (DSI) was positively related to sexual response cycle knowledge.
- Ethnic Society Immersion (ESI) was negatively related to STI/STDs knowledge.

After controlling for other variables, the relationship between ESI and STI/STDs knowledge was also found to be negatively correlated.

4.4 Sexual Attitudes

This section presents results pertaining to sexual attitudes. Participants' sexual attitude scores are presented first, followed by results on the relationships between sexual attitude scores and socio-demographic variables (age, length of residency, relationship status and ethnicity), and results on the relationships between sexual attitude scores and acculturation. The final section presents results of the multivariate analyses to predict sexual attitude scores of the participants.

4.4.1 Research Question 5: What are South Asian Women's Attitudes towards Sexuality?

The Brief Sexual Attitudes Scale (BSAS) was used to assess participants' sexual attitudes (see Chapter 3). This section presents participants' responses to the BSAS. Table 4.15 presents the descriptive statistics for the subscales of the BSAS.

Permissiveness: A mean score of 3.74 suggests that the participants were moderately conservative in their attitudes towards sexual permissiveness. The Cronbach's alpha (α) for the subscale was 0.93 (excellent).

Birth control: The mean score on this scale was the lowest among the scores of the subscales. A mean score of 1.64 implies that the participants strongly endorsed responsible sexual attitudes towards birth control. The Cronbach's alpha (α) for the subscale was 0.88 (good).

Table 4.15
Descriptive Statistics for BSAS Scale Dimensions (N=187)

Sexual attitudes	<i>M</i>	<i>SD</i>	Range	Cronbach's alpha (α)
Permissiveness	3.74	1.07	4.0	0.93
Birth control	1.64	0.86	3.6	0.88
Communion	2.27	0.83	4.0	0.78
Instrumentality	2.90	1.06	4.0	0.88

Communion: A mean score of 2.27 suggests that participants were moderately liberal in their attitudes towards sexual communion (idealistic sex). The Cronbach's alpha (α) for the subscale was 0.78 (good).

Instrumentality: A mean score of 2.90 suggests that the participants moderately endorsed instrumentality, indicating that they tended to hold a positive attitude towards sex as a pleasurable physical activity. The Cronbach's alpha (α) for the subscale was 0.88 (good).

4.4.2.1 Permissiveness

Table 4.16 presents the descriptive analysis of the individual items of the sexual permissiveness subscale of the BSAS. The majority of the participants showed negative attitudes towards sex with many partners (80.5% either moderately disagreed or strongly disagreed) and ongoing sexual relationships with multiple partners (83.5% either moderately disagreed or strongly disagreed). They also showed a fairly conservative attitude towards casual sex (68.7% either moderately disagreed or strongly disagreed) and uncommitted sex

(59.1% either moderately disagreed or strongly disagreed). More than two-thirds of participants (71.6% either moderately or strongly) disagreed with the statement that 'life would have fewer problems if people could have sex more freely'. The mean scores for all the items of this subscale were above 3 (Appendix F, Table 4.34) indicating that participants held attitudes towards each item in a conservative direction.

4.4.2.2 Birth control

Table 4.16 presents the descriptive analysis of the individual items of the birth control subscale of the BSAS. Results showed that participants strongly endorsed attitudes towards birth control. The majority of the participants were in agreement with all 3 items of this scale: 'Birth control is part of responsible sexuality' (87.1% either strongly agreed or moderately agreed); 'A woman should share responsibility for birth control' (83.9% either strongly agreed or moderately agreed); and 'A man should share responsibility for birth control' (81.6% either strongly agreed or moderately agreed). Mean responses were 1.58, 1.67 and 1.68, respectively (Appendix F, Table 4.34), which corresponds to 'strong to moderate endorsement' of the scale.

4.4.2.3 Communion

Table 4.16 presents the descriptive analysis of the individual items of the communion subscale of the BSAS. An analysis of the descriptive statistics of the items of the sexual communion subscale showed that a large proportion of the participants strongly endorsed items such as 'Sex is a very important part of life' (82.6% either strongly agreed or moderately agreed) and 'A sexual encounter between two people deeply in love is the ultimate human interaction' (76.1% either strongly agreed or moderately agreed). The mean scores for both items were below 2 (1.84 and 1.95 respectively; Appendix F, Table 4.34), which corresponds to 'strongly agree'. More than half of the participants moderately

endorsed the items related to idealistic sex, such as emotional sex (mean 2.36) and sex in a relationship (mean 2.32).

4.4.2.4 Instrumentality

Table 4.16 presents the descriptive analysis of the individual items of the communion subscale of the BSAS. Individual item analysis for the instrumentality subscale showed that participants positively endorsed instrumentality. Participants agreed that ‘Sex is primarily physical’ (45.5% either strongly agreed or moderately agreed) and ‘Sex is primarily a body function, like eating’ (43.1% either strongly agreed or moderately agreed), suggesting that they endorsed the physical aspect of sex in a liberal direction. More than half of the participants were positive about the utilitarian attitude towards sex, such that the item ‘Sex is best when you let yourself go and focus on your own pleasure’ had a mean score of 2.68 (Appendix F, Table 4.34), which corresponds to ‘moderately agree’.

Table 4.16
Descriptive Statistics for the Items of the Brief Sexual Attitude Scale (BSAS)

Sexual Attitude Items	Strongly Agree <i>n</i> (%)	Moderately Agree <i>n</i> (%)	Neutral <i>n</i> (%)	Moderately Disagree <i>n</i> (%)	Strongly Disagree <i>n</i> (%)
Permissiveness					
1. I do not need to be committed to a person to have sex with him/her. (n=186)	16 (8.6)	47 (25.3)	13 (7.0)	30 (16.1)	80 (43.0)
2. Casual sex is acceptable. (n=185)	14 (7.6)	33 (17.8)	11 (5.9)	54 (29.2)	73 (39.5)
3. I would like to have sex with many partners. (n=185)	5 (2.7)	10 (5.4)	21 (11.4)	27 (14.6)	122 (65.9)
4. One-night stands are sometimes very enjoyable. (n=182)	12 (6.5)	44 (23.7)	28 (15.1)	30 (16.1)	72 (38.7)
5. It is okay to have ongoing sexual relationships with more than one person at a time. (n=186)	6 (3.3)	9 (4.9)	15 (8.2)	22 (12.1)	130 (71.4)
6. Sex as a simple	16 (8.7)	43 (23.4)	21 (11.4)	40 (21.7)	64 (34.8)

exchange of favours is okay if both people agree to it. (n=184)					
7. The best sex is with no strings attached. (n=187)	13 (7.0)	39 (20.9)	32 (17.1)	28 (15.0)	75 (40.1)
8. Life would have fewer problems if people could have sex more freely. (n=183)	15 (8.2)	14 (7.7)	23 (12.6)	34 (18.6)	97 (53.0)
9. Is it possible to enjoy sex with a person and not like that person very much. (n=184)	8 (4.3)	44 (23.9)	33 (17.9)	31 (16.8)	68 (37.0)
10. It is okay for sex to be just good physical release. (n=185)	17 (9.2)	67 (36.2)	23 (12.4)	33 (17.8)	45 (24.3)
Birth Control					
11. Birth control is part of responsible sexuality. (n=186)	119 (64.0)	43 (23.1)	13 (7.0)	5 (2.7)	6 (3.2)
12. A woman should share responsibility for birth control. (n=186)	108 (58.1)	48 (25.8)	17 (9.1)	9 (4.8)	4 (2.2)
13. A man should share responsibility for birth control. (n=185)	106 (57.3)	45 (24.3)	22 (11.9)	10 (5.4)	2 (1.1)
Communion					
14. Sex is the closest form of communication between two people. (n=185)	49 (26.5)	66 (35.7)	36 (19.5)	29 (15.7)	5 (2.7)
15. A sexual encounter between two people deeply in love is the ultimate human interaction. (n=184)	78 (42.4)	62 (33.7)	26 (14.1)	11 (6.0)	7 (3.8)
16. At its best, sex seems to be the merging of two souls. (n=185)	39 (21.1)	82 (44.3)	36 (19.5)	13 (7.0)	15 (8.1)
17. Sex is a very important part of life. (n=184)	80 (43.5)	72 (39.1)	19 (10.3)	6 (3.3)	7 (3.8)
18. Sex is usually an intensive, almost overwhelming experience. (n=186)	33 (17.7)	40 (21.5)	62 (33.3)	17 (9.1)	34 (18.3)
Instrumentality					
19. Sex is best when you let yourself go and focus	32 (17.4)	68 (37.0)	38 (20.7)	18 (9.8)	28 (15.2)

on your own pleasure. (n=184)					
20. Sex is primarily the taking of pleasure from another person. (n=185)	23 (12.4)	58 (31.4)	37 (20.0)	30 (16.2)	37 (20.0)
21. The main purpose of sex is to enjoy oneself. (n=185)	21 (11.4)	53 (28.6)	30 (16.2)	54 (29.2)	27 (14.6)
22. Sex is primarily physical. (n=187)	22 (11.8)	63 (33.7)	46 (24.6)	32 (17.1)	24 (12.8)
23. Sex is primarily a body function, like eating. (n=183)	20 (10.9)	59 (32.2)	40 (21.9)	34 (18.6)	30 (16.4)

The following section presents results on relationships between sexual attitude scores and socio-demographic variables (age, length of residency, relationship status and ethnicity).

4.4.3 Research Question 6: Do Socio-demographic Variables Influence Sexual Attitudes?

4.4.3.1 Sexual attitudes and age, length of residency

A series of Spearman's rank correlation tests was conducted to examine the relationship between sexual attitude scores and participants' age. Older South Asian women tended to hold more conservative attitudes towards sexual permissiveness and more responsible attitudes towards birth control. Spearman's rank correlation showed that age was positively correlated with sexual permissiveness ($r_s=.29, p<.001$) and negatively correlated with birth control ($r_s=-.25, p<.01$).

A series of Spearman rank-order correlations was conducted to determine if there were any relationships between length of residency and sexual attitude scores. Participants with longer residency in Australia tended to hold more liberal attitudes about sexual permissiveness, birth control and instrumentality. Spearman rank-order correlations showed that there were negative correlations between length of residency and permissiveness ($r_s=-$

.18, $p < .05$), birth control ($r_s = -.16$, $p < .05$) and instrumentality ($r_s = -.21$, $p < .01$). Table 4.17 summarises bivariate analyses of age and length of residency with the BSAS scores.

Table 4.17
Bivariate Analyses of Age and Length of Residency with Brief Sexual Attitude Scale (BSAS) Scores

	Permissiveness		Birth control		Communion		Instrumentality	
	r_s	p	r_s	p	r_s	p	r_s	p
Age (in years) ($N=181$)	.29	<.001	-.25	.001	.04	.51	.12	.10
Length of residency ($n=152$)	-.18	.024	-1.6	.037	-.03	.64	-.21	.007

4.4.3.2 Sexual attitudes and relationship status

Mann Whitney U tests were used to assess whether there was a significant difference in each dimension of BSAS score across categories of relationship status. Participants' who were in a relationship were more likely to hold responsible attitudes towards birth control and endorse sex in a relationship (communion) compared to those who were not, while participants not in a relationship were more likely to hold more liberal attitudes towards permissiveness and instrumentality than those who were in a relationship. These attitudes, however, did not significantly differ based on relationship status. Table 4.18 presents the descriptive statistics and summary results of the Mann Whitney U tests.

Table 4.18
Bivariate Relationship between BSAS Scores and Relationship Status

Sexual Attitude Subscales	Relationship Status	N	Mean Rank	U	Z	P
Permissiveness	In a relationship	159	94.3	2009.0	-0.5	.59
	Not in a relationship	27	88.4			
	Total	186				
Birth Control	In a relationship	159	91.7	2052.5	-0.3	.69

	Not in a relationship	27	103.9			
	Total	186				
Communion	In a relationship	159	91.7	1863.5	-1.0	.27
	Not in a relationship	27	103.9			
	Total	186				
Instrumentality	In a relationship	159	95.6	1805.0	-1.3	.18
	Not in a relationship	27	80.8			
	Total	186				

4.4.3.3 Sexual attitudes and ethnicity

A series of Kruskal-Wallis tests was conducted to evaluate differences among the four ethnic groups (Indian, Bangladeshi, Pakistani and Sri Lankan) in their attitudes towards sexual permissiveness, communion, birth control and instrumentality. Women from a Pakistani background showed a consistent pattern of holding the most conservative attitudes towards permissiveness, communion and instrumentality. The tests were significant across all four dimensions of attitude: permissiveness $\chi^2(3, 186) = 14.2, p < .05$, birth control $\chi^2(3, 186) = 18.6, p < .001$, communion $\chi^2(3, 186) = 23.0, p < .001$, and instrumentality $\chi^2(3, 186) = 19.5, p < .001$ (see Table 4.19).

Table 4.19
Bivariate Relationship between BSAS Scores and Ethnicity

Sexual Attitude Subscales	Ethnicity	N	Mean Rank	Chi-square	P
Permissiveness	Pakistan	35	116.7	14.2	.003
	Bangladesh	38	101.5		
	India	60	91.7		
	Sri Lanka	53	74.3		
	Total	186			
Birth Control	India	60	113.9	18.6	<.001
	Bangladesh	38	95.8		
	Pakistan	35	83.7		
	Sri Lanka	53	75.1		
	Total	186			

Communion	Pakistan	35	118.16	23.0	<.001
	India	60	107.1		
	Sri Lanka	53	79.6		
	Bangladesh	38	68.5		
	Total	186			
Instrumentality	Pakistan	35	116.77	19.5	<.001
	Bangladesh	38	104.17		
	India	60	95.13		
	Sri Lanka	53	68.64		
	Total	186			

The following section presents results on the relationships between sexual attitude scores and acculturation.

4.4.4 Research Question 7: Does Acculturation Influence Sexual Attitudes of South Asian Women?

4.4.4.1 *Sexual attitudes and acculturation*

A series of Spearman's rank correlation tests was conducted to examine the relationships between sexual attitude scores and acculturation. Results indicated that, with greater immersion into the dominant society, participants tended to become more liberal (less conservative) in their attitudes towards permissiveness, communion and instrumentality. Spearman's rank correlation showed that DSI negatively correlated with permissiveness ($r_s = -.28$, $p < .001$), communion ($r_s = -.21$, $p < .01$) and instrumentality ($r_s = -.22$, $p < .01$). No significant relationship was found between DSI and birth control.

Results also indicated that greater immersion into ethnic society was associated with more liberal attitudes towards communion. Spearman's rank correlation test indicated that communion was negatively correlated with ESI ($r_s = -.18$, $p < .05$). ESI was not significantly related to attitudes towards permissiveness, birth control or instrumentality. Table 4.20 presents the results of bivariate analyses of scores of two domains (DSI, ESI) of SMAS and scores of BSAS.

Table 4.20
Bivariate Relationship between SMAS Scores and BSAS Scores

Acculturation Domains	Permissiveness		Birth control		Communion		Instrumentality	
	r_s	p	r_s	p	r_s	p	r_s	p
Dominant Society Immersion (DSI) (N=181)	-.28	<.001	.02	.72	-.21	.003	-.22	.007
Ethnic Society Immersion (ESI) (N=184)	.11	.12	.08	.25	-.18	.013	.07	.31

The following section presents the results of the multivariate analysis of participants' sexual knowledge scores.

4.4.5 What are the predictors of sexual attitudes of South Asian women?

A series of stepwise multiple regression analyses was conducted to explore the best combination of independent variables to predict sexual attitudes. For each dimension of the subscale of BSAS (permissiveness, birth control, communion and instrumentality), a separate stepwise regression procedure was performed with sexual attitude scores as dependent variables. The independent variables that were significant at $p \leq .15$ in the bivariate analyses were considered as predictors and variables that were significant at $p < .05$ were retained in the final model.

The other assumptions of multiple regression analysis were tested using guidelines by Field (2009). Before conducting the analyses, the correlation coefficients between the independent variables were calculated to assess whether any individual variables were strongly correlated. There was no correlation greater than .50, hence multicollinearity was not a threat. The assumptions of multicollinearity were also confirmed using variance inflation factor (VIF) and tolerance. The assumption of independent errors was tested using the

Durbin-Watson test statistic, while the presence of influential outlying cases was assessed using Cook's and Mahalanobish distances. The histogram of standard residuals and the P-P plot were used to confirm normality of the distribution. The scatter plot of standard residual was used to assess the assumption of homoscedasticity. All four dependent variables met all assumptions.

4.4.5.1 Multiple regression analysis for permissiveness

In order to predict attitudes towards sexual permissiveness, a stepwise multiple regression analysis was conducted where participants' age, ethnicity, length of residency, dominant society immersion (DSI) and ethnic society immersion (ESI) were entered as independent variables. Table 4.21 presents the results of multiple regression analysis for sexual permissiveness. A significant regression equation was found $F(4,138) = 28.24, p < .001$ with an $R^2 = 0.45$.

This result suggests that participants' ethnicity (being Sri Lankan), age and acculturation (both DSI and ESI) significantly predicted their attitudes towards sexual permissiveness. Together, these variables accounted for 45% of variability in sexual permissiveness, indicating a large effect (effect size $f^2 = .81$) (Cohen 1988). Sri Lankan ethnicity was the best predictor (13% of variability), followed by participants' age (12%), ESI (11%) and DSI (8%).

Table 4.21
Results of Multiple Regression Analysis for Sexual Permissiveness (N=143)

Significant predictors	B	β	SE B	t	P
Sri Lankan	-0.60	-.29	0.13	-4.34	<.001
Age	0.02	.24	0.00	3.61	<.001
Dominant Society Immersion (DSI)	-1.08	-.49	0.16	-6.60	<.001
Ethnic Society Immersion (ESI)	1.09	.41	0.19	5.36	<.001

Results showed that ethnicity (being Sri Lankan) was negatively correlated with permissiveness ($\beta = -.29$), indicating that being from a Sri Lankan ethnic background increased

the likelihood of holding attitudes that are more permissive (less conservative) towards sexuality. Age was positively correlated with permissiveness ($\beta=.24$), indicating that, with increasing age, participants tended to hold more conservative (less permissive) attitudes towards sexuality. Further, DSI was negatively correlated with permissiveness ($\beta=-.49$), indicating that, with greater acculturation to the dominant society (Australia), participants were likely to endorse attitudes that are more permissive (less conservative) towards sexuality. ESI was positively correlated with permissiveness ($\beta=.41$), indicating that, with greater ethnic acculturation, participants were likely to hold attitudes that are more conservative (less permissive) towards sexuality.

4.4.5.2 Multiple regression analysis for birth control

In order to predict attitudes towards birth control, a stepwise multiple regression analysis was conducted where participants' age, ethnicity and length of residency were entered as independent variables. Table 4.22 presents the results of multiple regression analysis for birth control. Although a significant regression equation was found $F(1, 147) = 6.47, p < .05; R^2 = 0.04$, the predictor ($p < .05$) accounted for a low percent of variability in the model. The coefficient of determination was low ($R^2 < .13$), indicating a small effect (effect size $f^2 < .15$) (Cohen 1988). Therefore, the model cannot be used as a reliable predictive equation because unidentified factors account for most of the variability; nor can the model be a meaningfully interpreted (Ellis & Steyn, 2003).

Table 4.22

Results of Multiple Regression Analysis for Birth Control (N=149)

Significant predictor	<i>B</i>	<i>b</i>	<i>SE B</i>	<i>t</i>	<i>p</i>
Length of residency	-0.02	-.20	0.00	-2.54	0.012

4.4.5.3 Multiple regression analysis for communion

In order to predict attitudes towards communion, a stepwise multiple regression analysis was conducted where participants' ethnicity, dominant society immersion (DSI) and ethnic society immersion (ESI) were entered as independent variables. Table 4.23 presents the results of multiple regression analysis for sexual communion. A significant regression equation was found $F(3,175) = 11.98, p < .001$ with an $R^2 = 0.17$.

This result suggests that participants' ethnicity (being Indian, Pakistani) and acculturation towards dominant society (DSI) significantly predicted their attitudes towards sexual permissiveness. Together, these variables accounted for 17% of variability in sexual communion, indicating a moderate effect (effect size $f^2 = .20$) (Cohen 1988).

Table 4.23
Results of Multiple Regression Analysis for Sexual Communion ($N=179$)

Significant predictors	B	β	$SE B$	t	p
Indian	0.66	.38	0.12	5.01	<.001
Pakistani	0.10	.21	0.12	2.75	.006
Dominant Society Immersion(DSI)	-0.44	-.26	0.03	-3.45	.001

Results showed that ethnicity (being Indian) was positively correlated with communion ($\beta = .38$), indicating that being from an Indian ethnic background increased the likelihood of holding attitudes that are more conservative towards sexual communion. Ethnicity (being Pakistani) was positively correlated with communion ($\beta = .21$), indicating that being from a Pakistani ethnic background increased the likelihood of holding attitudes that are more conservative towards sexual communion. In addition, DSI was negatively correlated with communion ($\beta = -.26$), indicating that, with greater acculturation to the dominant society (Australia), South Asian women are likely to endorse more liberal attitudes towards communion.

4.4.5.4 Multiple regression analysis for instrumentality

In order to predict attitudes towards instrumentality, a stepwise multiple regression analysis was conducted where participants' age, length of residency, ethnicity and dominant society immersion (DSI) were entered as independent variables. Table 4.24 presents the results of multiple regression analysis for sexual instrumentality. A significant regression equation was found $F(4,140) = 15.74, p < .001$ with an $R^2 = 0.31$.

This result suggests that participants' acculturation towards the dominant society (DSI), ethnicity (being Sri Lankan), age and length of residency in Australia significantly predicted their attitudes towards instrumentality. Together, these variables accounted for 31% of variability in sexual instrumentality, indicating a large effect (effect size $f^2 = .45$) (Cohen 1988). DSI is the best predictor (14% of variability), followed by Sri Lankan ethnicity (12%), age (2%) and length of residency (2%).

Table 4.24
Results of Multiple Regression Analysis for Sexual Instrumentality (N=145)

Significant predictors	<i>B</i>	β	<i>SE B</i>	<i>t</i>	<i>p</i>
Dominant Society Immersion (DSI)	-0.86	-.36	0.17	-5.0	<.001
Sri Lankan	-0.71	-.31	0.16	-4.28	<.001
Age	0.02	.18	0.01	2.52	.013
Length of residency	-0.02	-.15	0.01	-2.06	.041

Results showed that DSI was negatively correlated with instrumentality ($\beta = -.36$) indicating that, with greater acculturation to the dominant society, South Asian women were more likely to endorse instrumentality. Ethnicity (being Sri Lankan) was negatively related to permissiveness ($\beta = -.31$), indicating that being from a Sri Lankan ethnic background increased the likelihood of holding attitudes that are more liberal towards instrumentality. Age was positively correlated with permissiveness ($\beta = .18$), indicating that, with increasing age,

participants tended to hold more conservative attitudes towards instrumentality. In addition, length of residency was negatively related to instrumentality ($\beta = -.15$), indicating that, with longer residency in Australia, participants were likely to hold more liberal attitudes towards instrumentality.

4.4.5.5 Summary of inferences on sexual attitudes

- Age was significantly related to sexual permissiveness and birth control. After controlling for other variables, age was found to be a significant predictor of sexual permissiveness and instrumentality.
- Length of residency was significantly related to permissiveness, birth control and instrumentality. After controlling for other variables, length of residency was found to be a significant predictor of sexual instrumentality.
- Relationship status was not significantly related to sexual attitudes.
- Significant ethnic differences were found in all four dimensions of sexual attitude among the four groups (Indian, Bangladeshi, Sri Lankan and Pakistani). After controlling for other variables, being from a Sri Lankan ethnic background was found to be a significant predictor of sexual permissiveness and instrumentality.
- None of the acculturation dimensions was significantly related to birth control.
- Dominant Society Immersion (DSI) was significantly related to permissiveness, communion and instrumentality. After controlling for other variables, DSI was found to be a significant predictor of permissiveness and instrumentality.
- Ethnic Society immersion (ESI) was negatively related to communion. However, after controlling for other variables, ESI was found to be a significant predictor of sexual permissiveness.

The following section presents results on participants' sexual health-related help-seeking attitudes and behaviour.

4.5 Sexual Help-seeking Attitudes and Behaviour

This section presents results on participants' help-seeking attitudes and behaviour related to sexual health. Specifically, it presents results on the relationships between participants' age and ethnicity with help-seeking attitudes and behaviour, participants' reasons for not seeking help, preferences for help-seeking (including medical help) and barriers to seeking help from GPs.

4.5.1 Research Question 8: What are the Attitudes and Behaviour of South Asian Women towards Help-seeking for Sexual Health Problems?

4.5.1.1 *Sexual help-seeking attitudes and behaviour*

A total of 194 South Asian women attempted the survey. When asked whether they had ever sought help or advice for sexual health-related issues, the response rate was 95% ($n=186$). Among these, only 41.4% ($n=77$) reported having ever sought help for sexual health issues; more than half (58.6%, $n=109$) did not seek any help or advice. The vast majority (75.8%, $n=182$), however, indicated that they would seek help in future if they ever had problems with sexual health (Table 4.25).

Table 4.25
Sexual Help-seeking Attitude and Behaviour of South Asian Women

Responses	Ever sought help <i>N (%)</i>	Willing to seek help <i>N (%)</i>
Yes	77 (41.4)	138 (75.8)
No	109 (58.6)	44 (24.2)
Total	186 (100)	182 (100)

4.5.1.2 Sexual help-seeking and ethnicity

Table 4.26 presents the cross tabulation for ethnicity and sexual help-seeking attitudes and behaviour. Sri Lankan women were the most likely group to have sought help (39%, $n= 30$) and also the most willing group to seek help in future (30.7%, $n= 42$). Bangladeshi women were the least likely group to have sought help (13%, $n=10$) for sexual health. Chi-square tests showed that these ethnic differences were also statistically significant: ever sought help $\chi^2 (3, 185) = 25.8, p < .001$ and willing to seek help $\chi^2 (3, 181) = 27.7, p < .001$ (Table 4.5.2).

Table 4.26
Cross Table of Ethnicity and Sexual-help Seeking Attitude and Behaviour

Sexual help-seeking	Ethnicity	Yes <i>N</i> (%)	No <i>N</i> (%)	Chi-square	<i>P</i>
Ever sought help	India	14 (18.2)	46 (42.6)	25.8	<.001
	Bangladesh	10 (13.0)	28 (25.9)		
	Sri Lanka	30 (39.0)	22 (20.4)		
	Pakistan	23 (29.9)	12 (11.1)		
	Total	77 (100)	108 (100)		
Willing to seek help	India	30 (21.9)	26 (59.1)	27.7	<.001
	Bangladesh	38 (27.7)	00 (0.0)		
	Sri Lanka	42 (30.7)	11 (25.0)		
	Pakistan	27 (19.7)	7 (15.9)		
	Total	137 (100)	44 (100)		

4.5.1.3 Sexual help-seeking and age

Table 4.27 presents the cross tabulation for participants' age (category) and sexual help-seeking attitudes. Participants in the age group 30-39 years were the most likely to have sought help (44.7%, $n= 34$) and also the most willing to seek help in future (50.4%, $n= 68$). Chi-square tests showed that these differences were also statistically significant: ever sought

help $\chi^2 (3, 180) = 8.0, p < .05$ and willing to seek help $\chi^2 (3, 176) = 12.1, p < .01$, indicating that South Asian women differ significantly in help-seeking attitudes based on their age.

Table 4.27
Cross Table for Age (Category) and Sexual-help Seeking Attitude and Behaviour

Sexual help seeking	Age	Yes N (%)	No N (%)	Chi-square	P
Ever sought help	18-29 years	15 (19.7)	36 (34.6)	8.0	.046
	30-39 years	34 (44.7)	48 (46.2)		
	40-49 years	22 (28.9)	17 (16.3)		
	50-59 years	5 (6.6)	3 (2.9)		
	Total	76 (100)	104(100)		
Willing to seek help	18-29 years	29 (21.5)	20 (48.8)	12.1	.007
	30-39 years	68 (50.4)	12 (29.3)		
	40-49 years	31 (23.0)	8 (19.5)		
	50-59 years	7 (5.2)	1(2.4)		
	Total	135(100)	41 (100)		

4.5.1.4 Reasons for not seeking help in relation to sexual health

The most commonly cited reasons for not seeking help in the past were: “I have never had a problem” (65.3% or 57.1% of all responses) and “I did not think it was serious enough to seek help” (15.3% or 13.3% of all responses) (Table 4.28).

Table 4.28
Reasons for Not Seeking Help in the Past (N=98, ticked a total of 112 boxes)

Reasons for not seeking help	N	(%)	(%) of cases
I have never had a problem	64	(57.1)	(65.3)
I did not think it was serious enough to seek help	15	(13.3)	(15.3)
I did not think it was a medical problem	11	(9.8)	(11.2)
I felt uncomfortable discussing it	11	(9.8)	(11.2)
I was worried that Doctor might find something seriously wrong about me	11	(9.8)	(11.2)
Total	112	(100)	(114.3)

Note: Multiple responses were permitted.

4.5.1.5 Preferred option for sexual help-seeking

For those who reported willingness to seek help in future ($n=138$), 117 (84.7%) responded to the question ‘Who will you seek help from?’. Of these, 91.5% (62.9% of all responses) reported that they would consider a medical doctor if they ever had problems with sexual health (Table 4.29). Of those who preferred a medical doctor, 88.4% (70.4% of the total responses) preferred a general practitioner (GP) while 37.2% (29.6% of the total responses) preferred specialists (sexual health clinic, sexologist, etc.).

Table 4.29
Preferred Option for Sexual Help-seeking (N=117, ticked a total of 170 boxes)

Preferred option for sexual help seeking	N	(%)	(%) of cases
Medical Practitioner	107	(62.9)	(91.5)
Family (Partner, other family members)	47	(27.6)	(40.2)
Social support (Neighbour, friends, religious advisor etc.)	16	(9.4)	(13.7)
Total	170	(100)	(145.3)

Note: Multiple responses were permitted

4.5.1.6 Seeking help from general practitioner (GP)

When asked whether they would be comfortable seeing their regular general practitioner (GP) for sexual health-related problems, 76.8 % ($n=149$) of the total sample responded to this question. The vast majority (79.2 %, $n=118$) reported that they would prefer to seek help from their regular GP. Among the reasons for not preferring their regular GP, GP’s gender (39.5% of participants) and ethnicity (39.5% of participants) were reported as the strongest barriers (Table 4.30).

Table 4.30
Reasons for not Seeking Help from Regular GP (N=31, ticked a total of 41 boxes)

Barriers to help-seeking from regular GP	N	(%)	(%) of cases
GP is a male	15	(36.6)	(39.5)
GP comes from a different ethnic background	15	(36.6)	(39.5)
GP is a close friend or family friend	9	(22.0)	(23.7)
GP is too young/too old to talk about sexual health issues	2	(4.9)	(5.3)
Total	41	(100)	(107.9)

Note: Multiple responses were permitted

4.5.1.7 Options Other than Seeking Medical Help

When asked to choose an option other than seeking medical help for sexual health problems, the most frequent responses were to seek information anonymously (52.8%, $n=82$) and to use non-prescribed over-the-counter medicine (35.4%, $n=82$) (Table 4.31).

Table 4.31
Options Other than Seeking Medical Help (N=82)

Options other than medical help	N	(%)
Search information anonymously (internet, magazines)	43	(52.8)
Buy/use prescribed medicines available over the counter	29	(35.4)
Wait to see whether it will go away on its own	7	(8.5)
Keep it to yourself and do nothing	3	(3.7)

4.5.1.8 Summary of inferences on sexual help-seeking attitudes and behaviour

§ More than one-third of participants had sought help previously for sexual health issues, while more than two-thirds were willing to seek help in future.

§ Significant ethnic and age differences were found in sexual help-seeking attitudes and behaviour. Sri Lankans were the most likely group to have sought help and most willing group to seek help in future. Participants in the age group 30-39 years were the most likely group to have sought help and also the most willing group to seek help in future.

§ The vast majority of participants who preferred to seek medical help, would choose their GP. The GP being from a different ethnic background was perceived as the most important barrier to this form of help-seeking.

§ More than half of the participants would seek information anonymously (internet, magazines) rather than seeking medical help.

4.6 Breast and Cervical Cancer Screening Behaviour

The following section presents the results on breast and cervical cancer screening behaviour of South Asian women in the form of a co-authored manuscript submitted (under review) for publication.

Title: Breast and Cervical Cancer Screening Behaviour among South Asian Women living in Australia: The Role of Acculturation

Journal: International Journal of Sexual Health

Publication Status: Under review

The findings reported in the manuscript addressed the following research questions:

Research Question 9: What is the breast and cervical cancer screening behaviour among South Asian women?

Research Question 10: Do socio-demographic variables influence breast and cervical cancer screening behaviour among South Asian women?

Research Question 11: Does acculturation influence breast and cervical cancer screening behaviour among South Asian women?

The additional results pertaining to breast and cervical cancer screening behaviour which were not included in the manuscript are presented in Appendix F, Table 4.35 and Table 4.36

Breast and Cervical Cancer Screening Behaviour among South Asian Women living in Australia: The Role of Acculturation

Abstract

Objectives: The purpose of the study was to report breast and cervical cancer screening participation by South Asian women in Australia and to investigate the influence of acculturation on their screening behaviour.

Methods: Participants were 194 females aged 18-59 years from India, Bangladesh, Sri Lanka and Pakistan.

Results: Half of the respondents reported ever having had a mammogram and more than half reported ever having had a CBE or a Pap test. Age, ethnicity and acculturation were significant predictors of cancer screening.

Conclusion: The findings highlighted the need for socio-culturally tailored health promotion programs among South Asia women.

Key words: Breast cancer, cervical cancer, screening, acculturation, South Asian women, Australia

Introduction

According to recent data from the Australian Institute of Health and Welfare (Australian Institute of Health and Welfare [AIHW], 2017), breast and cervical cancer are, respectively, the 1st and 14th most commonly diagnosed cancers in women in Australia. In 2017 alone, an estimated 17,586 women will be diagnosed with breast cancer and 912 with cervical cancer,

accounting for 28.4% and 1.5% of all new cancer cases in women (Cancer Australia 2017a, 2017b). The five-year relative survival rates for both cancers have increased, from 72% in 1982-1987 to 90% in 2009-2013 for the former and from 69% in 1984-1988 to 72% in 2009-2013 for the latter (AIHW, 2017). One reason for this improvement is the success of population-based screening programs such as BreastScreen Australia and the National Cervical Screening Program, which have played a pivotal role in reducing mortality from breast and cervical cancer in Australia through early detection and treatment. Evidence suggests that early detection through screening is the best strategy for favourable prognosis and increased survival rates for both breast and cervical cancer (United States Preventive Services Task Force, 2016, 2012). The Pap smear test helps detect pre-cancerous cells of the cervix, while mammography and clinical breast examination (CBE) are used for early detection of breast cancer (AIHW, 2017).

The National Cancer Prevention Policy in Australia recommends that women over 50 years have a mammogram every two year, women over 40 years have a CBE every year and women aged 18-69 years who have ever been sexually active have a Pap test every two years (Cancer Council Australia, 2017a, 2017b). BreastScreen Australia also makes mammographic screening available to women aged 40-49 years who decide to attend the service (Cancer Council Australia, 2017b).

Despite the existence of organised breast and cervical cancer screening programs in Australia, there are disparities in participation, with low rates of both breast and cervical cancer screening uptake in migrant women. The current national database, which reports migrant women together as women from a non-English speaking background (NESB), shows that NESB women are significantly less likely than women who speak English at home to

participate in mammography (45% and 59%, respectively), CBE (55% and 73%, respectively) and Pap testing (61% and 86%, respectively) (Australian Bureau of Statistics [ABS], 2000). The National Health Survey 1995, which is the only source of screening data by ethnicity, showed that Australian-born women had the highest participation rate in Pap testing (93.6%), compared to 84.6% and 65.2%, respectively, for women from Southeast Asia and South Asia living in Australia (Taylor, Mamoon, Morrell, & Wain, 2001).

South Asians represent a considerable proportion of the migrant population in Australia. They originate from India, Bangladesh, Pakistan and Sri Lanka, a region commonly referred to as the Indian sub-continent. The top five fastest growing migrant groups in Australia include those from India (10.7%), Bangladesh (8.9%) and Pakistan (13.2%) (ABS, 2017). Although South Asians share historical and cultural backgrounds that differentiate them from other East Asian populations (Chandras, 1997; Das & Kemp, 1997), they are ethnically, religiously, culturally and linguistically diverse. Nevertheless, preventive health behaviour such as breast or cervical cancer screening is not very common among women living in South Asia (Crawford, Ahmad, Beaton, & Bierman, 2016; Kwok, Tranberg, & Lee, 2015). This can be partly attributed to the fact that most of these countries do not routinely offer mammography or Pap testing to asymptomatic women (Menon, Szalacha, & Prabhugate, 2012). Additionally, women in South Asia report low levels of self-perceived risk of breast and cervical cancer (Crawford et al., 2016; Sokal, 2010), and the prevailing cultural belief is that preventive screening in the absence of symptoms is unnecessary (Crawford et al., 2016). Given the increase in numbers of South Asian migrants in Australia, nearly half of whom (43.75%) are women (ABS, 2011), and the lack of preventive screening behaviour in their countries of origin, better understanding of their screening participation in Australia is a matter of public health importance (Kwok et al., 2015).

Overall, South Asian countries have higher incidence rates of cervical cancer (Hussain & Sullivan, 2013) and lower incidence rates of breast cancer (Amirali, Edgar, Azim, & Sadruddin, 2014; Menhas & Umer, 2015; Uddin, Khan, Islam, & Mahmud, 2013) than Australia (AIHW, 2017). Yet, breast cancer remains one of the leading causes of morbidity from cancer among women living in India (Kwok et al., 2015), Bangladesh (Hossain, Ferdous, & Karim-Kos, 2014), and Pakistan (Sarwar & Saqib, 2017). Moreover, breast and cervical cancer incidence and mortality rates for the majority of migrant groups that originated from low-risk countries converge towards those of the Australian-born population with increasing length of residency in Australia (Grulich, McCredie, & Coates, 1995; Kliewer & Smith, 1995a, 1995b).

This is also the case for South Asian women (SAW) living in the United Kingdom, Canada and the United States, where incidence rates of these cancers were shown to increase after migration and become similar to those in the non-Asian native population (Crawford et al., 2016). Yet, SAW living in the United Kingdom (McCaffery et al., 2003; Sutton, Storer, & Rowe, 2001; Szczepura, Price, & Gumber, 2008), Canada (Ahmad, Cameron, & Stewart, 2005; Ahmad & Stewart, 2004) and the United States (Chaudhry, Fink, Gelberg, & Brook, 2003; Islam, Kwon, Senie, & Kathuria, 2006; Menon et al., 2012) had lower rates of breast and cervical cancer screening than their respective native-born counterparts. In Australia, despite the fact that SAW belong to one of the fastest growing migrant communities with a high risk of developing breast and cervical cancer, only limited information is available about both the post-migration incidence of breast and cervical cancer and the uptake of relevant screening. The few existing Australian studies showed that the odds ratio of ever having a Pap test was significantly lower among SAW than Australian-born women (Aminisani,

Armstrong, & Canfell, 2012a, Aminisani, Armstrong, Aminisani, Armstrong, & Canfell, 2012b; Taylor, Mamoon, Morrell, & Wain, 2001). Some empirical studies of breast cancer screening were conducted on Asian migrant women (Hossain, Robinson, & Clarke, 2016; Kwok, Fethney, & White, 2012; Kwok, White, & Roydhouse, 2011). A recent study by Kwok et al. (2015) was the first to investigate breast cancer screening behaviour of Indian women (n=154) living in Australia. Indian women's rates of ever having had a mammogram and CBE were 33.5% and 61.9%, respectively, while rates of having had a mammogram (among those aged 50-69 years) and CBE (aged ≥ 40 years) as recommended were 58% and 35.7%, respectively. Although these results were described as 'promising' (Kwok et al., 2015), the rates are lower than those of Chinese women living in Australia (mammogram 58.1%, CBE 83.8%) (Kwok et al., 2012).

A number of international studies have investigated facilitators of and barriers to breast and cervical cancer screening among SAW. Various socio-demographic factors, cultural beliefs and access to care have been reported as important covariates for such screening practices. Older SAW in a relationship (married) were more likely to have had a breast cancer screening (Ahmad & Stewart, 2004; Lee, Ju, Vang, & Lundquist, 2010; Somanchi, Juon, & Rimal, 2010) or cervical cancer screening (Chaudhry et al., 2003; Islam et al., 2006; Lee et al., 2010). The favourable effect of relationship status on mammographic screening has been explained as the result of support from social networks and encouragement from spouses (Somanchi et al., 2010), while the same favourable effect on Pap testing has been attributed to the fact that such testing is a routine part of obstetric care among married women in this population (Chaudhry et al., 2003).

Lack of knowledge of screening, fear, and cultural beliefs around karma and the inevitability of suffering have been reported as common factors inhibiting breast and cervical cancer screening uptake among SAW (Crawford et al., 2016). Previous research also identified a wide range of access barriers, such as lack of health insurance, language difficulties, not having a usual source of care, absence of physician's recommendation, and lack of local services or transport options (Ahmad, Mahmood, Pietkiewicz, McDonald, & Ginsburg, 2012; Crawford et al., 2016; Islam et al., 2006; Misra, Menon, Vadaparampil, & BeLue, 2011; Pourat, Kagawa-Singer, Breen, & Sripipatana, 2010; Somanchi et al., 2010). Among these factors, health insurance coverage was found to be an important covariate influencing both breast and cervical cancer screening in several studies in this population (Islam et al., 2006; Misra et al., 2011; Pourat et al., 2010; Somanchi et al., 2010). In Australia, however, the relevance of health insurance is dependent on residency status (permanent or non-permanent resident): for all citizens and permanent residents, the cost of breast and cervical cancer screening in the eligible population (18-59 years and 40+ years, respectively) every two years is free (Cancer Council Australia, 2017a, 2017b). Importantly, ethnic differences among SAW in screening practices were also evident in the literature (Glenn, Chawla, Surani, & Bastani, 2009).

Acculturation and cancer screening

A number of studies reported post-migration cultural adjustment or 'acculturation' as a vital factor in breast and cervical cancer screening behaviour in this population (Chaudhry et al., 2003; Islam et al., 2006; McDonald & Kennedy, 2007; Menon et al., 2012; Somanchi et al., 2010). Acculturation is defined as a multidimensional process of change that occurs when individuals of different cultural groups come into continuous contact (Berry & Kim, 1988). Acculturation has been used as an explanatory variable in many disciplines to examine health

disparities among ethnic minorities (Hunt, Schneider, & Comer, 2004), even though it is not clearly conceptualised and consistently measured across studies (O'Malley, Kerner, Johnson, & Mandelblatt, 1999; Pourat et al., 2010). Indicators such as language proficiency and length of residency in the host countries are most commonly used to measure acculturation in studies of screening practices among SAW. These measures, however, have been criticised for failing to fully capture the nuances of acculturation in migrant populations (Abraído-Lanza, Armbrister, Flórez, & Aguirre, 2006; Hunt et al., 2004). Only a few studies have used a comprehensive scale to measure acculturation in this population.

Acculturation and breast cancer screening

Several studies of breast cancer screening behaviour among SAW found that higher acculturation was associated with high participation (Boxwala, Bridgemohan, Griffith, & Soliman, 2010; Kwok et al., 2015; Somanchi et al., 2010). These studies used length of residency as a proxy measure for acculturation. One study of South Asian Muslim women (n=115) in Chicago, United States, however, found a significant association between participation in mammography and length of residency, but no association using a broad measure of acculturation - the Suinn-Lew Asian Self Identity Acculturation Scale (SL-ASIA) (Hasnain, Menon, Ferrans, & Szalacha, 2014). Mixed results on the influence of acculturation on breast cancer screening were also reported from studies in other ethnic migrant groups in the United States. O'Malley et al. (1999), using a proxy measure (linguistic acculturation), found that greater mainstream acculturation was associated with higher rates of CBE and mammography in Hispanic women (n=903). In contrast, Suarez (1994) found an independent positive effect of Mexican family attitudes and values (ethnic acculturation) on mammography screening in Mexican American women (n=450) using a broad measure of acculturation. A study of 141 older Vietnamese women in the United States found that

women with greater ethnic acculturation tended to participate more in mammography (Yi, 1992).

Acculturation and cervical cancer screening

Similarly, studies on cervical cancer screening among SAW consistently demonstrated that acculturation, using length of residency as a proxy measure, increased their likelihood of having a Pap test (Chaudhry et al., 2003; Lee et al., 2010). Studies using the same comprehensive measure of acculturation, however, have reported different results. For example, using the multidimensional scale (SL-ASIA), Menon et al (2012) showed that neither length of residency nor all dimensions of acculturation predicted the likelihood of ever having had a Pap test among South Asian migrants (n=127) in the United states. Using the SL-ASIA, however, Tang et al. (1999) found that acculturation did predict Pap test behaviour in Asian students (n=206) in the United States. In sum, there is a lack of consistency in the acculturation measures employed across studies on breast and cervical cancer screening behaviour among South Asian and other migrant communities. This, may be one of the reasons for the inconsistent results reported (Brown et al., 2006; O'Malley et al., 1999). Even when the same measures are employed, however, findings have not been consistent. Therefore, further research is warranted.

The current study is part of a large exploratory research project on sexuality among SAW living in Australia. It aims to fill an important knowledge gap by investigating breast and cervical cancer screening participation among SAW, with particular focus on the influence of acculturation and socio-demographic variables on their screening behaviour.

Methods

Research Design

This cross-sectional, quantitative study collected data using a questionnaire that was made available in both online and pen-paper form. The online survey was open for participation from 20/03/2011 to 25/01/2014. Due to a low participation rate, the pen-paper survey was initiated and conducted between 21/09/2012 and 25/01/2014.

Sampling and Recruitment

A total of 194 participants from India (n=61), Bangladesh (n=43), Sri Lanka (n=54) and Pakistan (n=36) living in Australia completed the survey online (n=175) or in pen-paper format (n=19). Eligible participants were SAW aged 18-59 years living in Australia who were able to speak, read and write in English. Advertisements for the online survey were placed on the University of Sydney website and community websites. Flyers were distributed in various South Asian grocery shops, restaurants, community language schools, Multicultural Resource Centres and community festivals in Sydney. Participants for the pen-paper survey were recruited using the snowball technique by ethnically matched community volunteers via social and community groups and through peer referral in Sydney.

Ethical Considerations

The study was approved by the Human Research Ethics Committee (HREC) of the University of Sydney, Australia (Ethics approval number 13455). Participation was completely voluntary. Participants who completed the pen-paper questionnaire were provided with an information sheet and reply-paid envelope. Submission of a completed questionnaire was considered as evidence of consent.

Instrument and Measurements

Socio-demographic items

Data were collected on respondents' age, ethnicity, relationship status, immigration status and length of residency in Australia.

Acculturation

The acculturation scale used in the study was adapted from the Stephenson Multigroup Acculturation Scale (SMAS) (Stephenson, 2000). The original scale is a 32-item questionnaire that was developed for respondents from five different ethnic groups in the United States. The scale yields two factor solutions: Ethnic Society Immersion (ESI) and Dominant Society Immersion (DSI). The ESI scale score reflects the level to which one retains values and practices of an ethnic group, whereas the DSI scale score reflects the extent to which an individual adopts the practices of the dominant society. For the current study, the questionnaire was adapted as follows. Questions relating to English language ability of the respondents (such as 'I feel comfortable speaking English' and 'I understand English, but I'm not fluent in English') were omitted since the ability to read, write and speak in English was one of the inclusion criteria. The words 'American' and 'United States' were replaced by 'Australian' and 'Australia', respectively. Finally, a 28-item scale with a Likert response format was used in which 1= false, 2= partly false, 3= partly true, and 4= true. Therefore, the score for each item ranged from 1 to 4. Summated mean scores for the subscales were used for statistical analysis, where higher scores reflected greater immersion.

Breast and cervical cancer screening items

Participation in mammography, CBE and Pap testing were considered as dependent variables. A total of six variables (two outcome variables for each screening procedure) was used. Screening questions were partly adapted from the Behavioral Risk Factor Surveillance System Questionnaire (BRFSS) (Centre for Diseases Control and Prevention [CDC], 2001).

The first outcome variable for each screening was based on the question: '*Have you ever had a screening mammogram/CBE/Pap test?*'. The second outcome variable was based on the question '*How long has it been since you had your last screening mammogram/CBE/Pap test?*'. Based on the responses, we assessed participation in Pap test screening as recommended by Australian guidelines (within past 2 years for those aged 18+ years) and clinical breast examination (CBE) as recommended (within past year for those aged 40+ years) and mammogram (within past 2 years for those aged 40+ years).

Data Analysis

The data analysis began with assessment of the variables that are continuous in nature to assess normality of the distribution. Results indicated that all the scores did not fit a normal distribution. Therefore, the study used non-parametric tests. Chi-square test was used to assess differences in percentage of mammogram, CBE and Pap test screening rates across different demographic variables. Mann-Whitney test was used to assess bivariate relationships between scores on the acculturation scale and outcome variables. Binary logistic regression analysis was used to identify predictors of breast and cervical cancer screening behaviour. Acculturation measures (DSI and ESI) and socio-demographic variables which were found significant in the bivariate analysis were entered into the multivariate analysis as independent variables. Immigration status was not considered in the model due to the relatively small number of non-permanent residents, and age was controlled for in all the models for ever having had the screenings. The study used SPSS version 24 for analyses and the criterion for statistical significance was $\alpha = .05$.

Results

Characteristics of Participants

Among the participants, 85.1% were Australian citizens, the remainder were overseas students (3.1%), permanent (10.8) and temporary residents (1%). Of the study sample, 45.8% were aged 30-39 years and 25% (n=47) were aged 40-59 years, with a mean age of 34.79 years (SD= 8.19, range 18-59). Among the respondents, 85.1% were in a relationship; 68.6% of these were married. The mean length of residency in Australia was 16.39 years (SD= 7.43, range 0.83-37.83 years), with half of respondents (51.9%) reporting length of residency up to 20 years.

Acculturation Status

The Stephenson Multigroup Acculturation Scale (SMAS) yielded data on two separate scales for each individual: Ethnic Society Immersion (ESI) and Dominant Society Immersion (DSI). In the present sample, the mean score on the ESI scale was 3.10 (SD= 0.38, range= 2.06 to 4) and the mean score on the DSI was 2.99 (SD= 0.46, range=1.40 to 4). Taken together, these scores indicate that the majority of participants were immersed in both the ethnic and dominant societies, suggesting that they were acculturated towards both cultures - ethnic (South Asian) and Australian. Reliability analysis indicated that the SMAS scale had an overall Cronbach's alpha of .72; the Cronbach's alpha was .72 for DSI and .62 for ESI.

Screening Participation

Table 1 shows the participation rates in breast and cervical cancer screening. Approximately half of the respondents reported ever having had a mammogram and more than half reported ever having had a CBE or a Pap test. Of the women who have had a screening, within the target age group, nearly two-thirds reported having had a mammogram (≤ 2 years) or Pap test

as recommended biannually, while only one-fourth adhered to the recommendation for an annual CBE.

Table 1: Participation Rates in Breast and Cervical Cancer Screening

Screening	Ever had a		Had screening (Target age group)					
	Screening		age \geq 40 years		age \geq 40 years		age \geq 18 years	
	(All participants)		biannually		annually as recommended		annually as recommended	
	<i>N</i>	(%)	<i>N</i>	(%)	<i>N</i>	(%)	<i>N</i>	(%)
Mammogram	97/185	52.4	25/40	62.0				
CBE*	110/182	60.4			10/37	27.0		
Pap test	109/183	59.6					69/109	63.3

*Clinical Breast Exam

Bivariate analysis

Tables 2 and 3 show participation rates in breast and cervical cancer screening and the results of bivariate analyses between screening participation and demographic variables and acculturation. Age was significantly related to ever having had a mammogram, CBE or Pap test ($p < .001$) (Table 2) indicating that older women were more likely to have had the screenings compared to their younger counterparts. Similarly, of the women who have had the screening, within the target group, age was significantly related to having had a CBE ($p < .05$) or Pap test ($p < .001$) as recommended.

There were significant ethnic differences in having ever had a mammogram ($p < .001$), CBE ($p < .01$) or Pap test ($p < .01$) (Table 2) but no ethnic differences were found in having had any of the screenings within the target age group (Table 3). Participants' relationship status was not significantly associated with any of the outcome variables except for having ever had a Pap test ($p < .05$) (Table 2) indicating that those who were in a relationship were more likely to have had a Pap test than those who were not. Length of residency was not significantly

associated with any of the outcome variables except for having had a Pap test as recommended within the target group ($p=.049$, almost negligible) (Table 3). This indicates that, for the study sample, living in Australia for more than 10 years did not influence their participation in any of the screenings. Acculturation was significantly related to ever having had a mammogram (DSI, $p<.05$), Pap test (ESI, $p<.01$) (Table 2) and having had the Pap test as recommended within the target group (DSI, $p<.05$) (Table 3). In the bivariate analysis, acculturation was not significantly related to ever having had or having had the CBE as recommended within the target age group (Table 2, 3).

Table 2: Bivariate Analysis of Ever Having Received a Pap Test or Mammogram or CBE

	Pap Test				Mammogram				Clinical Breast Examination			
	Ever Received <i>N</i>	Ever Received (%)	χ^2	<i>p</i>	Ever Received <i>N</i>	Ever Received (%)	χ^2	<i>p</i>	Ever Received <i>N</i>	Ever Received (%)	χ^2	<i>p</i>
Received Screening												
Yes	109	59.6			97	52.4			110	60.4		
No	74	40.4			88	47.6			72	39.6		
Age (years)												
<30	13	12.3	35.285	<0.001	7	7.3	47.556	<0.001	17	15.9	22.038	<0.001
≥30	93	87.7			89	92.7			90	84.1		
Relationship Status												
In a relationship	97	89.8	4.546	0.033	86	88.7	1.821	0.177	97	89	1.808	0.179
Not in relationship	11	10.2			11	11.3			12	11		
Permanent Residency												
Yes	106	99.1	4.627	0.031	95	100	6.697	0.010	108	100	9.31	0.002
No	1	0.9			0	0			0	0		
Length of Residency												
<10	12	13.3	1.137	0.286	9	11.4	2.341	0.126	12	13.2	0.835	0.361
>10	78	86.7			70	88.6			79	86.8		
Ethnicity												
India	26	23.9			22	22.7			24	21.8		
Bangladesh	32	29.4	15.530	0.001	14	14.4	23.395	<0.001	27	24.5	13.837	0.003
Sri Lanka	29	26.6			33	34			36	32.7		
Pakistan	22	20.2			28	28.9			23	20.9		
Acculturation												
ESI	z= -3.42, p=0.001				z= -0.48, p=0.628				z= -1.51, p= 0.131			
DSI	z= -0.87, p= 0.380				z= -2.00, p= 0.045				z= -0.02, p= 0.980			

Table 3: Bivariate Analysis of Pap Test, Mammogram or CBE Receipt as Recommended in Target Age Group

	Pap Test (age ≥18)				Mammogram (age ≥40)				Clinical Breast Examination (age ≥40)			
	Received ≤ 2yrs <i>N</i>	%	χ^2	<i>p</i>	Received ≤ 2yrs <i>N</i>	%	χ^2	<i>p</i>	Received ≤ 1yr <i>N</i>	%	χ^2	<i>p</i>
Received Screening												
Yes	69	63.3			25	62.5			10	27		
No	40	36.7			15	37.5			27	73		
Age (years)												
<30	7	10.4	11.222	0.001								
≥30	93	87.7										
<50					20	80.0	1.307	0.253	6	60.0	5.705	0.017
>50					5	20.0			4	40.0		
Relationship Status												
In a relationship	64	92.8	1.678	0.195	24	96.0	2.667	0.102	9	90.0	0.017	0.895
Not in relationship	5	7.2			1	4.0			1	10.0		
Permanent Residency												
Yes	67	100.0	3.414	0.065								
No	0	0.0										
Length of Residency												
<10	7	12.1	3.886	0.049								
>10	51	87.9										
Ethnicity												
India	20	29.0			6	24.0			0	0.0		
Bangladesh	20	29.0	6.178	0.103	3	12.0	0.510	0.917	2	20.0	3.970	0.265
Sri Lanka	15	21.7			8	32.0			5	50.0		
Pakistan	14	20.3			8	32.0			3	30.0		
Acculturation												
ESI	z= -1.80, p=0.071				z= -0.19, p= 0.844				z= -1.28, p= 0.203			
DSI	z= -1.99, p= 0.046				z= -1.95, p= 0.052				z= -0.68, p= 0.506			

Multivariate analysis

Table 4 presents a summary of the results for multivariate analyses to predict the likelihood of ever having had a mammogram, CBE or Pap test and mammogram as recommended. The models for predicting the likelihood of having had a CBE or Pap test as recommended within the target age group were not found to be significant and, hence, are not reported. After adjusting for other variables, participants' age significantly predicted the likelihood of ever having had a mammogram (OR=0.03, CI=0.01-0.10), CBE (OR=0.13, CI=0.05-0.31) or a Pap test (OR=0.07, CI=0.02-0.20). Being Bangladeshi (OR=0.13, CI=0.03-0.53) or Sri Lankan (OR=0.03, CI=0.01-.14) reduced the likelihood of having had a mammogram compared to being Indian. Being Bangladeshi (OR=0.31, CI=0.10-0.90) also reduced the likelihood of having had a CBE compared to being Indian. In relation to acculturation scores, greater immersion in the dominant society (DSI) increased the likelihood of ever having had a CBE (OR=3.80, CI=1.26-11.41) and Pap test (OR=1.18, CI=1.36-12.78). Acculturation (neither DSI nor ESI) was not found to be a significant predictor for ever having had a mammogram. However, after adjusting for other variables, greater immersion into dominant society (DSI) significantly predicted the likelihood of having had a mammogram as recommended (OR=17.61, CI=1.41-219.22). Ethnic Society Immersion (ESI), was not found to be a significant predictor for the likelihood of ever having had any of the screenings.

Table 4: Multivariate Analyses of Breast and Cervical Cancer Screening

Significant Predictors	Ever had a Pap Test ^a N=169		Ever had a Mammogram ^b N=169		Ever had a CBE ^c N=169		Mammogram as recommended (≥40 years) ^d N=38	
	OR	CI	OR	CI	OR	CI	OR	CI
Age	0.07**	0.02-0.20	0.03**	0.01-0.10	0.13**	0.05-0.31		
Bangladesh			0.13*	0.03-0.53	0.31*	0.10-0.90		
Sri Lanka			0.03**	0.01-0.14				
DSI	4.18*	1.36-12.78			3.80*	1.26-11.43	17.61*	1.41-219.22
	Nagel Kerke $R^2 = 0.41$		Nagel Kerke $R^2 = 0.52$		Nagel Kerke $R^2 = 0.28$		Nagel Kerke $R^2 = 0.24$	

* $p < 0.05$, ** $p < .001$

^{abc} Adjusted for age, relationship status, ethnicity, acculturation (DSI, ESI)

^d Adjusted for acculturation (DSI, ESI)

Discussion

More than half (52.4%) of SAW participants in this study reported having had a mammogram, and 62% of them (aged ≥ 40 years) had it biannually. For CBE, 60% of women reported having had a screening and 27% of them (aged ≥ 40 years) have had it annually as recommended. These rates, particularly the rates of having had a CBE and having had it as recommended, are lower than those of Indian (61.9%, 35.7%) (Kwok et al., 2015) and Chinese women (83.8%, 35.4%) (Kwok et al., 2012) living in Australia. For mammogram, SAW's rate of ever having had the screening (52.4%) is higher than that of Indian women (33.5%) (Kwok et al., 2015) but lower than that of Chinese women (58.1%) (Kwok et al., 2012) in Australia. The results of the present study with respect to mammogram (within ≤2

years) within the target group (aged \geq 40 years) are not directly comparable with those from most Australian reports since they use a different age categorisation, e.g. 40-78 years (Kwok et al., 2012), 50-69 years (Kwok et al., 2015). This finding, however, is comparable with those from a study of 10,179 women in Australia, which showed that 35.75% of women (aged 40-59 years) had a mammogram within the past two years. This is lower than the rate reported by SAW (62%) in the present study. Caution is necessary in drawing conclusions from these rates, however, because it is common for research participants to over-report mammographic screening (Hasnain et al., 2014). Additionally, the preponderance of relatively young, English-speaking, internet savvy SAW in the study sample may not be truly representative of SAW living in Australia and may account for the relatively high rates of participation.

SAW's rate of ever having had a Pap test (59.6%) was well below the participation rate among Australian-born women aged 20-69 years (93.4%) (Taylor et al., 2001). This is consistent with previous studies that reported lower participation in cervical cancer screening among migrant women compared with their native-born counterparts in Australia (Aminisani, Armstrong, & Canfell, 2012a; Aminisani et al., 2012b; Taylor et al., 2001), Canada (Gupta, Kumar, & Stewart, 2002; McDonald & Kennedy, 2007) and the United States (Chaudhry et al., 2003; Islam et al., 2006; Menon et al., 2012).

In our bivariate and multivariate analyses, various demographic variables and acculturation were found to be associated with breast and cervical cancer screening. Most notably, consistent with previous studies (Ahmad & Stewart, 2004; Lee et al., 2010; Somanchi et al., 2010), age was significantly associated with ever having had a mammogram, CBE and Pap test at both bivariate and multivariate level. Age was also associated with

having had a CBE and Pap test as recommended within the target age group. This indicates that older women (aged ≥ 30 years) are more likely to have had the screenings and follow the recommended guidelines for CBE and Pap test; this is a positive outcome for breast cancer screening, as the risk of breast cancer increases with age (AIHW, 2017). For cervical cancer screening, however, this has implications for health promotion, as younger women (≤ 30) who are sexually active may be at risk of under-screening. Additionally, unlike previous studies (Ahmad & Stewart, 2004; Chaudhry et al., 2003; Islam et al., 2006; Somanchi et al., 2010), the current study did not find relationship status to be a significant predictor of any of the screening behaviours.

Consistent with previous studies (Glenn et al., 2009), significant ethnic differences were found in the bivariate analyses for ever having had a mammogram, CBE and Pap test. Results of the multivariate analyses, however, showed that Bangladeshi and Sri Lankan women were less likely to have had a breast cancer screening than Indian women. A number of factors could explain this result, including differences in cultural and religious beliefs, education, income, etc., and/or the differences in breast cancer screening knowledge and self-perceived risk of cancer among these ethnic groups. Although the current study cannot identify the influence of these variables on breast cancer screening behaviour among SAW, since this was outside its scope, the findings do suggest the need for further investigation. Such ethnic differences raise important questions about the effectiveness of current health promotion strategies for these groups. Currently, BreastScreen New South Wales (NSW) has a range of brochures available in many different languages, including Hindi (the language spoken by Indians) and Tamil (the language spoken by the majority of Sri Lankans), but nothing in Bengali (which is spoken by Bangladeshis) (BreastScreen NSW, 2017). While this is important, hopefully future research will be able to inform the development of targeted and

culturally tailored health promotion interventions that address the cultural and linguistic diversity among these groups.

Results from our survey showed that length of residency was not significantly associated with having ever had a breast cancer screening, which is in contrast with findings from several studies (Boxwala et al., 2010; Kwok et al., 2015; Somanchi et al., 2010). Nevertheless, in relation to acculturation, we found a differential influence between CBE and mammogram. For CBE, consistent with previous research (O'Malley et al., 1999), greater dominant society acculturation (DSI) predicted the likelihood of ever having had the screening, while higher immersion into ethnic society (ESI) was significantly associated with having ever had a mammogram. The favourable effect of ethnic acculturation (ESI) on mammographic screening was unexpected; yet, consistent with previous studies (Suarez, 1994; Yi, 1992). One possible explanation is that SAW with high ethnic identification have strong traditional values, maintain close contact with the ethnic community from their country of origin, and participate in traditional cultural activities (as reflected in the ESI scale). These women are more likely to receive support to attend screening from family, extended family and community peers (Suarez, 1994), for instance, by accompanying them to screening services, assisting them with transport and sharing child care responsibilities (Ahmad et al., 2012; Crawford et al., 2016). In order to improve mammogram screening for this population, members of these support networks should be included in the development of community-based health promotion strategies to facilitate access to services (Crawford et al., 2016; Ahmad, Jandu, Albagli, Angus, & Ginsburg, 2013). Nevertheless, it is noteworthy that, after controlling for other variables, the effect of ESI on having had a mammogram disappeared. Additionally, after controlling for other variables, the results that dominant

acculturation predicted the likelihood of having had a mammogram as recommended was expected and consistent with the literature (Islam et al., 2006; O'Malley et al., 1999).

For cervical cancer screening, the finding that length of residency was not related to participation in Pap testing was again in contrast with previous studies on SAW (Chaudhry et al., 2003; Lee et al., 2010). The finding that greater acculturation towards the dominant society (DSI) significantly predicted SAW's likelihood of ever having had a Pap test is, however, consistent with previous studies (Pourat et al., 2010; Tang, Solomon, Yeh, & Worden, 1999). In sum, the findings of the present study with respect to length of residency and screening participation not only challenge the existing evidence on SAW's screening behaviour, but also demonstrate the inadequacy of length of residency as a measure of acculturation and underscore the importance of using broad measures to capture all the nuances of acculturation in this population.

Strengths and limitations of the study

The main strength of the present study was its conceptualisation and measurement of acculturation using a broad scale in combination with the commonly used measure, length of residency. Several limitations, however, should be noted. First, the cross-sectional design limited our ability to establish cause-and-effect relationships. Second, external validity was limited because of the small sample size and the possibility that the sample under-represented socially and linguistically disadvantaged SAW. Third, the participation rates reported were collected via self-report and may not be accurate. Fourth, since this was part of a larger study, the sample size was not primarily determined for this study, which resulted in a relatively small sample (n=47) of women over 40 years (the target age group). This may have been responsible for insignificant coefficients in the outcome variables related to screening

participation in the target group. In order to validate the results, further study with a large sample is required. As an exploratory study, however, it is appropriate to report the results to generate hypotheses for future research. A final limitation was the failure to assess demographic variables (religiosity, education, income), knowledge, cultural beliefs and access indicators related to screening. Data on those variables would have been beneficial to better understand the factors that inhibit or facilitate screening participation. This is indeed an area that warrants further study, including collection of qualitative data to generate insight into the nature of these influences.

Conclusion

Our results make a significant contribution to the literature on SAW's participation in breast and cervical cancer screening. To the best of our knowledge, relevant Australian data have not previously been available. The study sheds light on how acculturation facilitates and inhibits screening practices, highlighting the need for health promotion efforts to be culturally informed and sensitive. In particular, the findings identify a need to reach out to younger SAW for cervical cancer screening and to Bangladeshi and Sri Lankan women for breast cancer screening through socio-culturally tailored health promotion programs. We encourage future research to validate our results using a larger and a more representative sample and inform the development of effective, culturally grounded health promotion intervention in this community to improve breast and cervical cancer screening.

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Chapter 5

Discussion and Conclusion

The broad purpose of the study was to explore the sexuality of South Asian migrant women living in Australia. Specifically, the study sought to: explore three critical domains of sexuality (sexual knowledge, sexual attitudes and sexual health-related help-seeking attitudes and behaviour); examine breast and cervical cancer screening behaviour in the study population; and investigate the impact of socio-demographic variables and acculturation on their sexual knowledge, attitudes and cancer screening behaviour.

This chapter summarises the main findings and discusses the results in relation to the existing literature. First, the results concerning the acculturation status of the study population are presented, followed by a discussion of the key dependent variables (sexual knowledge, sexual attitudes, breast and cervical cancer screening behaviour) and their relationship with the independent variables of socio-demographic characteristics and acculturation. The findings related to sexual help-seeking attitudes and behaviour of South Asian women are then considered. The chapter also reports on the strengths and limitations of the study and its implications for future research, and makes recommendations for health interventions.

5.1 Acculturation

The first research question was: What is the acculturation strategy of South Asian women in Australia? The current study adopted the widely used bi-dimensional acculturation framework proposed by John Berry (1991, 1997) and employed a bi-dimensional acculturation measure, the Stephenson Multigroup Acculturation Scale (SMAS) (Stephenson,

2000) in combination with a commonly used unidimensional measure (length of residency). The findings in relation to this question are presented below.

The mean scores on the SMAS subscales (DSI, ESI) showed that South Asian women were immersed into both ethnic and Australian culture but were slightly more immersed into ethnic culture. Taken together, the high scores on the DSI and ESI subscales reflected South Asian women's strong desire to retain the values and practices of their ethnic group (ESI=Mean 3.1, SD=.46) while adopting the values and practices of the dominant (Australian) society (DSI=Mean 2.99, SD=.38). Such preference for bi-culturalism was also evident in a study of South Asian men (Indian) living in Australia (Ramanathan, 2015).

Using Berry's (1991, 1997) model of acculturation strategy, the analysis found that South Asian migrant women adopted four acculturation strategies: assimilation, integration, separation and marginalisation. Of these, the most preferred strategy was integration (82%), followed by separation (11%), assimilation (5%) and marginalisation (2%). This result is consistent with those from several studies of South Asian migrants in Australia (Dey & Sitharthan, 2017; Ghuman, 2000) and in the United States (Needham et al., 2017) and United Kingdom (Robinson, 2009).

The finding that only a small number of participants (2.2%) were marginalised could be due to the fact that marginalised individuals did not participate in the study (Needham et al., 2017). Results also showed a low preference for assimilation (5.4%) and a high preference for integration strategies (82%). This may be partially explained by the fact that, in their strong desire to maintain the norms, values and beliefs of their traditional culture, South Asian women did not prefer to fully immerse themselves (assimilate) into the dominant culture (Naidoo, 2003). As such, the most logical option for South Asian women was integration (Dey & Sitharthan, 2017).

The socio-demographic characteristics of the participants might also have contributed to this finding. The sample over-represented relatively young women (45% were aged 30-39 years), who were proficient in English (one of the eligibility criteria) and internet savvy (a majority completed the survey online). These characteristics might have contributed to their integration into Australian society (Kankipati, 2012; Needham et al., 2017; Ramanathan, 2015). Assimilation is a less realistic option for them since, as Dey and Sitharthan (2017) have argued, a long length of residency in the host country is required to develop the attitudes and behavioural patterns of assimilation but the migration history of South Asian migrants to Australia is relatively recent.

Consistent with previous findings, there were significant differences in acculturation patterns among different ethnic groups of South Asian women (Dey & Sitharthan, 2017; Robinson, 2009). Indian women showed the most favourable attitudes towards acculturation into the dominant society, followed by Bangladeshi women. On the other hand, Bangladeshi women showed the most favourable attitudes towards ethnic acculturation followed by Indian women. Taken together, these results suggest that both Bangladeshi and Indian women preferred integration (high immersion in ethnic and dominant culture) as an acculturation strategy, though Bangladeshi women were more immersed into ethnic culture and Indian women into the dominant culture. This is consistent with a number of studies that reported integration as the most favoured strategy among Indian migrants (Kankipati, 2012; Needham et al., 2017; Ramanathan, 2015; Robinson, 2009). In her study of Indian women in the United States, Kankipati (2012) argued that relatively young age (30 years and over), high level of English language proficiency, high educational attainment and employment in professional and related occupations contributed towards their integration into mainstream society (Kankipati, 2012). This may be true for Indian women living in Australia, since they have high levels of English proficiency, high numbers of postgraduate degrees and the highest

percentage of professional employment among South Asian women in Australia (Sharma, 2016). This cannot, however, be confirmed for the Indian women in the current study as it did not consider education and employment as background variables.

The results also showed that Pakistani women were least acculturated towards the dominant Australian culture and Sri Lankans were least ethnically acculturated. Similar results for Pakistani adolescents in Australia were reported by Dey and Sitharthan (2017). The authors argued that such an acculturation pattern may be explained by their religious identity, which is predominantly Muslim and, specifically, by the discrimination Muslims in western countries have faced since September 11; hence, Pakistanis do not integrate into the dominant culture, instead withdrawing into their own cultural environment. There is, however, no evidence to suggest that such factors can explain the Pakistani women's acculturation status in this study, since information on religiosity was not collected. Moreover, according to ABS 2011, Bangladeshi women living in Australia are also predominantly Muslim and, in the present study, they exhibited high preference towards an integration strategy. Therefore, our results are in sharp contrast with the view that religious identity alone can account for acculturation patterns in certain South Asian Muslim women.

Our results showed that South Asian women who have spent a longer time in Australia are less likely to immerse into ethnic society. This result, in combination with the finding that Sri Lankan women had spent the longest amount of time in Australia among the four ethnic groups (Appendix F, Table 4.32) may partly explain why Sri Lankan women are the least ethnically acculturated group. However, no significant relationship was found between length of residency and dominant society immersion (DSI). This again differs from reports in the existing literature that, with increasing time spent in the dominant culture, migrants necessarily become more acculturated towards it (Hunt, Schneider, & Comer, 2004). It also underscores the importance of using comprehensive measures to assess

acculturation rather than a unidimensional measure such as length of residency (Cabassa, 2003; Hunt et al., 2004; Kang, 2006).

As discussed in Chapter 3, the limitations of previous acculturation studies have been identified as: 1) inconsistent conceptualisation of acculturation and reliance on unidimensional models; 2) inconsistent measures of acculturation and reliance on single item indices such as length of residency, language proficiency, etc.; and 3) failure to incorporate the contextual aspects of the acculturation process (Chirkov, 2009; Hunt et al., 2004; Salant & Lauderdale, 2003; Schwartz, Unger, Zamboanga, & Szapocznik, 2010). The current study addressed all these limitations by considering the socio-demographic context of the acculturation process while adopting a broad conceptual framework (bi-dimensional model) and methodological approach (single index and multidimensional scale) to explore the acculturation status of South Asian women in Australia.

5.2 Sexual Knowledge

The findings on sexual knowledge are presented in this section. Overall, South Asian women demonstrated a fairly poor knowledge of sexual health, a finding that is consistent with those from previous Australian research which consistently showed poor sexual knowledge among various migrant populations (Dean, Mitchell, Stewart, & Debattista, 2017b; Drummond, Mizan, & Wright, 2008; McMichael & Gifford, 2009; Wray, Ussher, & Perz, 2014).

Results showed a distinct lack of awareness about all aspects of the sexual response cycle. In particular, an item analysis showed that more than half of the participants held incorrect beliefs about aspects of sexual desire, arousal, masturbation by women, use of condoms during oral sex, orgasm and erectile dysfunction. These results cannot be compared with previous studies because the scale used to measure sexual response cycle knowledge

was unique to this study. Nonetheless, lack of knowledge related to the sexual response cycle is an important finding. Available evidence suggests that greater knowledge of these issues increases women's self-efficacy in relation to sexual practices (Bandura & Walters, 1977; Gollub, 2000; Walsh & Ward, 2010) and confidence in communicating their sexual needs and desires to their partners (Weinstein, Walsh, & Ward, 2008). This lack of knowledge may have an impact on their ability to negotiate their sexual rights and to experience sexual pleasure and desire (Tolman, 2002).

The participants' mean score on questions related to reproductive health was the highest among the three knowledge scores. Analysis of the four items on reproductive health showed that they performed relatively well on three questions relating to pregnancy and birth control. For example, more than two-thirds believed that passing urine or douching cannot prevent pregnancy while nearly two-thirds believed that ejaculating three times in a row to get rid of sperm does not necessarily ensure birth control. A sizeable proportion of participants (61.6%), however, held misconceptions about getting pregnant during the menstrual period, which could result in unwanted pregnancy.

South Asian women in the study had a low level of knowledge about STI/STDs. It was, however, encouraging to see that the vast majority (88.4%) believed that condom use can prevent the acquisition and spread of STDs. Results showed very poor knowledge about chlamydia and gonorrhoea, such that 91.9% gave incorrect answers to questions related to these STIs. More than two-thirds of participants incorrectly answered the question on transmission of genital herpes through sexual intercourse. In general, these findings are consistent with those reported for Muslim migrant women living in Sydney (Wray et al., 2014), African women living in Western Australia (Drummond et al., 2008) and Sudanese migrants in Queensland (Dean et al., 2017b).

The results of the current study, however, are not directly comparable with national data on STI knowledge as reported in the first and second Australian Study of Health and Relationships (ASHR I & II) (Grulich et al., 2014; Grulich, Visser, Smith, Rissel, & Richters, 2003) simply because these studies did not report data based on ethnicity. ASHR II reported migrant women together as women from a non-English speaking background (NESB) and showed that NESB women had poor STI knowledge. Specifically, women who spoke a language other than English at home scored 3.7 on STI knowledge (95 % CI, 3.2–4.2), which was significantly lower than English speakers, who scored 5.7 (95% CI 5.7–5.8) (Grulich et al., 2014).

Contrary to expectations, participants' age did not significantly influence any of the sexual knowledge scores. This result is inconsistent with those from several studies in which participants' sexual knowledge varied significantly by age (Fui-Ping, Rozumah, Mariani, Rumaya, & Mansor, 2010; Gould & Mazzeo, 1982; Grulich et al., 2014). This may be partly attributable to the fact that there was little variation in age in the present study (70.5% of women were ≥ 30 years). Further study with a more diversified sample in terms of age would be required to verify this result.

Participants' knowledge of reproductive health was significantly associated with length of residency, such that those who had spent a longer time in Australia had significantly higher levels of reproductive health knowledge than those who had arrived more recently. This is consistent with previous findings that knowledge of sexuality increases with increasing time spent in the host country (Dean, Mitchell, Stewart, & Debattista, 2017a; Gupta, Kumar, & Stewart, 2002; Meston, Trapnell, & Gorzalka, 1998). This is a positive result, suggesting that South Asian women are accessing information related to reproductive health and gaining knowledge over time (Dean et al., 2017b). Length of residency was not significantly related to sexual response cycle knowledge or STI/STDs knowledge.

Ethnicity was related to sexual knowledge. In particular, there were significant differences among the four groups of South Asian women in their knowledge of reproductive health and STI/STDs. This result is consistent with existing evidence of ethnic differences in sexual knowledge across the published literature (Brotto, Chou, Singh, & Woo, 2008; Meston et al., 1998; Testa & Coleman, 2006). For example, Brotto et al. (2008) reported that Canadian students from East Asia, India and European backgrounds differed significantly in reproductive health knowledge, while ethnic differences in STI/STDs-related knowledge was observed in the United Kingdom, where minority ethnic groups reported poorer STI knowledge than white British participants (Coleman & Testa, 2007).

Although several factors could account for these ethnic differences in sexual knowledge in the present study, including cultural beliefs, religion and education, among others, these variables were outside the scope of the inquiry. One particular finding, however, might be partly explained by the study results themselves. Sri Lankan women achieved a higher score on reproductive health knowledge than the other three ethnic groups. This might be due to two factors: 1) in this sample, Sri Lankans had spent the longest time in Australia of all the groups; and 2) length of residency positively influenced reproductive health knowledge. In addition, multivariate analyses showed that being from an Indian or Pakistani ethnic background increased the likelihood of having low STI/STDs knowledge. Although these results are not comparable due to lack of existing research on sexual knowledge on South Asian migrants living in Australia, they point to the need for targeted sexual health education on STIs among Indian and Pakistani women.

There were several important findings on the influence of acculturation on sexual knowledge. South Asian women who were immersed into the dominant society (acculturated towards mainstream culture) were more likely to have a higher level of knowledge about the sexual response cycle. Dominant society immersion was not related to scores on reproductive

health or STI/STDs knowledge. The finding of differential influence of dominant society acculturation on different sexual knowledge scores was unexpected. It is possible that knowledge related to reproductive health and STI/STDs may be resistant to mainstream acculturation and responsive to ethnic acculturation. This is supported by our results that those who were immersed into ethnic society (ethnic acculturation) were more likely to have a lower level of STI/STDs knowledge. However, further exploration is required to confirm these results.

The finding that length of residence was not associated with sexual response cycle knowledge but dominant society acculturation was, clearly suggests that length of residence does not explain the changes in sexual knowledge that accompany immersion in the dominant society, reinforcing the view that acculturation is a more important variable than time spent in Australia alone (Brotto, Woo, & Ryder, 2007b) and further supporting the inadequacy of a single proxy measure of acculturation.

The present study is the first and, to date, the only exploratory study of sexual health knowledge among South Asian migrant women in Australia and the first to investigate the connection between acculturation and knowledge of sexuality. The findings demonstrated a low level of sexual health knowledge among the participants, which indicates a clear need for sexual health education. The lack of sexual knowledge also suggests deficiencies in sexual health literacy, which is necessary to ensure sound decision-making around sexual health (Dean, 2014). It is worth mentioning here that, although sexual health knowledge helps individuals to adopt and maintain health protective behaviour (Dean 2017b), knowledge alone does not guarantee healthy sexual behaviour (James, Reddy, Taylor, & Jinabhai, 2004; Swenson et al., 2010). A study of 939 young Australians participating in a music festival, for example, found that knowledge of STIs was not associated with risk-taking behaviour (Lim, Hellard, Aitken, & Hocking, 2007). This discrepancy suggests that, in order to encourage

healthy sexual behaviours among South Asian women, educational interventions should adopt a broad approach towards sexual health literacy by not only improving sexual health knowledge but also enhancing skills and abilities to make safe sexual decisions and negotiate their sexual rights (James et al., 2004). The challenge for such interventions would be to improve sexual health literacy, with particular focus on STI/STDs, among South Asian women who continue to hold strongly to their ethnic cultural values and practices (Brotto et al., 2008).

5.3 Sexual Attitudes

Overall, participants showed moderately conservative attitudes towards sexual permissiveness, assessed against indicators such as casual sex, sex with many partners, and ongoing sexual relationships with multiple partners. On the other hand, they showed moderately liberal attitudes towards communion (sex in a relationship, i.e. idealistic sex) and instrumentality (utilitarian sex). In their attitudes towards birth control they strongly endorsed responsible sex.

Specifically, results showed that South Asian women strongly rejected sex with many partners and ongoing sexual relationships with multiple partners and held fairly conservative attitudes towards casual sex and uncommitted sex. Participants strongly endorsed birth control as a shared responsibility between men and women. In relation to sexual communion, on average participants showed moderately positive attitudes, although a closer examination of the scale items showed that they strongly endorsed two items relating to idealistic sex (sex as communion): ‘sex is a very important part of life’ and ‘a sexual encounter between two people deeply in love is the ultimate human interaction’. The results on instrumentality showed an interesting pattern. Participants moderately endorsed the physical aspects of sex and self-pleasure; yet were neutral (mean score 3.0) about sex as a mutually pleasurable and

satisfying activity. Taken together, these findings suggest that, on average, South Asian women were moderately instrumentalist (i.e. their attitudes were in a liberal direction), even though they were neither liberal nor conservative about some of the aspects of instrumental sex.

In sum, South Asian women reported conservative attitudes towards some aspects of sexuality (permissiveness) and liberal (strong to moderate) attitudes towards other aspects (birth control, communion and instrumentality). These results differ from those reported in the literature showing that Asian women, in general, are conservative in their sexual attitudes (Okazaki, 2002). Such comparison, however, needs to be treated with caution since several studies have suggested that Asian women might under-report liberal sexual attitudes (Ahrold & Meston, 2010; Meston & Ahrold, 2010). At the same time, the expression of liberal attitudes towards birth control, communion and instrumentality might reflect a social desirability bias (and, hence, possible over-reporting), but it is more likely to be explained by the composition of the sample (most being relatively young, English-speaking and internet savvy).

Uniquely, the results of this study of South Asian women's sexual attitudes can be compared with those from another Australian study of South Asian (Indian) men (Ramanathan, 2013), both of which used the same instrument to measure sexual attitudes. A comparison of the sexual attitude scores in the two studies is presented in Appendix F, Table 4.37. This comparison shows that, although both men and women held conservative attitudes towards permissiveness, men were less conservative (more permissive) than women. In addition, while South Asian women held more responsible attitudes towards birth control than Indian men, men held more liberal attitudes towards communion than women. In relation to instrumentality, however, their attitudes were similar, both being moderately liberal, although men were slightly more liberal than women. Taken together, these results

suggest that although South Asian men are more permissive than women (Buss & Schmitt, 1993; Hendrick, Hendrick, Slapion-Foote, & Foote, 1985; Oliver & Hyde, 1993), women's attitudes towards certain aspects of sexuality (e.g. birth control, instrumentality) may have become more liberal than or similar to those of men (Fugère, Escoto, Cousins, Riggs, & Haerich, 2008; Meston & Ahrold, 2010b; Petersen & Hyde, 2010).

Consistent with findings from previous studies (Le Gall, Mullet, & Shafiqhi, 2002; Ramanathan, 2013), older South Asian women tended to hold more conservative attitudes towards sexual permissiveness. This finding was expected, since it is reasonable to assume that older South Asian women would be more likely to conform to attitudes in line with traditional cultural values. This leads to the question: what are the traditional cultural values around women's sexuality in South Asia? Traditionally, women's sexuality in these societies is confined within the institution of marriage and is subordinated to male sexuality through social norms and values that forbid them from engaging in casual, premarital and/or extramarital sex (Chakraborty & Thakurata, 2013; Chakraborty & Thakurata, 2013). The items of the permissiveness subscale focussed on casual sex, sex with many partners, and uncommitted sex, which are at the core of dominant cultural discourses relating to women's sexuality in South Asia (Abraham, 2001). An alternative explanation of this result is that a multitude of factors, such as economic liberalisation, globalisation, the unprecedented expansion of media and access to the internet, are more likely to influence the (liberal) attitudes of younger South Asian women than those of their older counterparts (Abraham, 2001; Avasthi et al., 2008).

Results also showed that older women tended to hold more liberal attitudes towards birth control than younger participants. Comparable data on attitudes towards birth control among Indian men (Ramanathan, 2013) showed consistent results, with older men showing more responsible attitudes towards birth control than younger men. The correlation between

age and attitudes towards birth control, however, did not reach statistical significance among Indian men. It is noteworthy that, in the current study, age was found to be a significant predictor of attitudes towards permissiveness and instrumentality.

Importantly, significant ethnic differences were found in all four scores of sexual attitudes. Such results are consistent with several studies that compared Asian students with other populations (Ahrold & Meston, 2010; Brotto, Chik, Ryder, Gorzalka, & Seal, 2005; Meston et al., 1998; Meston & Ahrold, 2010). Pakistani women showed a consistent pattern of conservative attitudes towards sexual permissiveness, communion and instrumentality. A similar result was found in a U.K. study, where Pakistanis were more likely to hold conservative sexual attitudes than other South Asians (Griffiths et al., 2011). The authors explained this result by noting that Pakistanis considered religion as ‘very important’ and that premarital sex, extramarital sex and abortion are forbidden in Islam, which was the dominant religion among Pakistanis in the sample. Since religion or religious affiliation were not included as variables in the present study, further research is needed to examine the relevance of this argument among South Asian women in Australia.

Length of residence was positively correlated with attitudes towards permissiveness, birth control and instrumentality, indicating that South Asian women who had spent more time in Australia tended to have more liberal attitudes towards these aspects of sexuality. In general, this result is consistent with previous studies on Asian students, where length of residence was shown to influence sexual attitudes in a liberal direction (Brotto et al., 2005; Meston et al., 1998).

Our results suggest that acculturation had a differential influence on different aspects of sexual attitudes. Consistent with findings from a study on Canadian East Asian students (Brotto et al., 2007), South Asian women with greater immersion into the dominant society were more likely to hold liberal attitudes towards sexual permissiveness. In multivariate

analysis, both dominant society immersion and ethnic society immersion predicted attitudes towards permissiveness. This result is consistent with previous studies on Asian women where both mainstream and heritage acculturation predicted permissive sexual attitudes among Asian Canadians (Brotto et al., 2005) and casual sexual attitudes among Asian Americans (Ahrold & Meston, 2010) students.

Similarly, bivariate analysis showed that immersion into both ethnic and dominant cultures increased the likelihood of holding liberal attitudes towards communion. This implies that, while ethnic acculturation influences South Asian women to adopt liberal attitudes towards some aspects of communion (e.g. 'A sexual encounter between two people deeply in love is the ultimate human interaction'), dominant society acculturation also influences them to hold a similarly positive disposition towards some aspects of sexual communion (e.g. 'Sex is a very important part of life'). A possible explanation is that there may be something unique about attitudes towards sexual communion that makes immersion into both cultures important (Brotto et al., 2005). In Asian culture, for example, sex is not considered very important (Nicolosi, Glasser, Kim, Marumo, & Laumann, 2005), hence one can reasonably assume that positive attitudes towards this is likely to be influenced by the dominant culture. On the other hand, attitudes towards sex in a committed relationship is likely to be influenced by ethnic culture, since women's sexuality is defined within the institutions of marriage and kinship, particularly in South Asian culture (Abraham, 2001). Further investigation among other ethnic groups is needed to see if similar patterns emerge.

The findings of this exploratory study have made a significant contribution to filling the gap in literature on sexual attitudes of South Asian women in Australia. They have shed light on the influence of socio-demographic variables and acculturation on sexual attitudes among the study sample. Most importantly, the finding that acculturation has a differential influence on different aspects of sexual attitudes has implications for future research and

clinical practice with ethnically diverse populations in the context of sexual history (Brotto et al., 2005; Meston & Ahrold, 2010).

The main limitation is that this study only measured sexual attitudes, not sexual behaviours but, as the literature suggests, sexual behaviours do not necessarily reflect sexual attitudes (Le Gall et al., 2002). Nonetheless, they are often linked (Hendrick, Hendrick, & Reich, 2006). Hence the findings of this research provide important insights into the sexual attitudes of South Asian women that are of direct relevance to the development of health promotion programs targeting this population.

5.4 Breast and Cervical Cancer Screening

More than half (52.4%) of the South Asian women who participated in this study reported having had a mammogram, and 62% of them (aged ≥ 40 years) had it biannually. This rate of ever having had a mammogram is higher than that of Indian women (33.5%) (Kwok et al., 2015) but lower than that of Chinese women (58.1%) (Kwok et al., 2012) living in Australia. The results of the present study with respect to mammogram (within ≤ 2 years) in the target group (aged ≥ 40 years) are not directly comparable to those from most Australian reports since they use a different age categorisation. This finding, however, is comparable with those from a study of 10,179 women in Australia, which showed that 35.7% of women aged 40-59 years had a mammogram within the past two years; this is lower than the rate reported by South Asian women (62%) in the present study. Caution is necessary in drawing conclusions from these rates, however, because it is common for research participants to over-report mammographic screening (Hasnain, Menon, Ferrans, & Szalacha, 2014). Further, as discussed earlier, the preponderance of relatively young, English-speaking, internet savvy

South Asian women in the study sample may not be truly representative of South Asian women living in Australia and may account for the relatively high rates of participation.

For clinical breast examination (CBE), 60% of women reported having had a screening and 27% of them (aged ≥ 40 years) had it annually as recommended. These rates, particularly the rates of having had a CBE and having had it as recommended, are lower than those of Indian (61.9%, 35.7%) (Kwok et al., 2015) and Chinese women (83.8%, 35.4%) (Kwok et al., 2012) living in Australia.

South Asian women's rate of ever having had a Pap test (59.6%) was well below the participation rate among Australian-born women aged 20-69 years (93.4%) (Taylor, Mamoon, Morrell, & Wain, 2001). This is consistent with previous studies that reported lower participation in cervical cancer screening among migrant women compared with their native-born counterparts in Australia (Aminisani, Armstrong, & Canfell, 2012a; Aminisani, Armstrong, & Canfell, 2012b; Taylor et al., 2001), Canada (Gupta et al., 2002; McDonald & Kennedy, 2007) and the United States (Chaudhry, Fink, Gelberg, & Brook, 2003; Islam, Kwon, Senie, & Kathuria, 2006; Menon, Szalacha, & Prabhugate, 2012). Nevertheless, results showed that South Asian women's participation rate is higher than the rates reported for Vietnamese women aged 20-69 years (45%) (Taylor et al., 2003), Thai women aged 18-77 years (44%) (Jirojwong, Maclennan, & Manderson, 2001) and Middle Eastern women aged 40-69 years (49.5%) (Aminisani et al., 2012a) living in Australia.

In our bivariate and multivariate analyses, several demographic variables and acculturation were found to be associated with breast and cervical cancer screening. Most notably, consistent with previous studies (Ahmad & Stewart, 2004; Lee, Ju, Vang, & Lundquist, 2010; Somanchi, Juon, & Rimal, 2010), age was significantly associated with ever having had a mammogram, CBE and Pap test at both bivariate and multivariate level. Age was also associated with having had a CBE and Pap test as recommended within the target

age group. This indicates that older women (aged ≥ 30 years) are more likely to have had the screenings and follow the recommended guidelines for CBE and Pap test; this is a positive result for breast cancer screening, as the risk of breast cancer increases with age (AIHW 2017). For cervical cancer screening, however, this has implications for health promotion, as younger women (≤ 30) who are sexually active may be at risk of under- screening.

Consistent with previous studies (Glenn, Chawla, Surani, & Bastani, 2009), significant ethnic differences were found in the bivariate analyses for ever having had a mammogram, CBE and Pap test. Results of the multivariate analyses, however, showed that Bangladeshi and Sri Lankan women were less likely to have had a breast cancer screening than Indian women. A number of factors could explain this result, including differences in cultural and religious beliefs, education, income, etc., and/or the differences in breast cancer screening knowledge and self-perceived risk of cancer among these ethnic groups. Although the current study cannot identify the influence of these variables on breast cancer screening behaviour among South Asian women, since this was outside its scope, the findings do suggest the need for further investigation. Such ethnic differences raise important questions about the effectiveness of current health promotion strategies for these populations. Currently, BreastScreen New South Wales (NSW) has a range of brochures available in many different languages, including Hindi (the language spoken by Indians) and Tamil (the language spoken by the majority of Sri Lankans), but nothing in Bengali (which is spoken by Bangladeshis) (BreastScreen NSW, 2017). While this is important, hopefully future research will be able to inform the development of targeted and culturally tailored health promotion interventions that address the cultural and linguistic diversity among these groups.

Results from our survey showed that length of residence was not significantly associated with having ever had a breast cancer screening, which is in contrast with findings from several studies (Boxwala, Bridgemohan, Griffith, & Soliman, 2010; Kwok, Tranberg, &

Lee, 2015; Somanchi et al., 2010). Nevertheless, in relation to acculturation, we found a differential influence between CBE and mammogram. For CBE, consistent with previous research (O'Malley, Kerner, Johnson, & Mandelblatt, 1999), greater dominant society acculturation (DSI) predicted the likelihood of ever having had the screening, while higher immersion into ethnic society (ESI) was significantly associated with having ever had a mammogram. The favourable effect of ethnic acculturation (ESI) on mammographic screening was unexpected yet consistent with previous studies (Suarez, 1994; Yi, 1992). One possible explanation is that South Asian women with high ethnic identification have strong traditional values, maintain close contact with the ethnic community from their country of origin, and participate in traditional cultural activities (as reflected in the ESI scale). These women are more likely to receive support to attend screening from family, extended family and community peers (Suarez, 1994), for instance, by accompanying them to screening services, assisting them with transport and sharing child care responsibilities (Ahmad, Mahmood, Pietkiewicz, McDonald, & Ginsburg, 2012; Crawford, Ahmad, Beaton, & Bierman, 2016). In order to improve mammogram screening for this population, members of these support networks should be included in the development of community-based health promotion strategies to facilitate access to services (Crawford et al., 2016; Ahmad, Jandu, Albagli, Angus, & Ginsburg, 2013). Nevertheless, it is noteworthy that, after controlling for other variables, the effect of ESI on having had a mammogram disappeared. Additionally, after controlling for other variables, the results that dominant acculturation predicted the likelihood of having had a mammogram as recommended was expected and consistent with literature (Islam et al., 2006; O'Malley et al., 1999).

For cervical cancer screening, the finding that length of residence was not related to participation in Pap testing was again in contrast with previous studies on South Asian women (Chaudhry et al., 2003; Lee et al., 2010). The finding that greater acculturation

towards the dominant society (DSI) significantly predicted South Asian women's likelihood of ever having had a Pap test is, however, consistent with previous studies (Pourat, Kagawa-Singer, Breen, & Sripipatana, 2010; Tang, Solomon, Yeh, & Worden, 1999). In sum, the findings of the present study with respect to length of residence and screening participation not only challenge the existing evidence on South Asian women's screening behaviour, but also demonstrate the inadequacy of length of residence as a measure of acculturation and underscore the importance of using broad measures to capture all the nuances of acculturation in this population.

5.5 Sexual Help-seeking Attitudes and Behaviour

The present study reports cross-sectional data on sexual help-seeking attitudes and behaviour of South Asian women living in Australia. Some of the items in this section were from the questionnaire used in a Global Study of Sexual Attitudes and Behaviours (GSSAB) (Moreira et al., 2005). The intention was to be able to draw a meaningful comparison between the studies. It is noteworthy, however, that the global study reported help-seeking attitudes and behaviours among participants who had experienced sexual problems (at least one), while the main focus of the current study was to investigate sexual help-seeking attitudes among asymptomatic women. This study reported data on participants' sexual help-seeking behaviour in the past but did not include or exclude participants on the basis of their experience of sexual problems.

Results showed that more than half of the participants (59%) had not previously sought help. A sizeable proportion (65.3%), however, reported that they had never experienced any sexual health-related problems. Fifteen percent of those women who had never sought help reported that "I did not think it was serious enough to seek help". Such lack of sexual help-seeking behaviour among South Asian women is consistent with previous

studies across the globe that consistently showed a similar pattern (Berman et al., 2003; Moreira et al., 2005; Moreira, Glasser, Nicolosi, Duarte, & Gingell, 2008; Nicolosi et al., 2006; Nicolosi et al., 2005; Nicolosi et al., 2006)

Uniquely, this study found that South Asian ethnic groups vary in their attitudes and behaviour related to sexual help-seeking. Bangladeshi women were the least likely to have sought help and the least likely to seek help in future. Sri Lankan women were the most likely to have sought help and to seek help in future. This result can be interpreted in light of the previously reported finding that Sri Lankans had a high level of sexual knowledge and were likely to hold the most liberal sexual attitudes. Hence it is not surprising that they held positive attitudes towards sexual help-seeking. They were also the group with the longest period of residence in Australia and the least ethnically acculturated. Taken together, these factors might explain their positive sexual help-seeking attitudes and behaviour; although further study is required to confirm this result and explore the reasons behind it.

Help-seeking attitudes and behaviour varied by age. Young South Asian women (aged 30-39 years) were more likely than their older counterparts to seek help in future if they experience any sexual health problems. A high percentage of participants (63%) were willing to seek medical help, followed by help from family, including partner (28%). This result is in contrast with the help-seeking behaviour reported in the global study, which found that the most frequent action taken by men and women (39% in each case) was to 'talk to partners' (Moreira et al., 2005). This was also supported by an Australian study in which both men and women aged 40-80 years (37% in each case) reported that the most common action in response to sexual health problems was to 'talk to their partners' (Moreira, Glasser, King, Duarte, & Gingell, 2008). As mentioned earlier, the current study did not measure reported or actual sexual help-seeking behaviour, thus any discrepancy between attitudes and behaviour could not have been investigated. Further, South Asian women who preferred self-help to

seeking help from medical or family sources showed a high preference (53%) for seeking information anonymously over the internet or in books/magazines. This is concerning because it can result in a lack of reliable information for informed decision-making and poor sexual and reproductive health outcomes among these migrant women (Ussher et al., 2012; Wray et al., 2014)

Nevertheless, consistent with findings among South Asians in the U.K. (Griffiths, Hart, & Prost, 2008), our results show that, of those who were willing to seek medical help, the majority (70%) were willing to seek help from a general practitioner (GP). Although many Indian men in Australia (42%) reported a preference for a sexual health specialist, only 30% of South Asian women who were willing to seek medical help preferred specialists to GPs (Ramanathan, Sitharthan, Pepper, & Wylie, 2013).

When asked whether they were comfortable seeking help from their regular GP, the majority of participants (79%) answered in the affirmative. It was important to South Asian women that their regular GP was of the same gender and ethnicity as themselves. In contrast, young Vietnamese women in Australia reported that it was problematic for them to discuss sexual health issues with a GP of the same ethnic background due to concerns about privacy and confidentiality (Rawson & Liamputtong, 2009). In this context, our result is also in contrast with the attitudes of Indian men in Australia, who preferred a GP of Western ethnic origin to one of Indian ethnic origin (Ramanathan et al., 2013). This is consistent with previous research which showed that gender matching of GPs in relation to sexual health issues was more important for South Asian women than men (Ramanathan, 2013). This may be true for preference towards ethnically matched GPs among South Asian women in Australia.

In sum, the current study reported sexual help-seeking attitudes and behaviour of South Asian women in Australia from analyses of cross-sectional data. Mention must be

made, however, of some limitations. As discussed earlier, this study did not examine sexual help-seeking attitudes in relation to corresponding behaviours. Hence, further research is needed. Second, this study did not investigate the factors that could explain the help-seeking attitudes of South Asian women. Relatively little importance is given to women's health in traditional Indian families. This, combined with their responsibility for domestic labour and childcare, is likely to hinder their access to sexual health information and services (Brotto et al., 2008). In addition, socio-cultural understandings of sexual diseases and treatment of illness may act as a barrier towards help-seeking among these women. Hence, this is an important area for future research. In particular, qualitative research would be useful in understanding the influence of social norms and cultural aspects of sexual help-seeking attitudes and behaviours among this population.

5.6 Relationship of Findings to the Theoretical Framework

As discussed in Chapter 3, the conceptual framework of the current study is embedded in social constructionism and acculturation theory. Based on the notion that reality is socially constructed, social constructionists explore how knowledge and meaning are constructed through a dynamic interaction of socio-cultural processes and the interpersonal self (Hoffman, 1990). From this perspective, knowledge, attitudes and behaviours related to sexuality are influenced by culture and society (Vance, 1991,1998; Weeks, 1986, 2002). Acculturation theory explains the process of change that occurs when individuals from different cultural groups come into continuous contact (Berry, 1991, 1997). The theory of acculturation is intrinsically linked to the idea that sexuality is socially and culturally constructed. Together, these theories help us to understand how culture shapes sexuality in the context of migration.

This conceptualisation of sexuality as a social and cultural construction guided the development of this study from the formulation of the research questions through to the data analysis plan. The theory of acculturation was successfully employed to investigate the changes that occur with intercultural contact in a diverse ethnocultural setting like Australia. These theories and an extensive literature review were used to develop a conceptual framework (Chapter 2, Figure 2.2) within which to examine different aspects of sexuality. This conceptual framework provided a logical structure for the analysis of sexuality, socio-demographic variables and acculturation and their interrelationships.

The results showed that sexual knowledge, sexual attitudes and sexuality related help-seeking behaviour; particularly breast and cervical cancer screening, are influenced by various socio-demographic factors. Significant ethnic differences were found among the four groups of South Asian women in regard to all three aspects of sexuality, indicating that cultural diversity helped to shape their sexuality. This conclusion is in keeping with the assumptions of a social constructionist theory of sexuality. Our results also showed that acculturation has an influence on sexual knowledge, attitudes and cancer screening behaviour. The overall results are consistent with the literature on acculturation and sexuality among different migrant communities. They were produced using Berry's well-established model of acculturation, which has been demonstrated to effectively predict sexual knowledge, attitudes and cancer screening behaviour in the socio-cultural context of migrant populations (Ahrold & Meston, 2010; Brotto et al., 2005; Brotto et al., 2008; Brotto, Woo, & Ryder, 2007a; Meston & Ahrold, 2010a; Woo, Brotto, & Gorzalka, 2009). Hence the current findings provide a credible foundation for the generation of hypotheses to inform future studies.

5.7 Limitations

One of the strengths of the current study is the fact that it employed a widely used acculturation model and both bi-dimensional and unidimensional measures of acculturation. Previous studies, by contrast, tended to rely on unidimensional measures. As discussed earlier, the existing literature on acculturation and sexuality among Asians is based on studies of samples of young students, whereas an adult community based sample was used in the current study. Like any other research, however, there are limitations that warrant careful consideration in interpreting the findings.

First, the study used non-probability convenience sampling and a snowball technique for recruitment. Although these methods introduce bias that limits the ability to generalise findings, this approach was chosen as the most culturally and methodologically appropriate for this particular study (Dean, 2014; Dey 2011). From an operational point of view, a random sample was not feasible for many reasons and, in the absence of a central register of the Indian subcontinental population in Australia that could be readily accessed by the researcher for recruitment purposes, a combination of community based and snowballing techniques was deemed necessary (Dey, 2011).

One of the main methodological challenges, nonetheless, was to collect data on a topic that is considered extremely sensitive among the study population (Griffiths et al., 2008). This was reflected in the amount of time (2 years and 10 months) it took for the online survey to collect an adequate number of responses (n=175). To overcome this challenge, the study added a pen-paper version of the survey and used a snowball technique, but only a small number (n=19) of participants was recruited in this way over a period of one year and four months. Nevertheless, this combination of methods resulted in a sample that reflected the characteristics of the ethnically and culturally diverse South Asian communities in Australia (ABS, 2011) and was large enough to generate statistically significant results.

The findings are also susceptible to geographical bias as the non-online participants (n=19) were recruited in Sydney only and advertising activities for the online survey were carried out mainly in Sydney. Although it was expected that the online survey would ensure wider access to South Asian women in Australia, it is likely that the sample contains a high proportion of participants from Sydney, hence limiting generalisability. Nevertheless, the findings provide a reliable and valuable insight into the sexuality of this community.

Data were collected via self-report, which may have led to the under-representation of socially disadvantaged persons. For example, the online survey may have created bias in sample selection, resulting in an over-representation of internet savvy South Asian women and under-representation of women with less internet engagement and/or without access to a computer and/or the internet.

It is also quite possible that some intrinsic bias led to under- or over-reporting certain kinds of information. Although the survey was self-administered and complete anonymity was assured, social desirability considerations might have contributed to over-reporting of liberal sexual attitudes and breast and cervical cancer screening participation. Therefore, caution should be exercised in drawing conclusions from these results.

The cross-sectional design of the study also limited our ability to establish cause-and-effect relationships among the variables. Time is of considerable importance in relation to both sexuality and acculturation, therefore a longitudinal study design would have been the best approach to gain insight into these variables. Moreover, the study's quantitative methodology provided a measure of the magnitude of the findings, but qualitative data would have enriched the depth and meaningfulness of the results. In fact, the theoretical framework of social constructionism is more congruent with qualitative research (Robboy, 2002). A mixed method (quantitative and qualitative) design would have generated better understanding of the factors that impact on sexuality.

Another major limitation of the study was that participants had to be fluent in English, which excluded South Asian women who lack English language proficiency. This impacted not only on the diversity of the study sample but also on the measurement of acculturation, since English language proficiency could not be used as a proxy measure. Another limitation was that the study did not gather information about the participants' generational status, which has also been used as a proxy measure of acculturation in many studies, as well as important background variables such as education, income, and religiosity which, the literature suggests, might influence both acculturation and sexuality. Data on those issues would have helped to address the research questions more comprehensively. Finally, it was not within the scope of the study to collect data on sexual behaviour and/or sexual experience of the study population. This has limited our ability to examine the relationship between sexual attitudes and related sexual behaviours.

Further, the measures used to assess sexual knowledge of South Asian women were created for the purpose of this particular study and had therefore not been validated. These scales were developed through a review of literature, and some items were selected from existing measures. A common limitation of these knowledge scales was that they had not been subjected to rigorous psychometric testing and may lack external validity. However, the measures did have face validity and internal validity.

5.8 Implications for Future Research

The findings of the current study made a significant contribution to filling some of the knowledge gaps discussed in Chapter 2. The results, however, identified the following areas for future research.

- § Although South Asians constitute a considerable proportion of migrants in Australia, Canada, the United States and the United Kingdom (Kwok et al., 2015; Crawford et

al., 2016), there is currently no specific acculturation scale for this group (Menon et al., 2012). Research is needed to develop and validate a comprehensive scale to assess acculturation among the multi-ethnic South Asian population and to better understand the acculturation process among South Asian women in Australia.

§ Sexuality and acculturation are both fluid concepts (Ramanathan, 2013) in which time plays a vital role. Therefore, a longitudinal study design is indicated. Additionally, as discussed earlier, future research on acculturation and sexuality should collect both qualitative and quantitative data.

§ Overall, significant ethnic differences were found among Indian, Bangladeshi, Sri Lankan and Pakistani women in sexual knowledge, attitudes, help-seeking attitudes and behaviour and breast and cervical cancer screening behaviour. A number of factors could have contributed to these differences, including cultural and religious variables, education, employment, and income, among others. These factors were not within the scope of the current study. Our findings, however, identified the need for research focusing on the factors that contribute to shaping ethnic differences in sexuality. A qualitative research design would be the most appropriate for this purpose.

§ Future research also needs to address the paucity of ethnicity-specific data on sexuality. In particular, more information is needed about the screening behaviour of under-investigated migrant sub-populations who are at higher risk of breast and cervical cancer than the general Australian population. We also need to better understand how acculturation influences their participation in screening and their adherence to Australian recommendations for screening in particular age groups. Our results suggest that ethnic acculturation has a positive influence on mammographic

screening. Further exploration using qualitative methodology will enable us to better understand such influence.

§ Further replication of the current study is required to validate the findings in a wider and representative sample of South Asian women in Australia. These studies should ensure that the sample contains greater diversity in relation to socio-demographic characteristics such as age and relationship status, among others. Because the current study was a large exploratory investigation of sexuality among South Asian women in Australia, it used a small sub-sample from a particular age group (>40 years) to assess their breast cancer screening behaviour according to the recommendations. Future research should include a larger sample in that age group in order to validate our results.

§ Results showed that acculturation had a differential effect on different aspects of sexual attitudes. In particular, both mainstream and ethnic acculturation influenced attitudes towards sexual communion. The reasons for these influences, however, are unclear. Further exploration is needed to better understand these phenomena.

§ Another area in need of further research is that of sexual help-seeking attitudes and behaviours. Results showed a lack of help-seeking behaviour among South Asian women. Although this is the first study to report sexual help-seeking attitudes and behaviour among South Asian women in Australia, it failed to collect data that would explain the reasons for this. Understanding the factors that contribute to such behaviour should be the focus of a future study.

§ Finally, as this was an exploratory study, some important aspects of sexuality fell outside its scope. In particular, it failed to explore sexual behaviours and experience among the study population. This is an important area for future research to determine whether a gap exists between attitudes and behaviours related to sexual health.

5.9 Implications for Health Education, Health Promotion and Clinical Practice

The findings of this study can inform the development of culturally and linguistically appropriate sexual health education and promotion initiatives to improve sexual health knowledge, encourage healthy sexual behaviour and increase participation in breast and cervical cancer screening among South Asian women in Australia. The main recommendations that have emerged from our analysis are reported below.

- § The results highlighted the need for community based sexual health educational programs to adopt a broad approach to improving sexual health knowledge and sexual health literacy among South Asian women. The goal of such programs would be to enhance their knowledge and skills around safe sexual decision-making and negotiation of their sexual rights. These programs should focus on aspects of the sexual response cycle (desire, arousal, oral sex, orgasm, etc.), pregnancy during the menstrual period, and transmission and symptoms of sexually transmitted infections and diseases such as genital herpes, chlamydia and gonorrhoea. Improved sexual health literacy can, in turn, encourage healthy sexual behaviour.
- § An important finding was that South Asian women who have spent a longer time in Australia are likely to have a higher level of sexual knowledge. This highlights the need for sexual health education programs during the early years of migration. Such programs should adopt a targeted approach, particularly among Indian and Pakistani women, to improve their sexual health literacy related to STI/STDs.
- § Sexual health education programs should also be culturally appropriate. An inclusive and integrated approach is necessary to improve sexual health literacy, especially

among South Asian women who continue to hold strongly to their ethnic cultural values and practices

§ The data on cancer screening participation identified a need for targeted and culturally appropriate health promotion interventions to increase participation in breast cancer screening among Bangladeshi and Sri Lankan women. Health promotion materials targeting these communities should take into consideration their linguistic diversity. These initiatives would also benefit from the inclusion of support networks (family, community peers) in the development of community-based strategies to facilitate access to screening services.

§ Overall, the results showed that all aspects of sexuality examined in the present study are influenced by ethnicity and acculturation. This reinforces the importance of ensuring that sexual health providers working with diverse ethnic groups recognise and understand the social norms and cultural practices around sexual health in a cross-cultural setting. Cultural competency training would benefit both the providers themselves and the migrant communities, helping to increase access to services and improve sexual health outcomes. For sexual health clinicians in particular, we recommend that they incorporate a quick assessment of acculturation in the context of taking a sexual history.

5.10 Conclusion

The broad aim of the study was to explore South Asian women's sexuality and to examine its relationship with acculturation. Guided by a well-established theoretical framework within which sexuality is understood from social and cultural perspectives, the results have made an important contribution to existing knowledge of migrant women's sexuality and sexual

health. More importantly, the findings highlighted important empirical and theoretical gaps in the literature.

As the first exploratory study to investigate patterns of acculturation and their relationship with socio-demographic variables among four ethnic groups of South Asian women living in Australia, it fills an important gap in the literature. The results provide previously unavailable baseline scientific data on sexual knowledge, sexual attitudes, and sexual help-seeking attitudes and behaviour, particularly breast and cervical cancer screening behaviour, among South Asian women in Australia. As such, they offer important insights into the influence of acculturation on sexuality among South Asian women in Australia. These data will help to generate hypotheses to be tested in future research.

One of the major strengths of the current study is that it addressed a major conceptual and methodological shortcoming in acculturation research by employing a bi-dimensional model and using a combination of bi-dimensional and unidimensional measures of acculturation. This allowed us to examine the influence of acculturation on different aspects of sexuality in a comprehensive manner. The findings can also inform the development of culturally and linguistically appropriate sexual health education and promotion initiatives to improve sexual health and wellbeing among South Asian women in Australia. Future research initiatives should build on these results to continue exploring the influence of acculturation on sexual behaviours and experience among South Asian women living in Australia.

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Appendix A
Participant Information Sheet

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Acculturation and Sexuality: sexual knowledge, attitude and help seeking behaviour of South Asian women in Australia

PARTICIPANT INFORMATION STATEMENT

(1) What is the study about?

The purpose of this research is to advance our knowledge on the impacts of acculturation on sexual knowledge, attitude and help seeking behaviour of South Asian women living in Australia. The present study will also look into the pattern of utilization of health care services for sexual health issues by South Asian women.

(2) Who can participate in the study?

We are requesting female volunteers to participate who are from South Asian origin living in Australia. To participate in this study, you have to be 18 years of age or above and fluent in English.

(3) Who is carrying out the study?

The study is being conducted by the Graduate Program in Sexual Health, Faculty of Health Sciences at The University of Sydney. The chief investigator is Dr. Gomathi Sitharthan, Senior Lecturer in Psychology and co-researcher is Nafisa Quadri Asif, graduate student from School of Sexual Health, University of Sydney.

(4) What does the study involve?

The study invites participants to complete questionnaires on-line which will take approximately 20 minutes to complete. Participation in this survey is voluntary and confidential.

(5) Can I withdraw from the study?

Being in this study is completely voluntary and you are not under any obligation to complete the questionnaire/survey. Submitting a completed questionnaire/survey is an indication of your consent to participate in the study. You can withdraw any time prior to submitting your completed questionnaire/survey. Once you have submitted your questionnaire/survey anonymously, your responses cannot be withdrawn.

(6) Will anyone else know the results?

All aspects of the study, including results, will be strictly confidential and only the researchers will have access to information on participants. A report of the study will be submitted for publication, but individual participants will not be identifiable in such a report.

Acculturation and Sexuality: Sexual knowledge, attitude and help seeking behaviour of South Asian women in Australia

V2_14 Feb2011

Page 1 of 2

(7) Will the study benefit me?

Your participation in this survey will raise your awareness on acculturation and sexual health. The findings of this study will have impact on future policy development for better sexual health care for migrants in Australia.

(8) Can I tell other people about the study?

We would encourage you to discuss this project with others. Any one who is interested in this project can access the website. Please contact Dr. Gomathi Sitharthan on 02 9351 9584 or gmathi.sitharthan@sydney.edu.au or Nafisa Quadri Asif on nasi5672@uni.sudney.edu.au

(9) What if I require further information?

When you have read this information, [Dr Gomathi Sitharthan](#) or [Nafisa Quadri Asif](#) will discuss it with you further and answer any questions you may have. If you would like to know more at any stage, please feel free to contact: Gomathi Sitharthan on 02 9351 9584 or gmathi.sitharthan@sydney.edu.au or Nafisa Quadri Asif on nasi5672@uni.sudney.edu.au

(10) What if I have a complaint or concerns?

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

This information sheet is for you to keep.

Appendix B

Survey Instrument: Questionnaire

Acculturation and sexuality: Sexual knowledge, attitude and help seeking behaviour of South Asian women in Australia

Section 1: Demographics (5)

1. Age (completed years):

2. The year of arrival in Australia:

3. Current status in Australia
 - Student
 - Temporary resident
 - Permanent resident
 - Citizen of Australia

4. Country of origin
 - India
 - Bangladesh
 - Sri Lanka
 - Pakistan

5. Current relationship status
 - Single
 - In a relationship (dating/de-facto)

- Married
- Separated
- Divorced
- Others

Section 2: Sexual Knowledge Scale (31)

For each of the following 30 statements, please circle the right answer whether you think the statement is true or false. If you do not know the answer, please circle do not know.

Sexual desire

6. Men have higher levels of sexual desire than women.

- True
- False
- Do not know

7. After a certain age (say past 55), both men and women experience a loss of interest in sexuality.

- True
- False
- Do not know

8. There is a natural decline in sexual drive in all post-menopausal women.

- True
- False
- Do not know

9. Heavy consumption of cigarette and/or alcohol may reduce sexual desire.

- True
- False
- Do not know

Virginity and arousal

10. The presence of hymen (a thin membrane that surrounds the opening to a woman's vagina) is an indicator that a woman is virgin.

- True
- False
- Do not know

11. Vaginal discharge is always a noticeable sign for sexual arousal.

- True
- False
- Do not know

Orgasm (intense feeling of pleasure experienced at the peak of sexual stimulation)

12. Sex is a failure if there is no orgasm.

- True
- False
- Do not know

13. 'Vaginal orgasms' are better than 'clitoral orgasms'.

- True
- False
- Do not know

14. Women take longer to reach orgasm than men.

- True
- False
- Do not know

15. One can never have an orgasm from oral sex.

- True
- False
- Do not know

16. The larger the penis, the greater the chance of female orgasm.

- True

- False
- Do not know

17. A circumcised penis decreases a woman's ability to experience orgasm.

- True
- False
- Do not know

Pregnancy/birth control

18. Sexual intercourse during pregnancy is harmful for women.

- True
- False
- Do not know

19. Women can become pregnant the first time they have sexual intercourse.

- True
- False
- Do not know

20. Women cannot become pregnant during menstrual period.

- True
- False
- Do not know

21. Women will not become pregnant if men 'pulls out' (withdrawal method) before ejaculation.

- True
- False
- Do not know

22. A man can get rid of all his sperm by ejaculating three times in a row and thus can't get anyone pregnant.

- True
- False
- Do not know

23. Passing urine or douching (using water or a medicated solution to clean the vagina) immediately after sexual intercourse washes out sperm and prevents pregnancy.

- True
- False
- Do not know

Oral Sex

24. Oral sex is absolutely safe, can't cause any sexually transmitted diseases (STDs).

- True
- False
- Do not know

25. Condoms can't be used while giving or receiving oral sex.

- True
- False
- Do not know

Masturbation (sexual stimulation of a person's genitals, usually to the point of orgasm)

26. Masturbation (sexual stimulation of a person's genitals, usually to the point of orgasm) is an unhealthy practise.

- True
- False
- Do not know

27. Most women do not masturbate.

- True
- False
- Do not know

Sexual dysfunction in men

28. Premature ejaculation (a condition in which a man ejaculates earlier than he or his partner would like him to) is typically a younger man's problem.

- True
- False
- Do not know

29. Viagra and other similar medications are very effective to treat erectile dysfunction (inability to develop or maintain an erection of the penis sufficient for satisfactory sexual performance) in men.

- True
- False
- Do not know

STD/STIs

30. Condom can prevent from getting or passing along sexually transmitted diseases (STDs).

- True
- False
- Do not know

31. Treatment of venereal diseases (VD) is best when both partners are treated at the same time.

- True
- False
- Do not know

32. Chlamydia and gonorrhea (sexually transmitted bacteria that affect both men and women) are no big deal and will go away on their own.

- True
- False
- Do not know

33. AIDS (*Acquired Immune Deficiency Syndrome*) is a sexually transmitted disease caused by bacteria.

- True
- False
- Do not know

34. One can catch Human Papillomavirus (HPV) from a toilet seat or from sitting where someone else who has HPV has been sitting.

- True
- False
- Do not know

35. Genital warts (small, soft, lumps in the genital area caused by HPV) if left untreated can cause cervical cancer.

- True
- False
- Do not know

36. Unlike genital warts, genital herpes (painful genital sores) is not contagious and therefore no need to avoid sexual intercourse during an active infection.

- True
- False
- Do not know

Section 3: Brief Sexual Attitudes Scale (23)

Listed below are several statements that reflect different attitudes about sex. For each statement fill in the response on the answer sheet that indicates how much you agree or disagree with that statement. Some of the items refer to a specific sexual relationship, while others refer to general attitudes and beliefs about sex. Whenever possible, answer the questions with your current partner in mind. If you are not currently dating anyone, answer the questions with your most recent partner in mind. If you have never had a sexual relationship, answer in terms of what you think your responses would most likely be.

37. I do not need to be committed to a person to have sex with him/her.

- Strongly agree
- Moderately agree
- Neutral
- Moderately disagree
- Strongly disagree

38. Casual sex is acceptable.

- Strongly agree
- Moderately agree
- Neutral
- Moderately disagree
- Strongly disagree

39. I would like to have sex with many partners.

- Strongly agree
- Moderately agree
- Neutral
- Moderately disagree
- Strongly disagree

40. One-night stands are sometimes very enjoyable.

- Strongly agree
- Moderately agree
- Neutral
- Moderately disagree
- Strongly disagree

41. It is okay to have ongoing sexual relationships with more than one person at a time.

- Strongly agree
- Moderately agree
- Neutral
- Moderately disagree
- Strongly disagree

42. Sex as a simple exchange of favours is okay if both people agree to it.

- Strongly agree
- Moderately agree
- Neutral
- Moderately disagree
- Strongly disagree

43. The best sex is with no strings attached.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
44. Life would have fewer problems if people could have sex more freely.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
45. It is possible to enjoy sex with a person and not like that person very much.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
46. It is okay for sex to be just good physical release.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
47. Birth control is part of responsible sexuality.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
48. A woman should share responsibility for birth control.
- Strongly agree
 - Moderately agree

- Neutral
 - Moderately disagree
 - Strongly disagree
49. A man should share responsibility for birth control.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
50. Sex is the closest form of communication between two people.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
51. A sexual encounter between two people deeply in love is the ultimate human interaction.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
52. At its best, sex seems to be the merging of two souls.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
53. Sex is a very important part of life.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree

- Strongly disagree
54. Sex is usually an intensive, almost overwhelming experience.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
55. Sex is best when you let yourself go and focus on your own pleasure.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
56. Sex is primarily the taking of pleasure from another person.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
57. The main purpose of sex is to enjoy oneself.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
58. Sex is primarily physical.
- Strongly agree
 - Moderately agree
 - Neutral
 - Moderately disagree
 - Strongly disagree
59. Sex is primarily a bodily function, like eating.

- Strongly agree
- Moderately agree
- Neutral
- Moderately disagree
- Strongly disagree

Section 4: Sexual Help seeking behaviour (9)

60. Have you ever sought help or advice for sexual health issues?

- Yes
- No (go to Q.62)

61. If the answer is Yes, who did you seek help from?

<Free Text>

63. If the answer is No, why not? You can choose more than one option

- § I have never had a problem
- § I did not think it was serious enough to seek help
- § I did not think it was a medical problem
- § I felt uncomfortable discussing it
- § I was worried that doctor might find something seriously wrong about me

63. Will you seek help in future if you ever have problems with sexual health?

- Yes
- No (go to Q.68)

64. If the answer is Yes, who will you seek help from? You can choose more than one option.

- § Family (Partner, family member)
- § Social support (Neighbour, friends, religious advisor etc.)
- § Medical Practitioner

65. If you choose to go to a medical practitioner, who will be your preferred one?

You can choose more than one option.

- § General physician (GP)
- § Pharmacists
- § Sexual Health Clinic
- § Sexologist
- § Urologist
- § Psychiatrist

66. Will you be comfortable to see your regular General Physician (GP) in case of sexual health issues?

- Yes
- No

67. If the answer is No, Why not? You can choose more than one option.

- § My GP is a male
- § My GP is a too young/too old to talk about sexual health issues
- § My GP comes from a different ethnic background
- § My GP is a close friend/family friend

68. If you do not want to seek help, then what step would you take?

- Keep it to yourself and do nothing
- Wait to see whether it will go away on its own
- Search information anonymously (internet, magazines)
- Buy/use un-prescribed medicines available over the counter

Section 5: Utilization of sexual health services (6)

Behavioural Risk Factor Surveillance System Questionnaire 2010

69. A mammogram is an x-ray of each breast to look for breast cancer. Have you ever had a mammogram?

- Yes
- No (skip Q.70)

70. How long has it been since you had your last mammogram?

- Within the past year
- Within the past 2 years
- Within the past 3 years
- Within the past 5 years
- 5 or more years ago

71. A clinical breast exam is when a doctor, nurse, or other health professional feels the breasts for lumps. Have you ever had a clinical breast exam?

- Yes
- No (skip Q.72)

72. How long has it been since your last breast exam?

- Within the past year
- Within the past 2 years
- Within the past 3 years
- Within the past 5 years
- 5 or more years ago

73. A Pap test is a test for cancer of the cervix. Have you ever had a Pap test?

- Yes
- No (skip Q.74)

74. How long has it been since you had your last Pap test?

- Within the past year
- Within the past 2 years
- Within the past 3 years
- Within the past 5 years
- 5 or more years ago

Section 6: Acculturation Scale (28)

Stephenson Multigroup Acculturation Scale (SMAS)

Below are a number of statements that evaluate changes that occur when people interact with others of different cultures or ethnic group. For questions that refer to “COUNTRY OF ORIGIN” or “NATIVE COUNTRY”, please refer to the country from which your family originally came. For questions referring to “NATIVE LANGUAGE’, please refer to the language spoken where your family originally came.

Circle the answer that best matches your response to each statement.

75. I am informed about current affairs in Australia.

- False
- Partly false
- Partly true
- True

76. I speak my native language with my friends and acquaintances from my country of origin.

- False
- Partly false
- Partly true
- True

77. I have never learned to speak the language of my native country.

- False
- Partly false
- Partly true
- True

78. I feel totally confident_with (Anglo) Australian people.

- False
- Partly false

- Partly true
- True

79. I eat traditional food from my native culture.

- False
- Partly false
- Partly true
- True

80. I have many (Anglo) Australian acquaintances.

- False
- Partly false
- Partly true
- True

81. I feel comfortable speaking my native language.

- False
- Partly false
- Partly true
- True

82. I am informed about current affairs in my native country.

- False
- Partly false
- Partly true
- True

83. I know how to read and write in my native language.

- False
- Partly false
- Partly true
- True

84. I feel at home in Australia.

- False
- Partly false
- Partly true
- True

85. I attend social functions with people from my native country.

- False
- Partly false
- Partly true
- True

86. I feel accepted by (Anglo) Australian.

- False
- Partly false
- Partly true
- True

87. I speak my native language at home.

- False
- Partly false
- Partly true
- True

88. I regularly read magazines of my ethnic group.

- False
- Partly false
- Partly true
- True

89. I know how to speak my native language.

- False
- Partly false
- Partly true
- True

90. I know how to prepare (Anglo) Australian foods.

- False
- Partly false
- Partly true
- True

91. I am familiar with the history of my native country.

- False
- Partly false

- Partly true
- True

92. I regularly read an Australian newspaper.

- False
- Partly false
- Partly true
- True

93. I like to listen to music of my ethnic group.

- False
- Partly false
- Partly true
- True

94. I like to speak my native language.

- False
- Partly false
- Partly true
- True

95. I speak English at home.

- False
- Partly false
- Partly true
- True

96. I speak my native language with my spouse or partner.

- False
- Partly false
- Partly true
- True

97. When I pray, I use my native language.

- False
- Partly false
- Partly true
- True

98. I stay in close contact with my family members and relatives in my native country.

- False
- Partly false
- Partly true
- True

99. I am familiar with important people in Australian history.

- False
- Partly false
- Partly true
- True

100. I think in English.

- False
- Partly false
- Partly true
- True

101. I speak English with my spouse or partner.

- False
- Partly false
- Partly true
- True

102. I like to eat Australian foods.

- False
- Partly false
- Partly true
- True

Appendix C

Ethical Approval



RESEARCH INTEGRITY
Human Research Ethics Committee
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NSW 2006 AUSTRALIA

Ref: MF/PE

24 February 2011

Dr Gomathi Sitharthan
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The University of Sydney
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Dear Dr Sitharthan

Thank you for your correspondence dated 15 and 25 February 2011 addressing comments made to you by the Human Research Ethics Committee (HREC).

I am pleased to inform you that with the matters now addressed your protocol entitled "**Acculturation and Sexuality: sexual knowledge, attitude and help seeking behaviour of South Asian women in Australia**" has been approved.

Details of the approval are as follows:

Protocol No.:	13455
Approval Period:	February 2011 to February 2012
Authorised Personnel:	Dr Gomathi Sitharthan Mrs Nafisa Quadri Asif Dr Syeda Zakia Hossain

Documents Approved:
Participant Information Statement Version 2 14 Feb 2011
Advertisement Version 2 14 Feb 2011
Questionnaire Version 3 24 Feb 2011

The HREC is a fully constituted Ethics Committee in accordance with the National Statement on Ethical Conduct in Research Involving Humans-March 2007 under Section 5.1.29.

The approval of this project is conditional upon your continuing compliance with the National Statement on Ethical Conduct in Research Involving Humans. A report on this research must be submitted every 12 months from the date of the approval or on completion of the project, whichever occurs first. Failure to submit reports will result in withdrawal of consent for the project to proceed. Your report is due by **28 February 2011**.

Chief Investigator / Supervisor's responsibilities to ensure that:

1. All serious and unexpected adverse events should be reported to the HREC within 72 hours for clinical trials/interventional research.
2. All unforeseen events that might affect continued ethical acceptability of the project should be reported to the HREC as soon as possible.

Manager Human Ethics

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ABN 15 211 513 464
CRICOS 00026A



THE UNIVERSITY OF
SYDNEY

3. Any changes to the protocol must be approved by the HREC before the research project can proceed.
4. All research participants are to be provided with a Participant Information Statement and Consent Form, unless otherwise agreed by the Committee. The following statement must appear on the bottom of the Participant Information Statement: *Any person with concerns or complaints about the conduct of a research study can contact the Manager, Human Ethics, University of Sydney on +61 2 8627 8176 (Telephone); + 61 2 8627 8177 (Facsimile) or ro.humanethics@sydney.edu.au (Email).*
5. You must retain copies of all signed Consent Forms and provide these to the HREC on request.
6. It is your responsibility to provide a copy of this letter to any internal/external granting agencies if requested.
7. The HREC approval is valid for four (4) years from the Approval Period stated in this letter. Investigators are requested to submit a progress report annually.
8. A report and a copy of any published material should be provided at the completion of the Project.

Please do not hesitate to contact Research Integrity (Human Ethics) should you require further information or clarification.

Yours sincerely

Dr Margaret Faedo
Manager, Human Ethics
On behalf of the HREC

20120912 13455 Modification Approved



Kala Retnam <kala.retnam@sydney.edu.au> on behalf of Human Ethics <ro.humanethics@sydney.edu.au>

Fri 21/09/2012, 12:55 AM

Gomathi Sitharthan <gomathi.sitharthan@sydney.edu.au>; Nafisa Quadri Asif ✉

Dear Dr Sitharthan

Title: Acculturation and Sexuality: sexual knowledge, attitude and help seeking behaviour of South Asian women in Australia

Protocol No: 13455

Approved Documents:

Advertisement – V3_7 Aug 2012

Participant Information Statement - V2_7 Aug 2012

Questionnaire – V5_7 Aug 2012

Your request to modify the above application was considered by the Executive Committee of the Human Research Ethics Committee (HREC) at its meeting on **12 September 2012**. The modification has been approved as attached.

The Committee had no ethical objections to the modification/s and has approved the protocol to proceed.

Please do not hesitate to contact Research Integrity (Human Ethics) should you require further information or clarification.

Yours Sincerely

Human Research Ethics Committee
The University of Sydney

Appendix D

Advertisement and Community Endorsements

URL: <http://www.priyoaustralia.com.au/articles/film-book-art-others/2011/04/12/your-help-needed-for-research-work/>



Your Help Needed for Research Work

Dear Reader,

I am Nafisa Quadri Asif, a PhD student from the Faculty of Health Sciences, University of Sydney. As part of my degree requirement, I am conducting a research on 'Acculturation and Sexuality: sexual knowledge, attitude and help seeking behaviour of South Asian women in Australia' in collaboration with the University of Sydney. This is the first ever exploratory research on sexual health of South Asian women and the findings will provide baseline information for the development of culturally appropriate sexual health interventions for migrants in Australia.

However, this is an online research and the study requires South Asian female volunteers to participate. Participation in this survey is voluntary, anonymous and confidential.

Your help in this regard will be greatly appreciated.

Kind Regards

Nafisa Asif

=====

Acculturation and Sexuality: sexual knowledge, attitude and help seeking behaviour of South Asian women in Australia

Volunteers are needed for a research study on the impacts of migration on sexual knowledge, attitude and sexual help seeking behaviour of South Asian women living in Australia.

Researchers are requesting women from South Asian origin who are 18 years or above and fluent in English to participate in the study. Participation in this survey is voluntary, anonymous and confidential. The survey takes about 20 minutes to complete. To participate or know more about this study, please click on the link below

<http://www.zoomerang.com/Survey/WEB22BZF5CRHJ8/>



**FEDERATION OF AUSTRALIAN INDIAN
ASSOCIATIONS INC (FAIA)**

PO BOX 215, Wentworthville NSW 2145



17 November, 2010

Nafisa Quadri Asif
Graduate School of Sexual Health
University of Sydney

Dear Nafisa

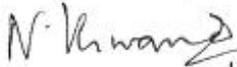
Re: Acknowledgement and support to the research titled 'Acculturation and sexuality of South Asian women in Australia'

I would like to acknowledge the importance of the above mentioned study.

On behalf of my organisation, I would like to extend my fullest support for conduction of the above mentioned study, provided appropriate Human Research Ethics Committee approval is obtained. Please arrange to forward a copy of the HREC approval letter.

I wish you all the best in your research project.

Yours sincerely


17 NOV 2010
Vish Viswanathan
PRESIDENT

Contact: Mob: 0411 104 249

BANGLADESH ASSOCIATION OF NEW SOUTH WALES INC
Reg. No: Y 2459948, ABN : 91283353348 CFN 13606

18 November, 2010

Nafisa Quadri Asif
Graduate School of Sexual Health
University of Sydney

Dear Nafisa

Re: Acknowledgement and support to the research titled 'Acculturation and Sexuality of South Asian Women in Australia'

I am writing in response to your recent letter concerning research project 'Acculturation and Sexuality of South Asian Women in Australia'.

Research on immigrant women in Australia will be very much welcomed by Asian communities. I am sure that your research findings would be a resourceful information for many ethnic minority groups living in Australia.

Bangladesh Association of NSW would like to acknowledge the importance of the above mentioned study. On behalf of my organisation, I would like to extend my fullest support for conduction of the above mentioned study, provided appropriate Human Research Ethics Committee approval is obtained. Please arrange to forward a copy of the HREC approval letter.

I wish you all the best in your research project.

Dr *kaf.~h* Das
President
Contact Tel: 0433 162753

Appendix E

Correspondence: Permission to Use Scales

 Hendrick, S <s.hendrick@ttu.edu>   Reply all | 

Sun 7/11/2010, 6:49 PM
Nafisa Quadri Asif 

Inbox

  BSAS.doc
42 KB 

Download [Save to OneDrive - The University of Sydney \(Students\)](#)

Nafisa,

You have our full permission to use the Brief Sexual Attitudes Scale in your research. I have attached a copy for your use. Your research sounds VERY interesting, and we would like to hear about your results when your research is completed, but of course that is not required. Best good fortune in your work.

Susan Hendrick

Susan S. Hendrick, Ph.D.
Paul Whitfield Horn Professor and Chair
Department of Psychology
Texas Tech University
Lubbock, TX 79409-2051

...

 margaret stephensopn <stephensonloiodice@yahoo.com>   Reply all | 

Sun 12/09/2010, 6:24 PM
Nafisa Quadri Asif 

Inbox

You forwarded this message on 13/09/2010 12:17 AM

Dear Ms. Asif,

You are welcome to use the Stephenson Multigroup Acculturation Scale (SMAS) for your research. If you should have any questions about the scale, please feel free to contact me at this email address.

I am happy that we have finally connected. I tried to contact you at the email address and telephone number you provided, but was unsuccessful.

Good Luck with your work.

Margaret Stephenson

Appendix F

Results

Table 3.1
Summary of Survey Data Completion by the Participants

Survey data completion	N (%)
Total number of participants took part in the survey	194
Total number of participants took part in the online survey	175 (90%)
Total number of participants took part in the pen-paper survey	19 (10%)
Total number of participants completed section 1 (socio-demographic information)	160 (82%)
Total number of participants completed section 2 (sexual knowledge)	169 (87%)
Total number of participants completed section 3 (sexual attitudes)	182 (94%)
Total number of participants completed section 4 (help-seeking attitudes and behaviour)	182 (94%)
Total number of participants completed section 5 (cancer screening)	182 (94%)
Total number of participants completed section 6 (acculturation)	181 (93%)

Table 3.2
Examination of Continuous Variables for Normality Distribution

Variable	Skewness (SE)	Kurtosis (SE)	K-S test (Static)	S-W test (Static)
Age (n=190)	-.40 (.33)	-1.15 (.66)	.33**	.79**
Length of residency (n=160)	.44 (.33)	-1.16 (.66)	.17**	.91**
Sexual Knowledge				
Sexual response cycle (n=190)	-.12(.17)	-.72(.35)	.10**	.97**
Reproductive health (n=190)	-.42(.17)	-.83(.35)	.18**	.88**
Sexually transmitted infections and diseases (STI/STDs) (n=190)	-.14(.17)	-.10(.35)	.18**	.90**

Sexual Attitude	Permissiveness (n=187)	-.59(.17)	-.50(.35)	.13**	.91**
	Birth control (n=187)	1.48(.17)	1.88(.35)	.28**	.76**
	Communion (n=187)	.83(.17)	1.25(.35)	.09**	.93**
	Instrumentality (n=187)	.23(.17)	-.48(.35)	.09**	.96**
Acculturation	Ethnic Society Immersion (ESI) (n=186)	-.53 (.33)	.41(.66)	.15**	.96
	Dominant Society Immersion (DSI) (n=186)	-.30 (.33)	.51(.66)	.12*	.96

P<.05*, *P*<.005**

Table 4.32
Bivariate Analysis between Ethnicity and Length of Residency (N=157)

Acculturation domains	Ethnicity	<i>N</i>	Mean Rank	Chi-square	<i>P</i>
Dominant Society Immersion(DSI)	India	38	80.28	19.7	<.001
	Bangladesh	42	54.19		
	Sri Lanka	50	95.62		
	Pakistan	27	85.02		
	Total	157			

A Kruskal-Wallis test was conducted to evaluate differences among the four different ethnic groups (Indian, Bangladeshi, Sri Lankan and Pakistani) based on length of residency. Table 4.32 reports the descriptive statistics and the summary of the result of the Kruskal Wallis tests. Among the participants, Sri Lankan women spent the highest amount of time in Australia, followed by Pakistani, Indian and Bangladeshi. The test was significant: $\chi^2(3, 157) = 19.7, p < .001$ indicating that participants from different ethnic groups varied significant in their length of residency.

Table 4.33

Descriptive Statistics for Sexual Knowledge Questions (31 items)

Items	True		False		Do not know	
	n	%	n	%	n	%
1. Men have higher levels of sexual desire than women.	118	63.4	55	29.6	13	7
2. After a certain age (say past 55), both men and women experience a loss of interest in sexuality.	92	48.9	68	36.2	28	14.9
3. There is a natural decline in sexual drive in all post-menopausal women.	106	55.8	61	32.1	23	12.1
4. Heavy consumption of cigarette and/or alcohol may reduce sexual desire.	129	68.6	25	13.3	34	18.1
5. The presence of hymen (a thin membrane that surrounds the opening to a woman's vagina) is an indicator that a woman is virgin.	69	36.9	106	56.7	12	6.4
6. Vaginal discharge is always a noticeable sign for sexual arousal.	53	28.2	79	42	56	29.8
7. Sex is a failure if there is no orgasm.	77	41.2	84	44.9	26	13.9
8. 'Vaginal orgasms' are better than 'clitoral orgasms'.	69	36.3	67	35.3	54	28.4
9. Women take longer to reach orgasm than men.	126	67	46	24.5	16	8.5
10. One can never have an orgasm from oral sex.	24	12.7	119	63	46	24.3
11. The larger the penis, the greater the chance of female orgasm.	45	23.9	115	61.2	28	14.9
12. A circumcised penis decreases a woman's ability to experience orgasm.	39	20.7	114	60.6	35	18.6
13. Sexual intercourse during pregnancy is harmful for women.	36	19.4	134	72	16	8.6
14. Women can become pregnant the first time they have sexual intercourse.	120	64.5	53	28.5	13	7

15. Women cannot become pregnant during menstrual period.	98	51.6	73	38.4	19	10
16. Women will not become pregnant if men 'pulls out' (withdrawal method) before ejaculation.	110	58.5	60	31.9	18	9.6
17. A man can get rid of all his sperm by ejaculating three times in a row and thus can't get anyone pregnant.	26	13.9	123	65.8	38	20.3
18. Passing urine or douching (using water or a medicated solution to clean the vagina) immediately after sexual intercourse washes out sperm and prevents pregnancy.	21	11.1	137	72.9	30	16
19. Oral sex is absolutely safe, can't cause any sexually transmitted diseases.	32	17.1	131	70.1	24	12.8
20. Condoms can't be used while giving or receiving oral sex	74	39.4	61	32.4	53	28.2
21. Masturbation (sexual stimulation of a person's genitals, usually to the point of orgasm) is an unhealthy practise.	58	31	95	50.8	34	18.2
22. Most women do not masturbate.	65	34.6	69	36.7	54	28.7
23. Premature ejaculation (a condition in which a man ejaculates earlier than he or his partner would like him to) is typically a younger man's problem.	34	18	106	56.1	49	25.9
24. Viagra and other similar medications are very effective to treat erectile dysfunction (inability to develop or maintain an erection of the penis sufficient for satisfactory sexual performance) in men.	67	35.8	59	31.6	61	32.6
25. Condom can prevent from getting or passing along sexually transmitted diseases (STDs).	168	88.4	10	5.3	12	6.3
26. Treatment of venereal diseases (VD) is best when both partners are treated at the same time.	101	53.4	30	15.9	58	30.7

27. Chlamydia and gonorrhoea (sexually transmitted bacteria that affect both men and women) are no big deal and will go away on their own.	15	8.1	115	62.2	55	29.7
28. AIDS (Acquired immune deficiency syndrome) is a sexually transmitted disease caused by bacteria.	115	61.2	46	24.5	27	14.4
29. One can catch Human Papillomavirus (HPV) from a toilet seat or from sitting where someone else who has HPV has been sitting.	27	14.3	99	52.4	63	33.3
30. Genital warts (small, soft, lumps in the genital area caused by HPV) if left untreated can cause cervical cancer.	101	54.3	10	5.4	75	40.3
31. Unlike genital warts, genital herpes (painful genital sores) is not contagious and therefore no need to avoid sexual intercourse during an active infection.	35	20.7	52	30.8	82	48.5

Note: Correct responses are presented in BOLD

Table 4.34

Descriptive Statistics of Individual items of Brief Sexual Attitudes Scale (BSAS)

Sexual Attitude Items	Minimum	Maximum	Mean	Standard Deviation
1. I do not need to be committed to a person to have sex with him/her. (n=186)	1.00	5.00	3.59	1.46
2. Casual sex is acceptable. (n=185)	1.00	5.00	3.75	1.34
3. I would like to have sex with many partners. (n=185)	1.00	5.00	4.35	1.05
4. One-night stands are sometimes very enjoyable. (n=186)	1.00	5.00	3.56	1.37
5. It is okay to have ongoing sexual relationships with more than one person at a time. (n=186)	1.00	5.00	4.43	1.05
6. Sex as a simple exchange of favours is okay if both people agree to it. (n=184)	1.00	5.00	3.50	1.39
7. The best sex is with no strings attached. (n=187)	1.00	5.00	3.60	1.37
8. Life would have fewer problems if people could have sex more freely. (n=183)	1.00	5.00	4.00	1.30
9. Is it possible to enjoy sex with a person and not like that person very much. (n=184)	1.00	5.00	3.58	1.31
10. It is okay for sex to be just good physical release. (n=185)	1.00	5.00	3.11	1.37
11. Birth control is part of responsible sexuality. (n=186)	1.00	5.00	1.58	.96
12. A woman should share responsibility for birth control. (n=186)	1.00	5.00	1.67	.97
13. A man should share responsibility for birth control. (n=185)	1.00	5.00	1.68	.95
14. Sex is the closest form of communication between two people. (n=185)	1.00	5.00	2.32	1.10

15. A sexual encounter between two people deeply in love is the ultimate human interaction. (n=184)	1.00	5.00	1.95	1.07
16. At its best, sex seems to be the merging of two souls. (n=185)	1.00	5.00	2.36	1.13
17. Sex is a very important part of life. (n=184)	1.00	5.00	1.84	.99
18. Sex is usually an intensive, almost overwhelming experience. (n=186)	1.00	5.00	2.88	1.32
19. Sex is best when you let yourself go and focus on your own pleasure. (n=184)	1.00	5.00	2.68	1.29
20. Sex is primarily the taking of pleasure from another person. (n=185)	1.00	5.00	3.00	1.33
21. The main purpose of sex is to enjoy oneself. (n=185)	1.00	5.00	3.07	1.27
22. Sex is primarily physical. (n=187)	1.00	5.00	2.85	1.21
23. Sex is primarily a body function, like eating. (n=183)	1.00	5.00	2.97	1.26

Table 4.35
Results of Multivariate Analysis for Pap test as Recommended with in Target Age Group (≥ 18 years)

Predictors	OR	CI	P
Age	1.21	0.24-6.14	.814
DSI	2.20	0.48-9.92	.303
ESI	0.36	0.06-1.94	.239
Length of residency	1.90	0.48-7.51	.359

Model: $\chi^2 (4) = 3.32, p = .506$; Nagel Kerke $R^2 = 0.063$

Table 4.36

Results of Multivariate Analysis for CBE as Recommended with in Target Age Group (≥ 40 years)

Predictors	OR	CI	P
DSI	1.77	0.21-14.93	.59
ESI	1.23	0.08- 17.81	.87
Age	7.50	0.93-60.45	.05

Model: $\chi^2 (3) = 5.19, p = .158$; Nagel Kerke $R^2 = 0.198$

Table 4.37

Comparison of Sexual Attitude Mean Scores between South Asian Women and Men (Indian men) in Australia

Sexual attitudes	Mean Scores	
	Current Study (South Asian women) (n=194)	Ramanathan (2013) Study (Indian Men) (n=278)
Permissiveness	3.74	3.07
Birth control	1.64	1.88
Communion	2.27	1.99
Instrumentality	2.90	2.86

Note: The higher the score, the lower the endorsement of the scale.

Table 4.38

Descriptive Statistics for the Stephenson Multigroup Acculturation Scale (SMAS)

Items	False n (%)	Partly False n (%)	Partly True n (%)	True n (%)
1. I am informed about current affairs in Australia. (n=185)	16 (8.6)	9 (4.9)	52 (28.1)	108 (58.4)
2. I speak my native language with my friends and acquaintances from my country of origin. (n=185)	18 (9.7)	14 (7.6)	55 (29.7)	98 (53.0)
3. I have never learned to speak the language of my native country. (n=184)	116 (63.0)	22 (12.0)	19 (10.3)	27 (14.7)
4. I feel totally confident with (Anglo) Australian people. (n=184)	21(11.4)	13 (7.1)	51 (27.7)	99 (53.8)
5. I eat traditional food from my native culture. (n=186)	0 (0)	19 (10.2)	49 (26.3)	118 (63.4)
6. I have many (Anglo) Australian acquaintances. (n=184)	25 (13.7)	17 (9.3)	48 (26.2)	93 (50.8)
7. I feel comfortable speaking my native language. (n=184)	10 (5.4)	17 (9.2)	55 (29.9)	102 (55.4)
8. I am informed about current affairs in my native country. (n=186)	20 (10.8)	49 (26.3)	63 (33.9)	54 (29.0)
9. I know how to read and write in my native language. (n=185)	34 (18.4)	18 (9.7)	43 (23.2)	90 (48.6)
10. I feel at home in Australia. (n=184)	4 (2.2)	16 (8.7)	47 (25.5)	117 (63.6)
11. I attend social functions with people from my native country. (n=184)	1 (0.5)	17 (9.2)	77 (41.8)	89 (48.4)
12. I feel accepted by (Anglo) Australian. (n=185)	81 (9.7)	21 (11.4)	51 (27.6)	95 (51.4)
13. I speak my native language at home. (n=183)	11 (6.0)	48 (26.2)	40 (21.9)	84 (45.9)
14. I regularly read magazines of my ethnic group. (n=184)	76 (41.3)	27 (14.7)	41 (22.3)	40 (21.7)
15. I know how to speak my native language. (n=184)	5 (2.7)	21 (11.4)	39 (21.2)	119 (64.7)
16. I know how to prepare (Anglo) Australian foods. (n=183)	12 (6.6)	15 (8.2)	53 (29.0)	103 (56.3)

17. I am familiar with the history of my native country. (n=185)	19 (10.3)	40 (21.6)	40 (21.6)	86 (46.5)
18. I regularly read an Australian newspaper. (n=184)	20 (10.9)	28 (15.2)	36 (19.6)	100 (54.3)
19. I like to listen to music of my ethnic group. (n=183)	15 (8.2)	36 (19.7)	47 (25.7)	85 (46.4)
20. I like to speak my native language. (n=183)	7 (3.6)	38 (19.5)	32 (16.4)	106 (54.4)
21. I speak English at home. (n=183)	37 (20.2)	27 (14.8)	78 (42.6)	41 (22.4)
22. I speak my native language with my spouse or partner. (n=181)	19 (10.5)	12 (6.6)	58 (32.0)	92 (50.8)
23. When I pray, I use my native language. (n=184)	57 (31.0)	13 (7.1)	48 (26.1)	66 (35.9)
24. I stay in close contact with my family members and relatives in my native country. (n=183)	2 (1.1)	54 (29.5)	48 (26.2)	79 (43.2)
25. I am familiar with important people in Australian history. (n=186)	20 (10.8)	17 (9.1)	37 (19.9)	112 (60.2)
26. I think in English. (n=185)	42 (22.7)	21 (11.4)	69 (37.3)	53 (28.6)
27. I speak English with my spouse or partner. (n=183)	57 (31.1)	22 (12.0)	53 (29.0)	51 (27.9)
28. I like to eat Australian foods. (n=184)	26 (14.1)	10 (5.4)	52 (28.3)	96 (52.2)

Additional results

Additional results on sexual attitudes and sexual knowledge

A series of Spearman's rank correlation tests was conducted to examine the relationships between sexual attitude scores and sexual knowledge scores. Results indicated that, with greater knowledge of sexual response cycle and reproductive health, participants tended to become more liberal (less conservative) in their attitudes towards permissiveness, birth control, communion and instrumentality. Spearman's rank correlation showed that sexual

response cycle knowledge was negatively correlated with permissiveness ($r_s = -.46, p < .001$), birth control ($r_s = -.36, p < .001$), communion ($r_s = -.21, p < .01$), and instrumentality ($r_s = -.42, p < .001$). Similarly, reproductive health knowledge was negatively correlated with permissiveness ($r_s = -.36, p < .001$), birth control ($r_s = -.44, p < .001$), communion ($r_s = -.20, p < .01$), and instrumentality ($r_s = -.40, p < .001$).

Results also indicated that greater knowledge of STI/STDs was associated with more liberal attitudes towards birth control, communion and instrumentality. Spearman's rank correlation test indicated that STI/STDs knowledge was negatively correlated with birth control ($r_s = -.44, p < .001$), communion ($r_s = -.38, p < .001$), and instrumentality ($r_s = -.28, p < .001$). However, knowledge of STI/STDs was not significantly related to attitudes towards permissiveness, Table 4.39 presents the results of bivariate analyses of scores of sexual knowledge and scores of BSAS.

Table 4.39
Bivariate Relationship between Sexual Knowledge Scores and BSAS Scores

Sexual Knowledge	Permissiveness		Birth control		Communion		Instrumentality	
	r_s	p	r_s	p	r_s	p	r_s	p
Sexual response cycle	-.46	<.001	-.36	<.001	-.21	.004	-.42	<.001
Reproductive Health	-.36	<.001	-.44	<.001	-.20	.005	-.40	<.001
STI/STDs	-.13	.06	-.44	<.001	-.38	<.001	-.28	<.001

Additional results on Breast and Cervical cancer screening

Binary logistic regression analysis was conducted to identify predictors of breast and cervical cancer screening behaviour. Acculturation measures (DSI and ESI) and socio-demographic variables which were found significant in the bivariate analysis were entered into the multivariate analysis as independent variables. Sexual knowledge variables (knowledge on Sexual Response Cycle, Reproductive health and STI/STDs) and sexual attitude variables (Permissiveness, Communion, Birth Control and Instrumentality) were also entered into the analysis to examine whether these variables can predict breast and cervical cancer screening behaviour. Results showed that the models for predicting the likelihood of having had a CBE or Pap test or Mammogram were not significant.

Table 4.39
Additional Results of Multivariate Analysis for ever having had a Pap test

Predictors	OR	CI	P
Age	12.43	3.67-42.11	.000
DSI	5.75	1.18-27.83	.030
Reproductive health knowledge	1.98	1.14-3.44	.015

Model: $\chi^2(8) = 6.22, p = .622$; Nagel Kerke $R^2 = 0.457$

Table 4.40
Additional Results of Multivariate Analysis for ever having had a CBE

Predictors	OR	CI	P
Age	11.43	3.21-40.71	.000
Reproductive health knowledge	1.78	1.09-2.92	.020
STD/STIs knowledge	1.69	1.03-2.76	.036

Model: $\chi^2(8) = 9.48, p = .303$; Nagel Kerke $R^2 = 0.440$

Table 4.41

Additional Results of Multivariate Analysis for ever having had a Mammogram

Predictors	OR	CI	P
Age	45.01	9.32-217.28	.000
Reproductive health knowledge	1.86	1.06-3.27	.031

Model: $\chi^2(8) = 8.43, p = .392$; Nagelkerke $R^2 = 0.523$