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**What's God got to do with Sex?**  
**Exploring the Relationship Between**  
**Patterns of Spiritual Engagement and the**  
**Sexual Health Activities of Samoan Youth**

**A thesis presented in partial fulfilment**  
**of the requirements for the degree of**

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# ABSTRACT

## **What's God got to do with Sex? Exploring the relationship between Spiritual engagement and the sexual health activities of Samoan youth**

Improving the health and social wellbeing of Pacific youth is a key priority for the New Zealand Government. When the Pacific youth population's sexual health is compared with that of other ethnic groups in New Zealand there are clear disparities. At the same time, spiritual engagement is frequently noted as protecting young people from engaging in health-risk taking behaviours.

### **Objectives:**

This study determines whether a relationship exists between patterns of spiritual engagement and the sexual health activities of Samoan attending secondary schools in New Zealand. Does going to church or rating spiritual beliefs as important influence the sexual health activities of Samoan youth?

### **Method:**

This research analyses data from 'Youth 2000', a youth health and wellbeing survey conducted in 2001. The survey was conducted with approximately 10,000 New Zealand secondary school students which included 646 Samoan and 5219 New Zealand Europeans. Nine sexual health activities were explored. Data relating to spiritual engagement and the sexual health activities of Samoan and New Zealand European students were extracted from the survey, measured and compared.

### **Results:**

A significant proportion of Samoan youth have not had sexual intercourse. Just under a third of Samoan students (32.1%) have had sexual intercourse, with the average age of first sexual intercourse around 14 years. Findings reveal that the spiritual engagement variables: church attendance and the importance of spiritual beliefs have mixed influences on the different sexual health activities of Samoan youth.

### **Conclusions:**

This study reinforces the central importance of spiritual engagement in the lives of many Samoan secondary school students. Government policies and interventions require an understanding of key health behaviours and their related risk and protective factors specific to New Zealand youth.



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## Chapter 1: INTRODUCTION

It is often noted that Pacific peoples attend church regularly (Ministry of Health, 2007). Given that most faith communities have strong teachings about sexual behaviour and marriage (Meier, 2003), it would make logical sense that Pacific youth would therefore have lower rates of sexual activity. This study aims to explore the nature of the relationship between patterns of spiritual engagement and sexual health activities of Samoan youth attending secondary schools in New Zealand. This chapter outlines the key research questions pertinent to the study; provides a brief explanation as to the significance of the study towards public health policy and outlines the material covered throughout the following chapters.

This study attempts to answer the following key research questions:

- 1) What are the patterns of spiritual engagement in Samoan youth that attend New Zealand secondary schools?
- 2) What are the patterns of sexual health activities of Samoan youth that attend New Zealand secondary schools?
- 3) Is there an association between patterns of spiritual engagement and sexual health activities for Samoan youth attending New Zealand secondary schools?
- 4) Do Samoan and New Zealand European youth (hereafter referred to as NZ European) patterns of spiritual engagement and sexual health activities differ, and, if so, how?

### **Significance for health policy**

Improving the health and social wellbeing of Pacific youth is a key government priority (Ministry of Health, 2000, 2002a, 2002b, 2003, 2008; Ministry of Pacific Island Affairs, 2003; Ministry of Social Development, 2005; Ministry of Youth Affairs, Ministry of Health, & Te Puni Kokiri, 1998). It is widely recognised that the Pacific population experience a number of socio-economic and health disparities compared to other ethnic groups living in New Zealand (Ministry of Health, 2003, 2008; Ministry of Pacific Island Affairs, 2003; Ministry of Social Development, 2005). These disparities are significant in that they create and maintain inter-generational social and economic disadvantage.

Sexual health has been recognised as a key issue according to the New Zealand Health Strategy (Ministry of Health, 2000). It features in the 61 objectives set where the aim is to improve sexual and reproductive health. Three of the priorities in the Pacific Health and Disability Action Plan (Ministry of Health, 2002b) identify the need to: improve the health of Pacific

children and youth; minimise the harm caused by STDs, HIV, AIDS and unplanned pregnancies; and improve the Pacific primary health care and preventative services. Innovative and effective strategies are being sought to improve the sexual and reproductive health status of New Zealand citizens (Ministry of Health, 2001, 2003). Evidence suggests that religion (variously defined) plays a significant role in sexual abstinence and delaying coital debut (Kirby, Lepore, & Ryan, 2005; Lammers, Ireland, Resnick, & Blum, 2000; Paul, Fitzjohn, Herbison, & Dickson, 2000a). Given that high proportions of Pacific peoples attend and affiliate with a Christian churches<sup>1</sup> (Statistics New Zealand, 2008), there is a strong argument for exploring the role of the church and spirituality in influencing sexual behaviours and attitudes of Pacific Youth.

## **Outline of thesis**

### **Literature Review**

The results from the literature review are detailed in Chapter Two. The literature review is structured into five distinct sections: 1) an outline of the literature search methods; 2) a background of Pacific peoples (including Pacific youth) in New Zealand; 3) the sexual health status of young Pacific peoples in New Zealand; 4) an outline of the role of spirituality and religion in the lives of young people; and 5) a review of the studies that have explored the associations between spiritual engagement and sexual health activities of young peoples.

### **Rationale for the Study**

Chapter Three summarises the academic and policy rationale for this research. It also outlines the significance of the researcher's personal biography in respect of the current study.

### **Research Methods**

Chapter Four discusses the research methods used in this study. Central to this study is the 'Youth 2000' survey material. 'Youth 2000' is the first nationally representative youth health and wellbeing survey of New Zealand secondary school students undertaken in 2001 (Adolescent Health Research Group, 2003b).

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<sup>1</sup> There is a distinction between being affiliated with a denomination (Church) and church attendance. Affiliation refers to identifying membership with a denomination; however, one may not attend church on a regular basis. There are a range of measurements of church attendance. This distinction is important for the discussions to follow.

This chapter begins with a description of the 'Youth 2000' survey design. It then provides an outline of the research methods used to answer the research questions. It concludes with an outline of the strengths and weaknesses of the research methods.

## **Results**

Chapter 5 presents the research findings. These are reported in four sections. Firstly a demographic profile of the Samoan and NZ European students is provided. Secondly, the responses to spiritual engagement questions are reported. Thirdly, the responses to three pre-coital questions (age of first kissing experience; age of first sexual touching experience and the proportions of students who have never had sexual intercourse) and the results of association tests are given. The tests of association explore whether spiritual engagement is associated with sexual health activities for Samoan and NZ European students. The final section profiles the students who report post-coital activities (students who have had sexual intercourse) which include: the proportions of students who have had sex; use of condom at first sexual intercourse; use of contraception when having sex; number of sexual partners; pregnancy and the reporting of sexually transmitted infections (STIs). The findings from the tests of associations are also provided.

## **Discussion**

The final chapter (6) reviews the intention of this study and the four research questions posed. The findings from the study are discussed and the implications for public health policy are considered. This chapter concludes with an outline of future research topics that can build on sexual and reproductive health information for Pacific communities.

## **Chapter 2: LITERATURE REVIEW**

### **Chapter Outline**

This chapter provides a review of collated information on adolescent spiritual engagement and sexual health activities and where possible, the correlation between the two. This review is structured into five sections.

This chapter (2.1) begins with an overview of the methods used to source the literature.

Section 2.2 describes the study population for this study. An overview on the different classifications used to define youth and/or adolescence is provided in part a. Part b explores the measures used to record Pacific ethnicities. Part c provides an overview of the demographic characteristics of Pacific peoples in New Zealand and Part d explores the profile of Samoan youth in New Zealand. This section concludes with an outline of the health status of Pacific youth and the calls for more relevant information to assist in policy formation.

Section 2.3 summarises the literature relating to adolescent sexual and reproductive health. Within this section various terms relating to sexual health are identified and explained. The current measures used to document sexual health activities are outlined. A discussion of sexual protective and sexual risk factors is included. The statistics on the sexual health status of Samoan, Pacific and New Zealand young people are presented. The consequences of teenage pregnancy are also explored and discussed within the context of public policy.

Section 2.4 summarises the pertinent issues relating to adolescent spiritual engagement. It begins with an outline of the various definitions of spiritual engagement. Patterns of spiritual engagement and religious practices of Samoan, Pacific and NZ European populations are reported. A summary of how spiritual engagement is framed and understood within Samoan and Pacific cultures is provided. The protective role that faith communities play in the lives of adolescents is discussed. This section concludes with a discussion of the way in which religion and spirituality feature in New Zealand government policy and in health interventions.

The final section (2.5) examines studies that have explored the associations between spiritual engagement and sexual health risk-taking activities. This section begins with a discussion of the various theories that seek to explain why there are relationships between spiritual engagement and sexual health activities. The way in which spiritual engagement and sexual health activity have been defined and measured is addressed.

## **2.1) Search Methods**

### **Study Selection**

The literature review involved searching the Massey University and University of Auckland (UoA) databases: Medline, Cochrane Library, Anthropology plus and supplementing these with the more publicly accessible on-line databases such as SearchNZ and others offered by Google Scholar. The search was refined to identify material relating to the spiritual beliefs and health behaviours of Pacific youth in New Zealand.

Electronic searches were supplemented by searched paper indexes, using references listed in bibliographies and snowballing from cited references. Journal articles (including electronic databases), technical reports, policy manuals and unpublished reports were also accessed. Searches were limited to material in the English language.

### **Specialist Libraries**

Various government departments have websites which include searchable databases and/or libraries that detail publications and reports that were relevant to this subject. The following websites were accessed:

- Ministry of Health (<http://www.moh.govt.nz>)
- Counties Manukau District Health Board (<http://www.sah.co.nz>)
- Statistics New Zealand (<http://www.stats.govt.nz>)

The databases and libraries accessed provided a wide range of information on policies that affect Pacific young people; Pacific population demographics and health status; issues on sexual health and spirituality.

### **Grey Literature**

Grey literature refers to reports not widely available to the public. Professional and informal networks were utilised to access these reports that were either newly published or not accessible either through library or electronic databases as this study was being carried out.

### **Key Search Terms Used**

The terms and phrases (and combinations of these) used in the search included but were not limited to: Pacific; youth; sexual health; spiritual engagement; church; and spiritual beliefs. A full list of search terms used is located in Appendix 1. Using these search terms a number of relevant articles were found. There were varying degrees of overlap between the databases. A

full list of titles and/or abstracts was obtained from each search and those articles deemed relevant were accessed and viewed.

### **Limitations**

There were a number of limitations in this literature review. Although this study was concerned with exploring the relationship between spiritual engagement and the sexual activities for Samoan young people, the material accessed was limited to those published in the English language. This was due to the; limited availability of Samoan publications and the researcher's inability to accurately translate the Samoan material within the timeframe necessary for this study. Within the Pacific countries, literature on Pacific peoples and their health is frequently unpublished and instead stored in local libraries and Government departments. The researcher was unable to access these.

A further limitation lay in the shortage of local New Zealand material that explored spiritual engagement and the sexual activities. A significant number of studies have been undertaken in the United States of America (US) and are reported here for the purposes of cross-national comparison. While the material from the US is not directly comparable, it provides a summary of many of the studies from which the questions, at the centre of this study are based.

## **2.2) Pacific youth**

### **a) 'Youth' and 'Adolescence' defined**

The terms 'youth'; 'teenager'; 'adolescents'; 'young people'; are often used interchangeably and defined by either age or developmental milestones (Ministry of Health, 2002c; WHO, 2008). In the international community, the World Health Organisation defines 'adolescence' as the period of life between 10-19 years, 'youth' aged between 15- 24 years and 'young people' aged between 10-24 years (WHO, 2008).<sup>2</sup> In a report entitled 'Youth Health – A Guide to Action', the Ministry of Health, recognises that the term 'youth' describes both the whole group and various sub-groups in ages ranging from around 10 years to the mid-twenties (Ministry of Health, 2002c). However, it is acknowledged that the focus of most youth strategies and plans are centred on those aged between 12 and 24 years (Ministry of Health, 2002c, 2008; Ministry of Pacific Island Affairs, 2003; Ministry of Social Development, 2005; Ministry of Youth Affairs, 2002).

Although the age criteria may provide conceptual challenges in understanding this group of young people, Blum (1998) contends that the term 'adolescence' refers to the developmental period between childhood and adulthood. The timing and duration of these developmental stages varies across individuals, communities and cultures. A common physical and cultural milestone that occurs within adolescence is the onset of puberty: when young people develop their reproductive capacity (Ministry of Health, 2002a).

In a study with Samoan women, Tupuola (1998) identified that many Samoan young women (of traditional fa'aSamoa backgrounds) were critical of western theories that suggested there were universal stages of adolescent development. Many Samoan young women did not identify with posited stages that suggested adolescents grow away from their families, have boyfriends and become individuals (Tupuola, 2000). Similarly, findings from Anae, Fuamatu, Lima, Mariner, Park and Sualii-Sauni (2000) identify that developmental milestones and increasing responsibilities were key markers of reaching adulthood.

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<sup>2</sup> WHO's definition of adolescents as those between the age of 10-19 years is the definition that was adopted at the South Asia conference on adolescents in 1998, and followed by most other UN Organisations (WHO, 2008).

They report, as understood in Samoan culture, that the onset of sexual acts and/or marriage are defining markers from changing one's status from childhood to adulthood, *"The term 'children' in Samoan society does not conform to strict age or psychological development categories offered by western child development discourse. Rather, a son or daughter continues to be considered a 'child' in terms of potentially requiring parental guidance and discipline, by his/her parents, right throughout the parent's and child's lifetime. A 'child' in this sense may take on different statuses and attendant responsibilities as they get older. The oft-quoted Samoan cultural precepts and values 'fa'aaloalo' (respect) and tautua (service) provides the framework for this understanding of the group 'children'. The Samoan definition of childhood, in line with the explanation for 'children' above, is usually differentiated from adulthood by marriage, or more particularly, engaging in sexual relations for females, and engaging in political affairs for males"* (Anae et al., 2000, p. vi)

Youth (or adolescence) is a unique period in life where significant biological, personal and social changes occur (Davis & Lay-Yee, 1999; Ministry of Health, 2008). Evidence suggests that it is between the ages of 12 and 24 when the chances of being involved in risk-taking behaviour are high (especially amongst young males) (Ministry of Health, 2002c, 2008; Davis R, Lay-Yee, 1999). The negative consequences from these actions can be lifelong (Ministry of Health, 2002c). As noted in a number of studies, (Kann L, Kinchen SA, Williams BI, Ross JG, Lowry R, Grunbaum JA, Kolbe LJ 2000) health-risk behaviours which contribute to the leading causes of death and morbidity among youth and adults are often established during youth and extend into adulthood. These behaviours are interrelated and often preventable.

## **b) Ethnicity defined**

It is important to point out that the methods used in recording ethnicity in New Zealand have been widely debated.<sup>3</sup> The official New Zealand census ethnicity question has undergone a number of changes in wording, with a diverse set of responses to the various census questions (Bedford & Didham, 2001).<sup>4</sup> One of the challenges with recording ethnicity is the self-identification method used, which may be independent of ancestry or nationality (Ministry of Health, 2008). As noted by Bedford & Didham (2001), "ethnicity is not fixed throughout a persons life – it can change at any time and an individual may identify equally, or to differing degrees, with several ethnicities" (Bedford & Didham, 2001, p. 22).

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<sup>3</sup> Statistics New Zealand administers the national census (Statistics Act 1975) and is the country's major source of official statistics. The census, taken every five years provides a 'snapshot' of New Zealand society at that point in time (Statistics New Zealand, 2008b).

<sup>4</sup> There is considerable literature on the concept of ethnicity and its measurement in New Zealand. Further info can found in (Bedford & Didham, 2001).

Statistics such as the NZ national census play an important part in the process of creating the identity of New Zealand populations (Macpherson, 1991, 1996, 2001) and play a significant role in the political and public discourses about society and economy. Health interventions for sub-groups such as ethnic groups are based on the responses to the census ethnicity question. As noted by Bedford and Didham (2001) those who use census data, such as policy makers face some challenges in terms of identifying what they consider to be coherent, meaningful sub-groups within the national population. It is important to acknowledge that groups defined on the basis of their ethnic affiliation in the NZ national census have quite diverse and complex origins in terms of their ancestry or descent (Bedford & Didham, 2001; Ministry of Health, 2008). For example, some people who have migrated from Samoa may identify themselves as New Zealanders in the Census because they have lived here half their lives.

The term 'Pacific peoples' is often used to describe the diverse cultures of peoples from Polynesia, Melanesia and Micronesia (Macpherson, 2001; Ministry of Health, 2008c). Pacific peoples share some important commonalities and experiences. However, there are also significant differences between each Pacific group, such as language and cultural practices. Thus treating the Pacific as if they were a homogenous group would be a disadvantage (Bedford & Didham, 2001; Macpherson, 1996). Although Pacific communities are often referred to as a single body of peoples, Pacific communities can be defined in a number of ways (Bedford & Didham, 2001; Health Research Council, 2003; Macpherson, 1996). That is,

*"There is no generic 'Pacific community' but rather Pacific peoples who align themselves variously, and at different times, along ethnic, geographical, religious, family, school, gender, age, island-born/New Zealand-born, occupational lines, or a combination of these"* (M. Anae, Coxon, Mara, Wendt-Samu, & Finau, 2001, p. 7)

Several New Zealand studies have highlighted the tensions with regards to Pacific peoples and their changing sense of self-identity (Anae et al., 2000; Fa'alau & Jensen, 2006; Tiatia, 1998). These tensions have partly been explained as a result of assimilation and acculturation of migrant groups to the dominant culture. Acculturation is seen as "the process of acquiring, adapting to or adopting a second culture, whereby two distinct cultural groups have continuous first-hand contact, resulting in subsequent changes in original cultural patterns of either or both groups" (Tiatia, 2008, p. 5).

### **c) A profile of Pacific peoples in New Zealand**

Over the years, Pacific peoples have changed from being a predominantly migrant group to a largely New Zealand-born population (Macpherson, 2001; Ministry of Health, 2008c). Now, almost 60% of Pacific peoples are born in New Zealand (Statistics New Zealand, 2008). This sub-group has been extensively written about by several authors who detail the different experiences between New Zealand-born Pacific Islanders and the Pacific-born generation in New Zealand (Anae et al., 2000; Bedford & Didham, 2001; Fa'alau & Jensen, 2006; Ministry of Pacific Island Affairs & Statistics New Zealand, 2002). Young people born of Pacific-born parents largely constitute this sub-group. There are very significant differences between the histories and biographies of the parents and their children (Macpherson, 1991, 1996). Dr Colin Tukuitonga, the Chief Executive Officer of the Ministry of Pacific Island Affairs (MPIA) reasserts this reality,

*'The majority of the children and students are born in New Zealand and many do not affiliate with the traditional and social and cultural values of their parents. Inter-marriage and cultural assimilation has produced a sub-culture of importance needing specific consideration for healthcare provision'* (Tukuitonga, 1999, p. 6).

As a result of the assimilation and acculturation process there has been marked changes in family dynamics of Pacific peoples. Studies by Macpherson (1991, 1996) have shown that Pacific families have different forms, characteristics and social aspirations as shown in studies with Samoan families. A report by the Children Young Persons and their Families Service (1997) identifies four types of Pacific families living in the New Zealand: Traditional; Bicultural; Assimilated and Generation gap. These four family types represent a range of cultural interactions for Pacific parents and children born of Pacific parents.<sup>5</sup>

The Pacific population in New Zealand is the most youthful of all ethnic groups in New Zealand. In 2006, 48,411 (8.9%) of New Zealanders aged 15-24 years were Pacific (Ministry of Health, 2008). Currently, one in ten children in New Zealand is of Pacific ethnicity. The Pacific ethnic group had the highest proportion of children (people aged 0 to 14 years) of all of the major ethnic groups, at 37.7 percent. In 2006 the median age for Pacific peoples was 21.1 years compared with the overall New Zealand population median age of 35.9 years (Statistics New Zealand, 2008). By 2051 it is predicted that one in five children will be of Pacific ethnicity (Statistics New Zealand, 1996).

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<sup>5</sup> Further description of these family types is provided in Appendix 2.

In the 2006 New Zealand Census there were 4,027,907 people living in New Zealand. Of this, 6.9 percent (265,974) of the total population identified themselves as Pacific people (Statistics New Zealand, 2008). Pacific peoples make up a small but growing proportion of the New Zealand population. It is one of the fastest growing ethnic groups in New Zealand and is projected to grow from 260,000 people in 2001 to 420,000 in 2021 (Statistics New Zealand, 2005). The three factors that give rise to these increases are: high fertility rates; high rates of immigration; and, inter-marriage<sup>6</sup> (Ministry of Health, 2003).

The six main Pacific ethnic groups in New Zealand are outlined in Table 1. The largest Pacific ethnic group is the Samoan group with nearly one in two people of Pacific ethnicity being Samoan (or 49.3 percent of the Pacific ethnic population) (Statistics New Zealand, 2008, 2008b).

Table 1: Six main Pacific ethnic groups in New Zealand

Ethnicity	Proportion	Percentage %
Samoan	131,103	49.3%
Cook Islands Maori	58,011	21.8%
Tongan	50,478	19 %
Niuean	22,476	8.4%
Fijian	9,864	3.7%
Tokelauan	6,822	2.5%

Source: Statistics New Zealand 2008.<sup>7</sup>

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<sup>6</sup> Inter-marriage is significant because of the ways in which ethnicity is recorded in New Zealand statistics. Inter-marriage meant that steadily increasing proportions of the Pacific population had two or more ethnic identities and no longer considered themselves unambiguously Samoa (Macpherson 2001, p.75). The prioritisation of ethnic minority membership has important implications for the way ethnicity is recorded (Bedford & Didham, 2001).

<sup>7</sup> Note: The Pacific people's ethnic group population includes all of the people who stated one or more Pacific peoples ethnic groups. Some of these people may also belong to other ethnic groups (Statistics New Zealand, 2008).

#### **d) A profile of Samoan peoples**

The Samoan population is a youthful population. In the 2006 national census, the Samoan median age was 21 years in comparison with the overall New Zealand population median age of 35.9 years. Over a third (38%) of Samoans was under the age of 15. Samoans born in New Zealand account for 60 percent (77,247) of the total Samoan population (Statistics New Zealand, 2007).

Table 2: Samoan ethnicity profile

	Percentage	Number
Sole Samoan	66%	86,763
Samoan + one other ethnic group	22%	28,290
Samoan + two other groups	9%	11,472

Source: Statistics New Zealand, 2007, p.11.

There are some distinguishing characteristics within the Samoan population. For example, this population is increasingly diverse in terms of socio-economic status. There is increasing evidence of social stratification which is known to have an impact on health outcomes. Samoans comprises sub-groups with more and less social capital (Statistics New Zealand, 2007). The New Zealand-born generation is generally better qualified, at least in terms of educational qualifications, than their Samoan-born counterparts (Macpherson, 1996, 2001; Statistics New Zealand, 2007)

#### **Youth Health status**

The health of individuals and communities is influenced by the social, cultural and economic and environmental context in which people live their lives, generally referred to as the determinants of health (Ministry of Health, 2008). In the general youth population, while most young people are healthy, it is normally during the adolescent years that there is a significant increase in teenage deaths and injury that are often preventable (Ministry of Health, 2002c, 2008). These can include but are not limited to the following: alcohol consumption; antisocial behaviour; driving and drinking; depression/ suicide; Illicit drugs; gambling; school problems; sexual activity; tobacco use; and violence (Benson, Scale, Sesma, & Roehlkeparatain, 2005; Brook, Brook, De La Rosa, Whiteman, & Montaya, 1999; Dryfoos, 1990).

A study undertaken by Bensen et al (2004) describes ten types of risk behaviours measured in an adolescent spirituality study, as displayed in Table 3. This study included an account of the threshold measures used for these risk-behaviours.

Table 3: Definitions of Risk Behaviour Patterns

<b>Risk Behaviour</b>	<b>Threshold Measure</b>
Alcohol	Has had alcohol three or more times in the past month or got drunk once or more in the past two weeks
Tobacco	Smokes one or more cigarettes ever day or uses chewing tobacco frequently
Illicit dugs	Used illicit drugs three or more times in the past year
Sexual activity	Has had sexual intercourse three or more times in a lifetime
Depression/ suicide	Is frequently depressed and/or has attempted suicide
Antisocial behaviour	Has been involved in three or more incidents of shoplifting, trouble with police, or vandalism in the past year
Violence	Has engaged in three or more acts of fighting, hitting, injuring a person, carrying or using a weapon, or threatening physical harm in the past year
Driving and drinking	Has driven after drinking or ridden with a drinking driver three or more times in the past year
School problems	Has skipped two or more days in the past month, and/or has below a C average
Gambling	Has gambled three or more times in the past year

Source: (Benson et al., 2005, p. 32)

For New Zealand youth, the most commonly noted health-risk behaviours include: alcohol and other drug use; suicide; risky sexual activity; unhealthy dietary behaviours; and physical inactivity. The rates of youth suicide, death from motor vehicle injuries, unplanned pregnancy, and drug and alcohol use in New Zealand continue to be among the highest in the western world (Adolescent Health Research Group, 2003b; Fergusson & Lynskey, 1994; Kann et al., 2000; McGee, 2003; Ministry of Health, 2002a, 2002c).

Studies of the Pacific youth population in New Zealand indicate that as a group, Pacific young people experience a number of socio-economic and health disparities compared to other ethnic groups living in New Zealand (Ministry of Health, 2005b; Ministry of Pacific Island Affairs, 2003). The Ministry of Health highlights that the use of illicit drugs ; high levels of alcohol consumption; unsafe sexual activity rates and smoking are matters of concern(Ministry of Health, 2005b). Much of the harm from alcohol results from heavier drinking occasions. For Pacific drinkers, the higher frequency of episodes of drinking to intoxication (Alcohol Advisory Council, 1997) increases the risk of acute health effects – in particular unintentional injury, violence and self-harm (Ministry of Health 2008, p.19). Alcohol has been linked to the high rate

of unsafe sexual behaviour among Pacific youth (Ministry of Health, 2008). The rate of suicide among Pacific youth is similar to the national average.

Matters of concern relating to sexual health for Pacific young people, when compared to NZ Europeans are: the high teenage birth rates; high rates of sexually transmitted infections (Chlamydia and Gonorrhoea are more common amongst Pacific and Maori youth); a high number of abortion rates of Pacific women, and a high proportion of Pacific women who do not plan their pregnancies (Ministry of Health, 2002a; Paterson J, Cowley E, & Percival T, 2003). The fact that youth in general are more likely to engage with high-risk activities evokes reason for concern for the very youthful Pacific population and reinforces the need to place a concentrated focus on areas such as sexual and reproductive health for Pacific youth (Ministry of Health, 2003). A more detailed discussion on the sexual health status of Pacific young people will be discussed in section 2.3.

### **Pacific Policy**

While there is some available evidence on the social and health status of Pacific communities, there still remains a marked scarcity of information, especially on the young generation of Pacific people growing up in New Zealand (Mila-Schaaf, Robinson E, Schaaf D, Denny D, & Watson PD, 2008; Ministry of Health, 2008), including the disabled (Ministry of Health, 2008c). It is important then, that increasing effort be targeted towards collating and analysing appropriate information on the health status of Pacific youth (Adolescent Health Research Group, 2003b; Ministry of Health, 2002b, 2008). This will assist in informing policy that can address the needs of this sub-population.

As noted by Dr Colin Tukuitonga, Chief Executive Officer of the Ministry of Pacific Island Affairs, *“There is a need to change the policy orientation so as to meet the unique challenges that are facing the next generation of Pacific peoples. It is my observation that despite much rhetoric about working with young, Pacific people, we are not really seeing many appropriate and effective responses to young people’s needs... while there is an awful lot going on in the youth area, there is not a good sense of whether it actually sticks. Unless we have good information about Pacific young people, we run the risk of doing the same’ (Mila-Schaaf, Robinson E et al., 2008, p. 1).*

This sub-section (2.2) outlined the demographic information of Pacific peoples in New Zealand. It is important to recognise that there are many ethnic diversities and sub-groups within the Pacific population, which include but are not limited to: Pacific youth, Samoan youth, and New Zealand-born youth. The challenges associated with self-identity are pertinent issues, especially for those born in New Zealand. For the Pacific youth population, the adolescent period is marked with significant developmental growth. With this comes increased risk-taking behaviours including sexual activities which may lead to negative consequences which will be addressed in the next section.

Section 2.3 is concerned with examining the sexual health status and health activities of Samoan young people in New Zealand. It also identifies issues related to sexual and reproductive health.

## 2.3) Sexual Health

The term 'sex' is an evocative one. It is a loaded and complex term with many definitions depending largely on the cultural context (Hassan & Creatsas, 2000; Ministry of Health, 2003; Tupuola, 2004). Often the terms 'sexuality' and 'sexual health activity' are used interchangeably yet these terms have their own meanings, ranging from issues relating to sexual identity, physical and emotional characteristics, and sexual activities. The World Health Organisation (WHO) defines 'sex' according to biology,

*"Sex refers to the biological characteristics which define humans as female or male. These sets of biological characteristics are not mutually exclusive as there are individuals who possess both, but these characteristics tend to differentiate humans as males and females. In general use in many languages, the term sex is often used to mean "sexual activity"... but for technical purposes in the context of sexuality and sexual health discussions, the above definition is preferred" (WHO, 2002, p. 1).*

One way of reducing the confusion that can come about when attempting to define 'sex' is to define it in terms of various activities. Asayama, (1975) identified a number of sexual desires and experiences in a study of adolescent sex behaviours as listed in Table 4.

Table 4: Adolescent Sexual Desires and Experiences

Experience Category
Menstruation (females)
Ejaculation (males)
Sex awareness
Desire for intimacy
Desire for contact
Desire for kissing
Desire for coitus
Masturbation
Physical contact
Kissing
Coitus

(Asayama, 1975, p. 94)

In the context of this discussion, studies have identified that sexual health activity between individuals progress along a continuum beginning with kissing experiences, to sexual touching (light petting, heavy petting) and finally to coitus (sexual intercourse) often over a period of

years (Asayama, 1975; Kaltiala-Heino & et al, 2003). The term 'petting' is often used in American texts and encompasses a wide range of actions as outlined in Table 5 below.

**Table 5: Petting Techniques**

<b>Petting Techniques</b>
Light kissing
Deep kissing
Manual contact female breast
Oral contact female breast
Manual contact female genitalia
Manual contact male genitalia
Oral contact female genitalia
Oral contact male genitalia
Genital apposition

(Asayama, 1975, p. 102)

Sex behaviour and opinions are moulded by basic factors such as social conventions and the environments in which people live (Asayama, 1975; Bearman & Bruckner, 2001; Fa'alau & Jensen, 2006; Kirby, Lepore, & Ryan, 2005; Ministry of Health, 2001; Sanders & Reinisch, 1999). Of interest are the sexual activities young people believe constitute coitus (sexual intercourse). An American study by Sanders and Reinisch (1999) reveals interesting results. This study sought to determine what sexual activities students would consider as having "had sex". Using a survey questionnaire to explore the sexual behaviors and attitudes among a random stratified sample of 599 students, their findings support the idea that Americans hold widely different opinions about what behaviors do and do not constitute having "had sex". Over half (59%) of respondents indicated that oral-genital contact did not constitute having "had sex" with a partner and nineteen percent responded similarly regarding penile-anal intercourse (Sanders & Reinisch, 1999).

Engaging in sexual health activities for many individuals may be viewed as a pleasurable experience. However, there are some associated risks involved in engaging in this activity. The term 'sexual health risk-taking'<sup>8</sup> has been increasingly used to describe the behaviours or sexual activities that are associated with increased risks and negative consequences for the young person and the wider society (factors that limit the likelihood of successful development). Any

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<sup>8</sup> This term is used interchangeably with the term 'reckless behaviour'

activity has an element of risk; risk exists in everyday life. However, it is the experience of risk that varies (Blum, 1998; Dryfoos, 1990).

### **Teenage Sexual Behaviours**

International reviews of sexual health literature identify five important teenage sexual behaviours: initiation of sex, frequency of sex, use of condoms, use of other contraception, number of partners and/or sexual health outcomes (pregnancy, childbearing or sexually transmitted infections (Kirby et al 2005). The following sub-section provides an overview of seven sexual health activities for which data is available:

The following sub-section provides an overview of seven sexual health activities for which data is available:

- a) Kissing & Sexual touching,
- b) Coital debut,
- c) Fertility & teenage pregnancy,
- d) Contraception Use,
- e) Abortion,
- f) Sexually Transmitted Infections,
- g) Unwanted Sexual Contact.

#### **a) Kissing and Sexual touching experience**

A review of studies on early sex and behavioural consequences reveal a number of trends of sexual experiences. Firstly, there is a progression on the order of early sexual and partnering activities among young people. This begins with newly formed relationships and associated kissing, cuddling, and minor petting. These are relatively low-risk behaviours. However, there is a progression towards moving onto longer term relationships which are more likely to include heavy petting and sexual intercourse: these heightens the level of risk (Brook, Balcer, Abernathy, & Hamburg, 1994; Davis & Lay-Yee, 1999).

#### **b) Coital debut**

Internationally, there have been major changes in the age of first sexual intercourse<sup>9</sup> for women born since the 1930s, particularly evident within Western countries. In countries such as the United Kingdom, the United States, Belgium, France, Norway and Sweden there has been

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<sup>9</sup> For the purposes of this study the term 'first sexual intercourse' covers activities referred to elsewhere as: sexual debut, coital debut.

a steady increase in the proportion of women having had sex by the age of 20 (Hassan & Creatsas, 2000; Paul, Fitzjohn, Eberhart-Phillips, Herbison, & Dickson, 2000b).<sup>10</sup>

In New Zealand, information about sexual and reproductive health status and activities of New Zealand residents can be derived from a range of sources: Ministry of Health – Public Health Intelligence Unit,<sup>11</sup> Statistics New Zealand,<sup>12</sup> Institute of Environmental Science and Research (ESR),<sup>13</sup> AIDS Epidemiology Group, District Health Boards, University led research projects. A recent report by the Ministry of Health (2001) identified that although the sexual health information is valuable, it is not well co-ordinated between the sectors. There are a number of issues related to data collection (Ministry of Health, 2001). In addition to the above databases, University-led research projects also provide sexual and reproductive health information. Four studies, including three longitudinal studies: Christchurch Longitudinal Study; Dunedin Multidisciplinary Health and Development Study; Pacific Infants and their Families study (PIFs); and a cross-sectional study, ‘Youth 2000’ are of particular relevance and will be discussed further.<sup>14</sup>

Young people are becoming sexually active at an earlier age. There has been a steady lowering in the age at first intercourse in younger generations (Midland Health, 1997 cited in Paul, Fitzjohn, Eberhart-Phillips, Herbison, & Dickson, 2000b). In New Zealand it is reported that most young people are becoming sexually active between the ages of 12 and 24 (Ministry of Health, 2002a). Findings from the Dunedin Multidisciplinary Health and Development Study report that at 15 years of age, 32 percent of females and 28 percent of males had had penetrative sexual intercourse. The median age for first sexual intercourse was 17 years for

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<sup>10</sup> However there are some countries where patterns of sexual behaviour do not fit this model – for example Japan, where estimates of experience of sexual intercourse among unmarried teenageagers are still very low (Paul et al., 2000b)

<sup>11</sup> Within the Ministry of Health, the Public Health Intelligence Unit (PHI)<sup>11</sup> monitors the health of the New Zealand population over time by analysing health outcomes, risks and determinants. The PHI also examines inequalities in health across regional boundaries and between various population groups. In 2006 the PHI completed its first New Zealand Sexual Health Survey pilot (Ministry of Health, 2006). It is uncertain whether a full survey will be carried out. The report on pilot undertaken by (Phoenix Research, 2006)

<sup>12</sup> Statistics New Zealand publishes *Demographic Trends*, an annual reference volume on population and related statistics. This includes information on population change and structure, fertility, marriage, divorce, mortality, external migration, sub-national populations, induced abortions, and national and sub-national demographic projections of the New Zealand population (Statistics New Zealand, 2007b).

<sup>13</sup> The Ministry of Health also commissions the Institute of Environmental Science and Research (ESR) to undertake the surveillance of Sexually Transmitted Infections. ESR collates anonymous data on STIs diagnosed at sexual health clinics and since 1998, at an increasing number of Family Planning Clinics and some youth health and student health clinics (Ministry of Health, 2001).

<sup>14</sup> Detailed descriptions of rationales, methodologies, and findings of these studies can be found in the appendices of the studies: Paul et al., 2000; Paterson J et al., 2003; Adolescent Health Research Group., (2003b)

males and 16 years for females (Ministry of Health, 2001; Paul, Fitzjohn, Herbison, & Dickson, 2000a).

Similarly 'Youth 2000' results show that across the 12-18 years age range, 32.4 percent of males and 30.4 percent of females have had sexual intercourse. At age 17, nearly half have had had sexual intercourse (49 percent of males and 49.5 percent of females) (Adolescent Health Research Group, 2003a; Ministry of Health, 2008).

Studies of New Zealanders have concluded that earlier onset of sexual experiences are more common among:

- the young;
- the less educated;
- ethnic minorities;
- respondents who profess no religious affiliation.

(Davis & Lay-Yee, 1999, p. 142)

The Pacific findings from 'Youth 2000' reported sexual health information according to two age groups: those students 14 and under, and those 15 and over. More than a third (36%) of male Pacific students (14 and under) reported ever having sex. For those over aged 15, nearly half (44%) of males reported ever having sex. There were also gender differences found in this study, Pacific female students were less likely than Pacific males to report ever having had sex (Mila-Schaaf, Robinson E et al., 2008).<sup>15</sup>

There is very little information on the age of first sexual intercourse for Samoan young people. This may be in large part due the sensitive nature of this topic, especially as many young Samoan women are hesitant in discussing taboo subjects (Paterson, Cowley, Percival, & Williams, 2004), particularly as it may violate Samoan principles of fa'aaloalo (respect) and ava (reverence) (Tupuola, 2000). An important study that provides context to how sexuality is viewed amongst Samoan subgroups is a study by Anae et al (2000) entitled, *'Tiute ma Matafaioi a nisi Tane Samoa i le Faiga o Aiga: The Roles and Responsibilities of Some Samoan Men in Reproduction*. The aim of the research was to delineate the context of the timing and spacing of births by Samoans in New Zealand in order to better inform sexual and reproductive health policy, services and practice. Although men were the main focus in the study, there was acknowledgement of the importance of involving Samoan women (Anae et al, 2000). This study

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<sup>15</sup> This analysis controlled for age, ethnicity and SES variables.

reported that there are gender differences in sexual debut, with Samoan men having first sexual intercourse earlier (13-15 years) than for Samoan women (16-19 years).

Analysis of the Samoan data from 'Youth 2000' found that 35 percent of Samoan males and approximately 27 percent of Samoan females reported that they had sexual intercourse. However, it is important to note that these findings were based on a small sample (n=360) of Samoan students aged between 13 and 19 years.<sup>16</sup> Of those Samoan students who reported having had sexual intercourse, a substantial majority first had their sexual debut before the age of fourteen (69% females, 75% males) (Mila-Schaaf, Robinson E et al., 2008).

### **c) Contraception Use**

In New Zealand, an individual can buy or obtain contraceptives at any age and can receive advice about contraceptives from a parent, teacher, doctor, or Family Planning Clinic (Goodyear-Smith & Arrol, 2003). Individuals have a wide range of contraceptive methods available including but not limited to: condoms, emergency contraceptive pills, Depo-Provera injections, intrauterine contraceptive devices, diaphragm and 'natural' family planning. Some of these however are only available through prescription (Goodyear-Smith & Arrol, 2003).

Reviews of adolescent literature suggest that two measures are often used to assess the use of contraception; use of a condom (at last sex) and the regular use of contraception. The findings for the general New Zealand secondary school population, based on the 'Youth 2000', study reveal that of sexually active students, over half (males 63.3 %, females 59.7%) report 'always' using contraception to prevent pregnancy. In addition, most sexually active students (males 76.5%, females 68.8%) reported having used a condom as protection against a sexually transmitted infection the last time they had sex (Adolescent Health Research Group, 2003b).

Findings from the analyses of the Pacific 'Youth 2000' data reveal somewhat different results between the younger and older sexually active Pacific students. For students aged 14 years and under, over a third of students (males 36% females 37%), reported not using any form of contraception the last time they had sex.<sup>17</sup> In contrast, students over the age of 15 years had a slightly higher proportion of females (43%) in comparison to Pacific males (22%) reporting not using any form of contraception the last time they had sex. A higher proportion (32%) of Pacific

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<sup>16</sup> This analyses is based on the dataset of Samoan students, according to the ethnic prioritisation procedure used by the researcher (Mila-Schaaf, Robinson E et al., 2008).

<sup>17</sup> No significant gender differences were found between Pacific and NZ European students (Mila-Schaaf, Robinson E et al., 2008).

students aged 15 and over were less likely than NZ European students (16%) to have used contraceptives the last time they had sex (Mila-Schaaf, Robinson E et al., 2008).

In terms of condom use amongst sexually active Pacific students, high proportions of Pacific students reported using a condom (or their partner used a condom) at their most recent experience of sex. For those aged 14 years and under, 63 percent of females and 74 percent of males reported condom use. For those aged 15 years and over, 50 percent of females and 70 percent of males reported condom use (Mila-Schaaf, Robinson E et al., 2008).

A study undertaken by Paterson, Cowley, Percival & Williams (2004) revealed interesting findings on the contraceptive practices of Pacific women. The study involved individual interviews with over a thousand (1365) Pacific birth mothers. They were interviewed about the planning of their pregnancy six weeks after the birth.<sup>18</sup> Forty per cent of the mothers reported that they had planned their pregnancy. Of the sixty percent of mothers who had not planned their pregnancies, 70.8 percent were not using contraception when they conceived. The main reasons given by mothers for not using contraception were that they never thought about contraception (46.8%), did not like using contraception (42.5%), decided to take a chance (39.4%), did not want to risk the associated weight gain (30.4%), and did not think they could have a baby (17.3%). Findings suggest that there were two factors significantly associated ( $p < 0.05$ ) with non-use of contraception by birth mothers who did not plan their pregnancy: lack of post-school qualifications and strong alignment with Pacific culture (Paterson et al., 2004).

There is very little specific material available on Samoan youth in New Zealand. The Samoan findings from the Pacific Youth 2000 report showed that 70% Samoan males reported using contraception the last time they had sex, compared to 53% of Samoan females (Mila-Schaaf, Robinson E et al., 2008). However, there is material from Samoa, which, while not directly comparable due to differing social influences, may give some insights into the health issues for Samoan youth since both New Zealand-born youth and Samoan-born youth are likely to have either a Samoan-born parent or grandparent. For example, a review of sexual reproductive studies in Samoa by Kerslake (2008) provides an overview of young people's sexual health knowledge, behaviours and attitudes. In another a study by Lata (2003), baseline data was gathered on the reproductive health information and service needs of adolescent girls aged between 16 -19 years in Samoa. One of the key findings of this study was that most sexual

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<sup>18</sup> Questions included if the pregnancy was planned; if the pregnancy was unplanned; the form of contraception used; or, if not used, their main reasons for not using contraception.

activity was without knowledge of potential health-risks of sexual activity and limited knowledge of contraceptive use.

There may be cultural reasons for the non-use of contraception. Anae et al (2000) reveals interesting insights into the Samoan understanding and use of contraception,

*“The younger people (males and females) had grown up in relative ignorance of sexual matters in accordance with ‘fa’aSamoa’, and most found themselves ill-prepared for their first and other sexual experiences. The young men’s emphasis on a number of casual sexual experiences, and the young women’s emphasis on virginity both conspired to create a situation where early sexual experiences were generally characterised by a lack of contraception. Were young women to “be prepared” by carrying condoms or using other contraception, then they obviously planned to lose their virginity or have sex. Their accounts also suggested that it was very difficult for them to require their partner to use a condom. Instead, they tended to have unprotected sex and hope for the best”* (Anae et al., 2000, p. 230).

The same study reveals that contraceptive responsibility was undertaken predominantly by the Samoan women themselves. Two reasons were offered. Firstly, women were more likely to carry the consequence of unprotected sexual intercourse, and secondly, it was the woman’s body and therefore it was her choice. Almost all of the women had been, to varying degrees, proactive in procuring contraceptive methods that best suited them (Anae et al., 2000).

It is important to note that caution needs to be taken when interpreting answers to contraception questions. This is because contraception occurs within a cultural context (Hassan & Creatsas, 2000) and answers to questions may say as much about the cultural context as it says about actual behaviour,

*“Contraception is a controversial topic in most communities as it touches deeply held religious convictions, cultural ideas about artificially interfering with nature... and often arguments about a woman’s right to control her body and her fertility. For Pacific peoples, earlier research and consultation suggests that the regard for sex as tapu or sacred/ set apart inhibits discussion between parents and children. Frequently the use of biomedical contraceptives may be opposed on religious and health grounds”* (Anae et al., 2000, p. 2)

#### **d) Fertility and Teenage Pregnancy rates**

The terms 'fertility' and 'teenage pregnancy' are often used interchangeably. A conceptual model as proposed by Miller, Sage & Winward (2006) outlines teenage pregnancy as the sum of the following components:

$$\text{Teenage Pregnancy} = \text{Live Births} + \text{Miscarriages} + \text{Abortions}$$

In comparison with other OECD countries, the rate of teenage childbearing in New Zealand is quite high (Ministry of Health, 2008). New Zealand's teenage birth rate (27.3 per 1,000 women aged 15-19) is the third highest of 28 countries, behind the United States (52.1) and the United Kingdom (30.8) (Ministry of Health, 2003).<sup>19</sup> In particular, Pacific teenage fertility rates are quite high (48 per 1000), preceded only by Maori teenage pregnancy (70 per 1000). The NZ Europeans proved to have the lowest rates (22 per 1000) (Ministry of Health, 2008).

Studies of New Zealanders have concluded that teenage pregnancy is more common among:

- Maori women;
- Women who left school before the age of 15;
- Women who had intercourse before the age of 15;
- Women who did not use contraception at first intercourse (Dharmalingham et al 1997 cited in Ministry of Health, 2001).

Findings from the analyses of the Pacific 'Youth 2000' data revealed that 18 percent of female students aged 14 and under reported that they had been pregnant, and 22 percent of similarly aged male students reported that they had been involved in a pregnancy.<sup>20</sup> For those aged 15 years and over, 22 percent of female students reported a pregnancy and 13 percent of male students reported having been involved in a pregnancy. Differences were found between Pacific and NZ European students whereby Pacific students were more than twice as likely as NZ European students to report a pregnancy<sup>21</sup> (Mila-Schaaf, Robinson E et al., 2008). It is important to note that these figures are drawn only from the Pacific students who had actually confirmed that they had engaged in sexual intercourse. All other Pacific students who had

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<sup>19</sup> At the lower end of the teenage birth rate are countries such as Korea (2.9 births per 1,000 women), Japan (4.6), Switzerland (5.5), the Netherlands (6.2), Sweden (6.5), Italy (6.6) and Spain (7.9) (Ministry of Health, 2003). Information for smaller nation states was not available for comparison

<sup>20</sup> Interestingly, after controlling for SES and other relevant variables, no significant difference was found between Pacific and NZ European students, or between female and male students (Mila-Schaaf, Robinson E et al., 2008)

<sup>21</sup> This analysis controlled for age, SES and gender. However, there was no differences found between the rates reported by female and male students

undertook the survey and had not had sexual intercourse, were not part of the total number from which the percentages were gathered.

There is little information regarding Samoan youth fertility rates in New Zealand. Findings from the Samoan sample (n=360) from the 'Youth 2000' study revealed that 18 percent of sexually active Samoan females had been pregnant and eight percent of sexually active Samoan males reported getting someone pregnant (Mila-Schaaf, Robinson E et al., 2008).

Literature suggests that for Samoan peoples and the broader NZ Pacific populations, pregnancy and/or fertility are viewed in a cultural and religious light. It is noted that children are a 'gift from God'. Respondents in the Anae et al (2000) study reported that while not all of the children they had were planned, they were nevertheless regarded as 'God's gifts' and were welcomed and warmly embraced. However, the high abortion rates suggest that not all Pacific peoples view pregnancy in this light. There are also social stigmas attached to teenage parenting. In the Samoan culture young women are often perceived as embodying their family's honour and therefore when children are born out of wedlock it is perceived that this is a reflection of the family's inability to supervise their young women (Anae et al., 2000; Tupuola, 1998, 2000).

## e) Abortions

Although this study does not explicitly focus on the adolescent abortion rates for Samoan youth, a summary of material relating to Pacific abortions provides context in understanding cultural influences in terms of sexual and reproductive health.<sup>22</sup>

In New Zealand, an individual may consent to or refuse a legal abortion at any age.<sup>23</sup> In the last national statistics gathered, Pacific women had the third highest rate of abortions in New Zealand (26 per 1,000) following Asian and Maori.<sup>24</sup> In 2007, there were 2,290 abortions undertaken by women who identified with the Pacific ethnic group, 10,550 abortions to women who identified with the European ethnic and 4,300 abortions to women who identified with the Māori ethnic group (Statistics New Zealand, 2008e).<sup>25</sup> It has been indicated that these statistics may be influenced by a women's socio-economic status.<sup>26</sup> Most of the women who had abortions had one or more children already and a family income of less than \$22,000 (Ministry of Health, 2001). Anae, Fuamatu et al (2000) reveals a number of reasons why some Samoan women may have abortions. These include:

- Teenagers rebelling in different ways against their families;
- Family pressure to hide unmarried motherhood;
- Concern for family pride;
- Fear of being laughed at;
- Pregnancy coming at a time when education and career goals were important, and;
- Insufficient timely knowledge about conception and contraception (Anae et al., 2000, p. 183).

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<sup>22</sup> Abortion is referred to as 'fa'apalasi le pepe' in the Samoan language (Anae et al., 2000)

<sup>23</sup> In New Zealand the grounds on which an abortion is permitted are described in the Contraception, Sterilisation, and Abortion Act 1977 and in section 187A of the Crimes Act 1961. In any year, 98–99 percent of all abortions are performed because of serious danger to the mental health of the woman (Statistics New Zealand, 2008e). There is widespread debate on the current New Zealand privacy legislation and the fact that parents do not need to be made aware if their teenager has an abortion.

<sup>24</sup> Further information on cross-national rates can be found: (Statistics New Zealand 2003) (Ministry of Health, 2003).

<sup>25</sup> However, there are some limitations in terms of abortion recording. Women having an abortion can state more than one ethnicity on the abortion notification form. For this reason, some abortions are counted more than once in the ethnicity figures and ethnic group totals sum to more than the total number of abortions (Statistics New Zealand, 2008e)

<sup>26</sup> In 2007, 65 percent of abortions were a woman's first abortion. Twelve percent of women having an abortion in 2007 had had two or more previous abortions (Statistics New Zealand, 2008e).

## **f) Sexually Transmitted Infections (STIs)**

The term 'sexually transmitted disease' (STDs) refers to an illness that is most likely spread through sexual contact. Increasingly, the term 'sexually transmitted infections' (STIs) is used as it has a broader range of meaning (Ministry of Health, 2001, 2003). For the purposes of this study the term STIs will be used. STIs are an issue for public health as they can have serious and long-lasting consequences (Ministry of Health, 2008). More than any other age group, sexually active teenagers are at higher risk of acquiring STIs (Hassan & Creatsas, 2000). It is also important to note that there has been a worldwide increase in the notification and assessment of STIs, partly due to the improvements in technology (Mabey, 2005; Ministry of Health, 2001).

In New Zealand, the most frequently diagnosed STIs are chlamydia trachomatis, genital warts, non-specific urethritis (NSU) in males, genital herpes and gonorrhoea (Ministry of Health, 2003, 2008). The rates of AIDs (Acquired Immune Deficiency syndrome) are quite low with the World Health Organisation classifying New Zealand as a 'low prevalence' country for HIV and AIDS (Ministry of Health, 2003).<sup>27</sup>

Whilst there is no specific information on the Samoan youth population, information on the Pacific youth population is provided to give some context. Pacific young people have higher rates of chlamydia and gonorrhoea cases than the national youth average (Ministry of Health, 2003). Multiple STIs were found more common for people under 25 years of age, as well as for Maori and Pacific peoples. Findings reveal that a small proportion of Pacific peoples (3.1%) were found to be infected with HIV from 1996 to 2000 whereas the majority were NZ European at 46.9 percent<sup>28</sup> (Ministry of Health, 2001, 2003, 2008).

Findings from the analyses of the Pacific 'Youth 2000' data reveal that a small proportion (4%) of sexually active Pacific females and males (3%) aged 14 and under reported having (or had) a sexually transmitted infection (STI). For those students aged 15 and over, twelve percent of sexually active female Pacific students and five percent of males reported ever having an STI.<sup>29</sup>

The previous section highlighted the recent statistics relevant to the following sexual health activities and outcomes: kissing, sexual touching, age of first sexual intercourse, fertility and

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<sup>27</sup> The number of notified AIDS cases each year has decreased after peaking over 1989-1996. However the speed with which HIV can spread through communities leaves no room for complacency (Ministry of Health, 2003).

<sup>28</sup> Although the rates for Pacific peoples are small, this is an area requiring constant attention, especially with the lifelong impact.

<sup>29</sup> However, there was no significant difference in either age group between Pacific and NZ European students, or between male and female students in their rate of reported STI (Mila-Schaaf, Robinson E et al., 2008).

pregnancy rates, contraception use, abortions and sexually transmitted infections. The purpose in including this information was to highlight how Pacific young people fared. As outlined, any activity involves risk. Partaking in sexual health activities such as those identified may affect the likelihood of successful development. The social and economic consequences are outlined.

### **Consequences**

Engaging in sexual intercourse exposes youth to the risk factors of teen pregnancy or contracting STIs or HIV (Lammers, Ireland, Resnick, & Blum, 2000). Each of these outcomes can be detrimental but is often avoidable. Teenage pregnancy is generally considered a poor life choice (Ministry of Health, 2003). Although pregnancy may be a unique and enriching experience, early sexual involvement and pregnancy are behaviours that pose a risk to adolescent health and to teenagers' social, educational and emotional development. Evidence suggests that teenage pregnancy and parenthood often represents a disadvantage in itself as it is strongly associated with subsequent educational under-achievement, unemployment and poverty. This comes from the interruption in their education; failure to attain educational potential; reduced earning potential; reduced career prospects; and being emotionally and socially unprepared for childrearing (Kirby et al., 2005; Ministry of Health, 2001, 2008; Paul et al., 2000a). It is widely acknowledged that the responsibilities involved with early parenthood have long lasting effects on the socioeconomic wellbeing of the respective women and children involved (Woodward et al 2001 cited in Ministry of Health, 2001).

International literature indicates that compared with babies born to older mothers, babies born to teenage mothers are at higher risk of low birth weight and infant mortality, and are more likely to grow up in homes that offer lower levels of emotional support and cognitive stimulation. Additionally, children born to teenage mothers are at an increased risk of poor outcomes in education, (Ministry of Health, 2001; Woodward, Fergusson, & Horwood, 2006) and are likely to repeat the cycle of teenage parenthood (Ministry of Health, 2003; Woodward et al., 2006).

With an unintended pregnancy there are other consequences such as:

- couples do not have the chance to benefit from the growing field of preconception risk identification,
- there are reduced opportunities for women to seek care at an early stage,
- the foetus may be unwittingly exposed to harmful substances i.e. tobacco and alcohol,
- unanticipated financial burdens for families and increase stress levels (Ministry of Health, 2003).

There are also economic costs in addressing youth pregnancy. Although there have been no costing models based on New Zealand projections of sexual health interventions and services for teenagers, an American study reveals startling costs. In a review by Miller et al (2006), it was estimated that the direct economic costs<sup>30</sup> of adolescent childbearing to be about \$7 billion (US \$) annually for the American population (Maynard 1997 as cited in Miller 2006, p.). Controlling for various background factors, researchers estimated the combined direct and indirect cost of adolescent childbearing to be approximately \$21 billion per year. Researchers estimated that if these costs were combined with other disadvantages faced by adolescent mothers, a total savings of between 13 and 19 billion dollars per year could be achieved if teenage childbearing were reduced (Miller, Sage, & Winward, 2006).

### **Public health**

Whitehead (2001) notes that within the mainstream media and the public policy world, adolescent pregnancy is viewed as a public health problem as it poses health risks for the adolescent, the child and the wider family. The task of reducing teenage pregnancy often falls to Governments and experts in the health field, including medical, public health and allied social service professionals, who use a variety of public health means and methods to influence teenage behaviours with the aim of reducing teenage pregnancy rates. The common interventions used by governments include sex education, contraceptive technologies, media campaigns, and research (Whitehead, 2001).

### **Sexual risk and protective factors**

A significant amount of literature on sexual risk and protective factors for adolescents has been undertaken in the United States (Bearman & Bruckner, 2001; Brook et al., 1994; Davis & Lay-Yee, 1999; Kirby et al., 2005). A recent report by Kirby et al (2005), entitled '*Sexual Risk and Protective Factors*,' reviews studies of American adolescent published between 1990 and 2004. It examines the impact of factors on the following behaviours: initiation of sex, frequency of sex, number of partners, condom or other contraceptive use, pregnancy, childbearing, or sexually transmitted disease.<sup>31</sup> This report is most useful as it identifies factors that have the greatest causal impact on adolescent sexual behaviours and which factors can be changed the most.

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<sup>30</sup> The direct costs included welfare and food stamp benefits, medical expenses, loss of tax revenue, foster care and incarceration expenses.

<sup>31</sup> Other criteria: \*Based on a sample of teenagers, roughly 18 years of age or younger, have a sample size of at least 1000 for significant results and a sample of at least 200 for non-significant results, Meet scientific criteria required for publication in professional peer reviewed research journals or other publications, include multivariate analyses (Kirby et al., 2005, p. 4).

Miller (2006) provides an outline of the Government policies and strategies undertaken within the US that aim to address ‘Teenage Pregnancy’. Interestingly some, if not all of these strategies, are practiced in different New Zealand settings.

**Table 6: Teenage Pregnancy Policy Strategies**

<b>Prevention policy</b>
Sexual education
Abstinence only
Abstinence first
Abstinence plus
Family Education programmes
Community education programmes
Contraception availability
<b>Indirect prevention efforts</b>
Family support and early intervention
Youth development programmes
Comprehensive approaches
<b>Intervention policy</b>
Right to seek abortion
Adoption policy and teenage pregnancy
Teenage pregnancy and parenting: Improving their futures
Reducing subsequent pregnancies

(Miller et al., 2006, pp. 55-59)

Kirby’s study revealed that there are more than 400 different factors that affect one or more of the five important teenage sexual behaviours (initiation of sex, frequency of sex, use of condoms, use of other contraception, and number of partners), and/or outcomes (pregnancy, childbearing or STIs). The majority of the most important factors can be grouped into four broad themes: 1) individual biological factors; 2) disadvantage, disorganization and dysfunction in multiple domains; 3) sexual values, attitudes and modelled behaviour in multiple domains; and 4) connection to adults and organisations that discourage sex, unprotected sex or early childbearing (2005, p. 15). A summary of these factors is presented in Table 7.

Similar to the review of risk and protective factors undertaken by Kirby (et al., 2005), a study of the transition to first intercourse by Bearman & Bruckner (2001), identified social and developmental influences on sexual debut. The main themes in the study identified: individual-level characteristics; family variables; socio-demographic background; network and romantic relationships.

**Table 7: Sexual Risk & Protective Factors**

Broad Themes	Factors
Environmental	
	Community characteristics
	Family characteristics
	Peer characteristics
	Characteristics of romantic partners
Individual Factors	
	Biological factors – age, physical development, gender
	Race/ Ethnicity
	Connection to family
	Connection to school and success in school
	Connection to faith communities
	Connection to other community organisation or adults
	Involvement in gangs
	Alcohol and drug use
	Aggression
	Paid work
	Involvement in sports
	Cognitive and personality traits
	Sexual beliefs, attitude and skills
	Relationship with romantic partners and previous sexual behaviour

(Kirby et al., 2005, p.26)

According to Kirby et al (2005), of all the risk and protective factors, teenagers’ own sexual beliefs, values, attitudes and skills are the factors most strongly related to sexual behaviour. Not surprisingly, when teenagers begin dating frequently; go steady and kiss and neck, they are more likely to have sex. These early romantic relationships may provide greater desire, opportunity and pressure to have sex.

Youth who begin having sex at an earlier age, may naturally accumulate a greater number of lifetime sexual partners at any later given age. This in itself contributes to a higher STI rate. The relationship between number of sexual partners and STIs is well established. Many studies have demonstrated that having a large number of sexual partners greatly increases the chances of contracting an STI (Whitehead, Wilcox, & Rostosky, 2001b; Wilcox, Rostosky, Randall, & Wright, 2001). Other findings support expectant behaviours, whereby as youths become older, they become much more likely to have sex, they become more likely to have sex more often and with more partners. They are also more likely to use contraception. Findings also vary by

gender. Overall males: initiate sex earlier than females, report more sexual partners, and report greater use of condoms. However, females are more likely to contract sexually transmitted disease (Whitehead et al., 2001b).

A majority of the literature on sexual health risk and protective factors recognise an ecological or holistic viewpoint that emphasises that young people exist, interact and are influenced by their surrounding environment (Miller et al., 2006; Ministry of Health, 2003; Perkins, Luster, Villarruel, & Small, 1998). As noted by the Ministry of Health (2001) a broad range of social and behavioural factors influence sexual behaviour and hence reproductive health. Many of these factors change over time and have particular relevance at certain stages of the life cycle. Sexual wellbeing and reproductive health are complex: many factors that influence sexual wellbeing lie outside the health sector, such as educational attainment and employment. Scholars have searched for factors associated with delayed sexual initiation.

Evidence suggests that the most effective approach to improving young people's sexual health is multi-pronged and combines: comprehensive sexuality education; youth-focused primary health care and ready access to condoms and contraceptives (Ministry of Health, 2003).<sup>32</sup> A further factor that has been identified as being protective is religiosity, or religious attitudes and behaviours of adolescents (Hardy & Raffaelli 2003).

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<sup>32</sup> For more information about effective youth health services read: (Ministry of Health, 2003) Ministry of Youth Affairs (2003) 'Keeping it Real'.

## **New Zealand Government Intervention**

The New Zealand government is committed to ensuring good health, wellbeing and the safety of its citizens. New Zealand is signatory to a number of international agreements which sets responsibilities on a number of health and social issues.<sup>33</sup> It has adopted several policy initiatives to improve the health and social wellbeing of young people, and in particular Maori and Pacific young people (Ministry of Health, 2002c; Ministry of Pacific Island Affairs, 2003; Ministry of Youth Affairs, 2002).

A Ministry of Health report entitled, 'Youth Health: A Guide to Action,' proposes an action plan to improve the health of New Zealand's 12 to 24 year olds. This plan sets out goals, objectives and specific actions for achieving the goal of improving youth health. Within the plan the need to improve the health of Pacific youth is also identified (MOH 2002a). There are also a number of Pacific plans, such as the Pacific Health and Disability Action (PHDA) plan, which sets out the strategic direction and actions for improving health outcomes for Pacific peoples. The PHDA plan highlights six priority areas where improvements can be made to health and disability support services for Pacific peoples. One of these areas is, 'to improve and protect the health of Pacific youth (15-25 years)' (Goal 2) (Ministry of Health, 2002b). This plan also identifies the need to collate relevant ethnic-specific information; identify priorities for action; as well as investigate appropriate service models that will provide more effective services to Pacific youth in areas such as alcohol, drugs, sexual and reproductive health, and mental health (MOH 2002b). Sexual and reproductive health is one of the areas for specific focus for Pacific health (Ministry of Health, 2003).

## **Sexual and Reproductive Health Strategy**

The Sexual and Reproductive Health Strategy<sup>34</sup> (central to this study) sets out guiding principles and the strategic direction for the NZ Government.<sup>35</sup> This strategy aims to achieve positive and improved sexual and reproductive health outcomes for all New Zealanders. Certain groups however, are identified within the strategy as having the most need, these include: those who

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<sup>33</sup> These include: Charter for the Elimination of Discrimination Against Women, Conference on Population and Development of Action +5, United Nations HIV/AIDS Declaration, Beijing +5 Platform of Action and the United Nations Convention on the Rights of Children (Ministry of Health, 2001).

<sup>34</sup> The strategy builds on the National Strategy on Sexual and Reproductive Health 1996 and sits under the New Zealand Health and Disability Strategies.

<sup>35</sup> The strategy relates to a number of existing strategies and other initiatives in the health and disability sector such as: the Primary Health Care Strategy, the Pacific Health and Disability Action Plan, the Youth Health Strategy and the integrated approach to Infectious Diseases (Ministry of Health, 2001)

are in at-risk situations, young people, Maori, Pacific and disabled people (Ministry of Health, 2001).

The high rates of STIs, (particularly Chlamydia, gonorrhoea and HIV) and the high level of unintended or unwanted pregnancies have been identified as the two key areas requiring significant attention for all New Zealanders (Ministry of Health, 2001). Four Strategic directions have been identified within the Sexual and Reproductive Health Strategy which provide a framework for work on sexual and reproductive health and for the development of more detailed action plans:

- 1 Societal attitudes, values and behaviour
- 2 Personal knowledge skills and behaviour
- 3 Services
- 4 Information (Ministry of Health, 2001).

Three of these four strategic directions are described below:

### **1. Societal attitudes, values and behaviour**

Important to this study is the recognition of the need to explore the roles of communities in improving sexual and reproductive health. This includes a focus on the determinants of sexual and reproductive health including societal issues, structural issues (social, environmental, educational, cultural, emotional and spiritual) and that these be examined with reference to the specific age, ethnicity, disability and population group cultural norms (Ministry of Health, 2001). Of particular importance is the recognition that different sectors of the community have differing levels of awareness about different sexual and reproductive health issues and sexuality constraints. The approach that is used to increase the awareness in one area may not be appropriate for others (Ministry of Health, 2001).

As noted by the Ministry of Health (2001),

*"The issue of parents and young people feeling shy, embarrassed and awkward about sexual and reproductive health are common issues across all cultures; for Pacific peoples, they are experienced in a completely different cultural context to that of Maori and Pakeha"* (Ministry of Health, 2001, p. 26).

### 3. Services

Furthermore is the recognition that education, health promotion programmes and services should provide information for the emotional, social and spiritual dimensions of sexuality (Ministry of Health, 2001). In terms of health services, the strategic direction recognises that one size does not fit all and encourages the development of services and programmes to increase awareness and understanding in culturally appropriate and relevant ways for Pacific communities. A number of providers and Public Health Organisations are funded through local District Health Boards and the Ministry of Health to provide sexual and reproductive health services for Pacific communities.

One example is Family Life Education Pasefika (FLEP), funded by the Ministry of Health. FLEP uses drama and music as a health promotion medium and is a popular medium for Pacific youth (Ministry of Health, 2008). In educating young Pacific peoples about health, FLEP also acknowledges the wider influences, such as religion, financial pressures and gender roles (Ministry of Health, 2003). Another example is the Ministry of Health's 'No Rubba, No Hubba Hubba' sexual health campaign that ran in 2004/05 (Ministry of Health, 2003). The campaign targeted 15-19 year olds with an emphasis on Maori and Pacific youth. The goal of the campaign was to raise awareness, encourage sexually active young people to use condoms when having sex and consequently reduce the high rates of STIs (Ministry of Health, 2008). The campaign used a wide variety of media including television, radio, cinema, magazine and outdoor advertising to convey the 'no condom, no sex' message.<sup>36</sup>

Studies show that a range of strategies are required for STI prevention and control programmes, including primary prevention strategies and strategies that reduce individual morbidity and transmission within the population. Furthermore, regular or ongoing sexual health media campaigns are needed to achieve effective behavioural change. A longer term campaign is being planned. Most interesting is the acknowledgement by the Ministry of Health that such campaigns could also aim to include the average rate of partner change by decreasing the number of partners, encouraging monogamy, and delaying the onset of first coitus (Ministry of Health, 2008). This is particularly interesting as such ideals are similarly found in religious and faith teachings.

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<sup>36</sup> An evaluation of the 'No Rubba, No Hubba Hubba' campaign was undertaken. For further information refer to: (TNS New Zealand Limited, 2005).

There are a number of other sexual health initiatives; however, these are not discussed within this study. An important point to highlight, as noted by Colin Tukuitonga, the current Chief Executive Officer for the Ministry of Pacific Island Affairs, is that addressing the health needs for Pacific youth should not be confined to the health sector but needs the involvement and support from other sectors,

*"The issue that face the next generation of Pacific peoples are not just Ministry of Pacific Island Affairs' issues. They are also justice issues, education issues, social development, health, labour; all of the above. To respond meaningfully we need to work together more effectively"* (Mila-Schaaf, Robinson E et al., 2008, p. vi).

#### **4. Information**

Research is needed to profile the Pacific youth population and to identify and explore existing and future sexual and reproductive health issues (Ministry of Health, 2003). Research is used to provide the substance for cultural messages presented to religious, media and family venues. The Sexual and Reproductive Health strategy highlights that there is a need to:

- Maintain and improve monitoring and surveillance systems by ensuring the appropriate information is collected (including ethnicity information);
- Undertake relevant research (Ministry of Health, 2003)

As reiterated by the Ministry of Health, *"Accurate and timely information is increasingly viewed as an essential health tool for improving clinical and professional practice and for ensuring that messages and delivery systems are working as intended. Information can also assist in understanding regional and cultural aspects of unwanted/unintended pregnancy. For example, is there a lack of access to contraception, or is there inaccurate information within a community about fertility control, which might help explain higher rates in a given area? Quality information can assist in the development of best practice guidelines, and in ensuring that overseas experience is made relevant to the issues particular to New Zealand, especially among Maori and Pacific peoples"* (2001, p.36).

Participants in a Pacific Youth Health Project reported that sexual health is a primary concern for sexually active Pacific youth, and that their knowledge is limited because it is a subject they are not allowed to talk about (Ministry of Health, 2008). Members of this group considered it culturally inappropriate to talk to their parents about sexual health. Religion was seen to have a strong influence on the messages Pacific youth were allowed to receive about sex. The youth participants in this study also stated that talking to a Pacific health worker or going to the family doctor was unsafe as there was the possibility of being seen by somebody connected to their

family or church. Overall, the Pacific youth were adverse to any option that risked their parents finding out that they were sexually active (Ministry of Health, 2008).

### **Summary**

This section discussed the ways in which sex and sexual health is measured and understood. There is a range of sexual health activities that also range along a risk-continuum. This section examined the current data relating to the sexual health activities and reports of Pacific and Samoan young people in New Zealand. This section explored the consequence to the individual teenager, family and wider society and explored the role and interventions of central Government to tackle the area of adolescent sexual and reproductive health. There is clear acknowledgement of the need to have a wider understanding of how culture influences sexual behaviour. It has been acknowledged that there are certain factors that may protect young people from engaging in risky sexual activities. The following section (2.4) explores the role of spiritual engagement.

## **2.4) Spiritual engagement**

This section reviews the current information relating to spirituality, religious affiliation and religious participation of Pacific and Samoan youth in New Zealand. The study of religion and spirituality is important as there is for Pacific peoples an increasing interest in the area of adolescent spirituality and growing awareness that spirituality is part of health care. Pacific peoples also acknowledge that faith communities have a role in providing avenues for positive youth development (Benson et al., 2005; Tamasese, Peteru, & Waldegrave, 2005).

### **Pacific peoples and the 'Church'**

Religion plays an important role in Pacific societies and is incorporated in the mottos of several Pacific nations. For example, the Samoan constitution is founded on God and on Christian principles. A Samoan motto reads, 'E Fa'avae Samoa I le Atua' (*translated: Samoa is founded on God*) (Lui, 2007; Tiatia, 1998). It is often touted that Pacific peoples are strong church attending and God-fearing people and the influence of religion and Christianity is a defining characteristic of Pacific peoples (Bedford & Didham, 2001; Mila-Schaaf, Robinson, Schaaf, Denny, & Watson, 2008; Ministry of Pacific Island Affairs, 2003; Ministry of Youth Affairs, 2002; Tiatia, 1998).

A number of writers have described the historical context in how Christianity was introduced and adopted in Pacific nations (Lui, 2007; Macpherson, 1996; Taule'ala'ausumai, 2001; Tiatia, 1998). With migration from the Pacific islands to New Zealand, the church has taken on a special role for the Pacific Islands community (Lui, 2007; Tiatia, 1998). The church is viewed as a social institution where Pacific peoples are able to maintain and retain their cultural language, beliefs and practices (Ministry of Health, 2007; Tiatia, 1998). In various Pacific cultures, many young people's social, spiritual, cultural and youth development activities centre on the church (Ministry of Social Development, 2005; Ministry of Youth Affairs, 2002).

### **Defining spiritual engagement, religion and spirituality**

The terms 'religion', 'religiosity' and 'spirituality' mean different things to different peoples (Lui, 2007; Mason, Webber, & Singleton Andrew, 2005). These terms are understood and experienced differently by various communities (Egan, 2000; Mason et al., 2005). The terms 'religion' and 'spirituality' are often used interchangeably in literature and describe complex and multi-dimensional variables (Benson et al., 2005; Hill & Pargament, 2003).

There is a wide range of literature that explores the conceptualisation of religion and spirituality (Benson et al., 2005; Hill & Pargament, 2003; Mason et al., 2005; Whitehead, 2001). One view put forward by Hill (2003) is that 'religion' has both an individual and an institutional construct. More recently the term religion has evolved to be seen as an organised system of beliefs and practices, with rituals, liturgy and dogma (Egan, 2000; Geppert, Bogenschutz, & Miller, 2007; Hill & Pargament, 2003).

Geppert et al., (2007) notes that 'Religion' is intended to mediate an individual's relationship to the transcendent<sup>37</sup> and to the community (Geppert et al., 2007). 'Spirituality' on the other hand is viewed as a more personal and less formal search for meaning and relationship to the sacred (Geppert et al., 2007, p. 389; Hill & Pargament, 2003).

Wright (2005:6) notes that 'spirituality' is seen as *'the roots of our being, who we think we are, why we are here, what we should do with our lives. 'Religion provides a channel for the expression of spirituality, however, not everybody chooses to channel spiritual beliefs and understanding through the formal belief system of religion'* (Wright 2005, p.6).

The evolving concept of 'religion' and 'spirituality' is also expressed in Pacific literatures. In a study with New Zealand-born Pacific young people, Tiatia (1998) found that although religion in Pacific Island society is characterised by 'communal belief', the New Zealand-born participants perceived that Christianity is defined in having the direct and personal relationship between an individual and God. A key finding is how many New Zealand-born Pacific youth now attend charismatic churches compared to traditional Christian churches of their parents. A defining feature of these charismatic churches is the concepts of 'individual salvation' and 'a personal relationship with Jesus', rather than the collectively inherited faith of the family (Tiatia, 1998, p. 108).

A Samoan explanation of spirituality viewed within a health context is put forward by (Lui, 2007). Lui notes that for many Samoans, spirituality is linked to religion and Christianity, but for others spirituality is based on a traditional view,

*"Spirituality is the feeling of connectedness a person has to the non-physical side of their being. This includes a person's connectedness to their ancestors, their land and God"* (Lui, 2007, p. 69).

Using this definition, spirituality is much more than religion. It is a fundamental part of the Samoan belief system and psyche.

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<sup>37</sup> The term 'transcendent' is used in literatures to refer to a higher spiritual being, such as God.

Similarly, authors have identified the limitations and challenges in polarizing religion and spirituality into institutional and individual domains (Dowling & Scarlett, 2006; Hill & Pargament, 2003). As Hill et al., note (2003) religion and spirituality represent related rather than independent constructs, as most people experience spirituality within an organized religious context and fail to see the distinction between spirituality and religion.

*“The distinction between that which is religious and that which is spiritual is far from clear cut and is far from being an either-or-type of distinction (Dowling & Scarlett, 2006, p. 265).*

Bensen et al., (2005) developed the term ‘spiritual engagement’ in a study that explored adolescent spirituality. ‘Spiritual engagement’ is a term used to describe the combination of church attendance and importance (or salience) of spiritual beliefs and church attendance. This study identified that church attendance has an ‘institutional’ face, and the views of spiritual importance more directly taps to the personal sphere (Benson et al., 2005, p. 29).

### **How are religion, spirituality and spiritual engagement measured?**

Studies of international literatures indicate that a wide number of measures are used to identify religious affiliation and spiritual beliefs. As noted by Wilcox et al., (2001), a recent collection of tools assessing various aspects of religiosity showed at least 126 different scales had been developed. Religion researchers have identified that religiosity is actually composed of a number of different dimensions such as an ideological component (a set of beliefs), a ritual or behavioural component (church attendance, participation in religious functions), an experiential component (feelings of devotion, reverence) and a consequential component (application of religious beliefs to daily problems) (Rohrbaugh and Jessor, 1975 cited in Wilcox et al., 2001, p.35). However, despite the vast array of religious measurement tools, there has been little uniformity in the way religion is measured in health research. Further studies undertaken by Hill and Pargament (2003) support the view that religion and spirituality are complex variables involving cognitive, emotional, behavioural, interpersonal and physiological dimensions.

In New Zealand, the official statistics measuring religious affiliation are collected by Statistics New Zealand. In the last national census (2006), residents were asked a single item question ‘What is your religion’ (Statistics New Zealand, 2008c).

### **Critiques of religious measurement**

A number of authors have criticised the use of single-item measures of spiritual engagement. As noted by Hill & Pargament (2003), most measures of religion and spirituality have relied on brief (frequently single-item) and imprecise global indices such as frequency of church attendance, denominational affiliation, or self-rated religiousness and spirituality. *“By relying so heavily on global religion and spirituality variables, researchers have overlooked the possibility that something inherent within religious and spiritual experience itself contributes to or detracts from physical and mental health* (Hill & Pargament, 2003, p. 66). Furthermore, this research almost often is administered using pen and paper, this method also has its own strengths and weaknesses (Davidson & Tolich, 2003).

Bensen et al., (2005) notes that using single-item measures of church attendance and the importance of beliefs are fairly superficial approaches to an area that has a potentially rich array of belief, value, behaviour and communal dimensions. Bensen and their team of researchers contend that these questions are so global they hide what could be great variation in depth, belief, ideology, and experience. The use of single items questions on church attendance, for example, tells nothing about quality, relationships, climate, or developmental attentiveness within churches and church programs.

### **New Zealand statistics**

According to the 2006 New Zealand Census, just over 2 million people (approximately half - 55.6 percent) of those answering the religious affiliation question, affiliated with a Christian religion (including Māori). Most interesting is the finding that membership of mainstream Christian denominations is declining amongst Pakeha New Zealanders. The rates within Maori and Pacific communities are high in comparison (Statistics New Zealand, 2008b).

A significant proportion of Pacific peoples identify with the Christian religion. According to the 2006 census, 83 percent of Pacific peoples stated that they had at least one religion, which was higher than for New Zealand overall (61 percent), and of this group 97 percent identified with the Christian religion. Catholicism was the most common religious affiliation for Pacific peoples living in New Zealand (49,143 people) (Statistics New Zealand, 2008b).<sup>38</sup>

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<sup>38</sup> This has changed since the last New Zealand census in 2001, when the most common Christian denomination for Pacific peoples was Presbyterian, Congregational and Reformed (46,695 people) (Statistics New Zealand, 2008b)

### **Christian denominational breakdown**

In New Zealand, Catholic was the most common Christian religious denomination for Samoan, Tokelauan, and Fijian people. Presbyterian, Congregational and Reformed was the most common Christian religious denomination for people of: Cook Islands Maori, Niuean and Tuvaluan ethnicity. For people of Tongan ethnicity Methodist was the most common Christian religious denomination (Statistics New Zealand, 2008).

University and church-led research projects also provide information on religious affiliation and spiritual beliefs. Pacific findings from the 'Youth 2000' survey reinforce the view that Pacific peoples are an active church attending group. Students were asked how often they attended a place of worship, just under half (45%) of Pacific females and slightly fewer (35%) Pacific males reported 'often' attending a place of worship. Pacific students were approximately four times as likely to attend church 'often' compared to NZ European participants. Almost three-quarters of Pacific students identified as belonging to one of the major organised religions (Mila-Schaaf, Robinson E et al., 2008).

Pacific students were much more likely to report that their spiritual beliefs were important to them compared to NZ European students. The proportion of Pacific students (60%) who reported that their spiritual beliefs were 'very important' to them was more than double the proportion of NZ European students (27%). Gender differences were also noted. Pacific females were more likely than Pacific males to state that their spiritual beliefs were very important to them (Mila-Schaaf, Robinson E et al., 2008).<sup>39</sup>

Analyses of Samoan 'Youth 2000' data reveal that more than half (58%) of Samoan students reported often attending a place of worship and most (72%) reported that their spiritual beliefs were very important to them (Mila-Schaaf, Robinson E et al., 2008).<sup>40</sup>

### **Those with no religion**

The 2006 Census reveals that the European and New Zealander ethnic groups had the highest proportions of people stating that they had no religion, at 37.7 percent (955,260 people) and 37.6 percent (155,268 people), respectively. Interestingly, a growing proportion of Pacific peoples (34,833 – 14%) said they had no religion (Statistics New Zealand, 2008c).<sup>41</sup>

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<sup>39</sup> This analyses controlled for age, ethnicity and SES variables,

<sup>40</sup> This analyses was based on the dataset of 360 students who were classified as Samoan by the ethnic prioritisation procedure (Mila-Schaaf, Robinson E et al., 2008).

<sup>41</sup> This has increased from 12 percent in 2001 (Statistics New Zealand, 2008c).

Of the Pacific peoples who stated that they had no religion, most were New Zealand-born (about nine out of 10) and were concentrated in the younger age groups. Half of Pacific peoples with no religion were aged under 15 years (Statistics New Zealand, 2008c).

### **Influencing factors**

A number of factors influence adolescents' religious attitudes, spiritual beliefs and behaviours such as church affiliation and church attendance. As noted by American researchers (Wilcox et al., 2001) the changes in religious attitudes, spiritual beliefs and behaviours reflect the overall social, emotional and cognitive changes taking place during adolescence. During childhood and early adolescence, religious practices such as church attendance are heavily influenced by parental behaviours and attitudes.

However, the biological and physiological changes in adolescence also impacts on rates of church attendance. It is noted that as young people become more independent during middle and late adolescence, their thinking becomes more complex and abstract (Wilcox et al., 2001). In terms of religion and spirituality, Wilcox et al., (2001) notes that adolescents focus more on the internal characteristics of religion – what they believe – and less on participating in formal worship services.

*'Most adolescents grapple with religious beliefs much in the same way that they challenge, but do not necessarily reject, the political and moral beliefs of their parents. Consequently, some youth become more religious and some less so. Significant numbers change the form of their religious practices. Some adolescents who stop attending worship services increase their participation in church youth group activities, reflecting the increasing importance of peer culture in their lives. Other teenagers disengage from institutional forms of religious practices (prayer, meditation, etc.), while still others disengage more completely. These changes reflect, to a considerable degree, adolescents' "search to find belief systems that reflect their own values, not simply the values of their parents' (Steinberg 1999, p. 299 as cited in Wilcox et al., 2001, p.35).*

The influence of parents and social environment on religious beliefs and spiritual behaviour are also reported in studies of New Zealand and Australian young people (Macpherson, 2001; Mason et al., 2005; Tiatia, 1998). Tiatia (1998) in her study with New Zealand-born Pacific young people reports that that New Zealand-born Pacific young people are strongly encouraged to attend church as there is often an expectation placed upon them (by their parents) to fully participate in the cultural affairs of the church. Some noted that they attended church and at

times were forced to attend as a result of parental pressure, out of fa'aaloalo (respect - obey their parents' wishes). Some participants noted that they attended out of fear, as there were threats of physical disciplinary measures if one did not attend. Females in the study identified that they had more expectations upon them to attend church and be involved in church activities compared to their male counterparts (Tiatia, 1998, p. 69).

The idea that Pacific youth are searching for their own belief system that reflects their own values (and not their parents) is discussed in Pacific literatures (Taule'ala'ausumai, 2001; Tiatia, 1998). These academics outline the various reasons offered by New Zealand-born Pacific young adults in relation to leaving their traditional churches.

### **Spirituality & Public Policy**

Spirituality features in a number of New Zealand policies and interventions. In New Zealand, the recently revised Statement of Religious Diversity (Human Rights Commission, 2007) recognises New Zealand's diverse faith communities and provides a framework of how religious and faith beliefs can be protected in civil society. Although there is no official or established religion in New Zealand, there is recognition that Christianity has played and continues to play a formative role in the development of New Zealand in terms of the nation's identity, culture, beliefs, institutions and values (Human Rights Commission, 2007).

'Education' is one of the eight sub-statements within the Statement of Religious Diversity. *'Schools should teach an understanding of different religious and spiritual traditions in a manner that reflects the diversity of their national and local community (Human Rights Commission, 2007, p. 4)'*. Other national school curricula such as the New Zealand Curriculum Framework (1993) and the Health and Physical Education Curriculum (Ministry of Education, 1999) recognise and affirm the spiritual and religious beliefs of students.

### **Spirituality & Health**

Health is increasingly viewed in a holistic framework, and spirituality has been identified as an inter-connected element of the whole person (Fa'alau & Jensen, 2006; Ministry of Education, 1993; Ministry of Health, 2007; Tamasese et al., 2005). Nationally and internationally there is increasing recognition of the cultural and holistic ideologies of health for cultural and ethnic minority populations (Mental Health Commission, 2001; Ottawa Charter, 1986a). There has been an increasing global awareness and shift towards meeting the health needs of minority groups (Brach & Fraserirector, 2000; Ministry of Health, 2007; WHO, 2002). The Ottawa

Charter<sup>42</sup> provides a platform to develop local community development models of health promotion. This international agreement has had a significant influence on recognising community development models of health provision. The Charter identifies five action areas for health promotion:

- 1) developing personal skills
- 2) strengthening community action
- 3) creating supportive environments
- 4) building healthy public policy
- 5) re-orientating healthcare services toward prevention of illness and promotion of health (Ottawa Charter, 1986b)

In New Zealand, a number of health models have been developed to describe the worldviews for ethnic groups. A Maori model of health known as 'Te Whare Tapa Wha' was introduced in 1984. This model has a holistic approach to health and recognises the important role of spirituality in health. The Te Whare Tapa Wha model is presented as a four-sided house, each wall representing one aspect of health – spirituality (taha wairua), the mind (ta hinengaro), physical health (taha tinana) and family and social relationships (taha whanau) (Durie, 2007; Rochford, 2004). As noted by Durie (2007) similar perspectives have been described for Pacific, Australian Aborigines and Torres Strait Islanders.

There are a range of models of health that have been developed which recognise Pacific worldviews and beliefs about health (Ministry of Health, 2008c; Ministry of Social Development, 2005). These include the Samoan 'Fonofale' and 'Faafaletui' models, the Tongan 'Kakala' model and the Cook Islands 'Tivaevae' model (Health Research Council, 2003). A common feature in these models is that spirituality as an integral part of health and wellness (Clinical Research and Resource Centre Waitemata District Health Board Auckland, 2004; Mental Health Commission, 2001). The Fonofale model is often cited in health literature and captures the holistic view of health as understood by many Pacific cultures<sup>43</sup> (Bathgate & Pulotu-Endemann, 1997; Mental Health Commission, 2001; Ministry of Health, 2005a, 2007, 2008c; Pacific Health Research Centre, 2002).

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<sup>42</sup> The Ottawa Charter for Health Promotion is a 1986 document produced by the World Health Organization. It was launched at the first international conference for health promotion that was held in Ottawa, Canada.

<sup>43</sup> The Fonofale model incorporates the values and beliefs that many Samoans, Cook Islanders, Tongans, Niueans, Tokelauns and Fijians had told Fuimaono Karl during workshops relating to HIV/AIDS, sexuality and mental health in the early 1970's to 1995.

The Fonofale incorporates the metaphor of a Samoan fale (house) with a roof, foundation and four posts and encompasses common Pacific beliefs and values. The roof represents cultural values and beliefs, the foundation represents the family and the four pou's (posts) that link the roof and foundation are seen as: spiritual; physical; mental; and other (Mental Health Commission, 2001). The spiritual post relates to the sense of well being which stems from a belief system that includes either Christianity or traditional spirituality relating to nature, spirits, language, beliefs, ancestors and history, or a combination of both (Mental Health Commission, 2001).

### **Policy intervention**

There is a long standing history of church and faith communities undertaking social justice work in New Zealand (Caritas, 2008). However, recently Government agencies have entered into partnerships with churches and faith communities to assist in the delivery of health and social messages. An innovative programme driven by the Counties Manukau District Health Board (herein referred to as CMDHB) within the Auckland region is the 'LotuMoui' programme. 'Lotu' means "church" or "prayer" in most Pacific languages, while "Moui" is a Tongan and Niuean term that generally means good health that encompasses mind, body and soul. The founding scripture for the 'LotuMoui' programme comes from the Christian Bible: 3 John 1:2 'Beloved, I pray that you may prosper in all things and be in health, just as your soul prospers'(Counties Manukau District Health Board, 2008).

In the CMDHB region, there are more than 100 Pacific churches with congregations ranging from 30 or fewer members into the thousands. The CMDHB has recognised that churches are valuable structures to improve the health status of the Pacific population and have undertaken collaborative partnerships with 50 churches (Counties Manukau District Health Board, 2008). As part of the LotuMoui programme, churches in the Counties Manukau District are funded to implement health programmes tailored to the needs of their congregations. These churches also established health committees. The overall aim is to change mindsets towards healthy living and encourage a collective approach towards health and wellbeing (Ministry of Health, 2007).<sup>44</sup>

However, absent from the descriptions of this partnership between government agencies and churches are the recognition that churches have a distinct purpose and have their own

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<sup>44</sup> An evaluation programme is currently being undertaken to assess the improvements in the health of targeted populations (Counties Manukau District Health Board, 2008; Ministry of Health, 2007).

theoretical foundations. Churches are more than just a venue for public health intervention. As noted by Whitehead (2001) it is important to keep in mind that faith-based institutions such as churches have a different mission and purpose, and may have differing views in terms of what is perceived as a good health outcome,

*“To see them as such is to misunderstand their traditions, purposes and larger ends. Although many of the most successful faith-based out-reach efforts do not proselytize or preach, their motives and mission are often deeply informed by personal religious faith. Faith leaders and volunteers see themselves as bearing witness to God’s love and mercy through their examples and actions”* (Whitehead, 2001, p. 13).

### **Spirituality as a ‘protective’ factor**

It is also important to explore spiritual engagement as the growing interest in adolescent spirituality has been largely driven by adolescent health studies (Benson et al., 2005; Kirby et al., 2005; Whitehead et al., 2001b; Wilcox et al., 2001). These studies show spiritual engagement (variously defined) serves as a protective factor. ‘Protective factors’ and ‘resiliency’ are concepts that grew out of American longitudinal studies carried out in the 1950-70s (Fleming T, 2003). Protective factors are seen as ‘traits, conditions, situations or episodes that appear to alter – or even reverse – predictions of (negative outcomes) and enable individuals to circumvent life stressors (Blum, 1998; Kirby et al., 2005).

Protective factors may operate in different ways and at different stages of development (Blum, 1998). American studies noted resilient children, from a wide range of backgrounds, came from families who held religious beliefs that provided stability and meaning to their lives, especially in times of hardship and adversity (Werner 1993; Bernard 1991). Further studies that examine the association of religion and spirituality upon wellbeing are examined and discussed in section 2.5.

A further reason to explore the role of faith and religious communities is that these environments educate and model desired health behaviours (Whitehead et al., 2001b) and they also provide opportunities for positive youth development (Benson et al., 2005; Dowling & Scarlett, 2006). The term ‘positive youth development’ features in a number of New Zealand Government strategies such as the Ministry of Health’s ‘Youth Health Guide to Action’. This report highlights the influence of environments and encourages an examination of the role of the family, school and community in students’ wellbeing (Ministry of Health 2002). The report emphasises the promotion of safe and supportive environments, and identifies youth health priorities specific to New Zealand. The ‘Youth Development Strategy’ from the Ministry of

Youth Affairs (2002) recognises that effective youth development requires 'having a big picture' strengths-based approach. It is of utmost importance that students feeling connected to others; feel powerful to influence their own lives; feel positive and comfortable with their own identity; and having opportunities to make a positive contribution to society (Mila-Schaaf, Robinson E et al., 2008; Ministry of Youth Affairs, 2002).

Faith and church communities are also important as they engage in activities that guide and protect young people during the sometimes difficult passage of adolescence (Whitehead, 2001). These activities include: offering education, youth groups, summer camps, youth sports leagues, tutoring programmes, rites-of-passage observances, mentoring and after school programmes. These youth development activities give teenagers productive things to do, offer them opportunities to gain knowledge, skills, confidence, and perhaps most importantly, connect them to caring adults (Ministry of Social Development, 2005; Whitehead, 2001). Research evidence suggests that such connections are a source of resilience and protection against involvement in risky teenage behaviours, including early sexual activity (Kirby et al., 2005; Whitehead et al., 2001b).

The opportunity to connect and receive support and youth development opportunities within faith communities is also evident in Pacific literatures. Tiatia (1998) undertook a qualitative study that identified the important role of the church for NZ born Pacific Island youth. The church is seen as being a place where Pacific peoples congregate, fellowship, share and receive information, and also as a place where relationships are maintained and connections are preserved with family members, Pacific languages, culture and traditions. Within this setting Pacific young people can receive social support and be 'connected' to others (Fa'alau & Jensen, 2006; Tiatia, 1998).

A report by the Ministry of Pacific Island Affairs (2003) '*Ala Fou – New Pathways*' also identified the pivotal role of the church in the lives of Pacific youth. This report identified the need to build cultural confidence and a positive sense of identity amongst Pacific youth in New Zealand. Most of the youth participants in this project mentioned church as an important contributor to their identity. The spiritual aspect was important and particular mention was made of the various activities that are connected with the church such as youth groups, dancing groups and sports events. The youth also felt that the common belief in God brought about unity amongst the various Pacific groups (Ministry of Pacific Island Affairs, 2003).

This section outlined the various definitions offered for the terms relating to spiritual engagement. There are a number of ways in which spiritual engagement is measured, that comes with its own challenges and limitations. This section has outlined the recent statistics that suggest that Pacific people (including youth) identify with Christian churches and often attend church. However, there is a small growing proportion stating that they do not identify with a church. There are a number of factors that influence spiritual beliefs, attendance and behaviour, ranging from individual to family structures.

This section concluded by outlining three reasons why it is important to explore spirituality:

- 1) spirituality is a central part of the holistic view of health;
- 2) there is a growing interest in the area of adolescent spirituality;
- 3) there is an acknowledgement that faith communities have a role in providing avenues for positive youth development.

The following section explores the influence of adolescent spirituality on sexual health activities.

## **2.5) Relationship between Spiritual Engagement and Sexual health activities**

Section 2.3 highlighted the range of risks for young people when they engage in sexual activities. Some of the outcomes from these activities are detrimental to wellbeing. Section 2.4 discussed religious attitudes, spiritual beliefs and behaviours (such as church affiliation and church attendance) and how these in some way serve as a 'protective factor' - impacting positively on an individual's health behaviour and personal wellbeing. This section continues the discussion with analysis of studies that have examined the influence of spiritual engagement on youth sexual health activities.

### **Theoretical underpinning**

How can spiritual engagement influence sexual health activity? An American research team have provided a comprehensive research review of the role of religiosity in teenage sexual behaviours and have provided a summary of the theoretical and methodological issues raised by research into this area (Wilcox et al., 2001). There is a wide range of theoretical explanations offered to describe why religion can influence adolescents' health behaviours (Hardy & Raffaelli, 2003; Wilcox et al., 2001; Smith, C., 2003). For our purposes, certain key elements of these explanations are identified to orient and frame this study.

Many researchers (Hardy & Raffaelli, 2003; Kirby et al., 2005; Wilcox et al., 2001) base their hypothesis on concepts related to social control stemming from Durkheim's (1951) theory. According to this theory religion 'serves as an integrative mechanism for fostering shared beliefs and values and for maintaining social order' (Wilcox et al., 2001, p. 38). Religion is viewed as a form of social control. Given that premarital sex is against the teachings of many Christian religions, there are consequences if a person behaves differently to the expectations set (Meier, 2003). These consequences can include: guilt; shame; public embarrassment; and the threat or expectation of punishment from God. There is also the possibility that older generations seek to influence control over younger generations, and use religion as a form of exerting control. If young people are aware of the teachings of their faith and are fearful of the consequences, there is the expectation that they would not engage in the sexual act. However those who may have had sex may encounter associated psychological distress, otherwise termed 'cognitive dissonance'. This mental state is brought on when the individual's beliefs are in opposition with their behaviour. For example, a young person who is highly religious has sex outside of marriage may become cognitively dissonant (in the form of feelings of guilt and unworthiness). They therefore have two choices to alleviate the distress caused, either 1)

change their behaviour (stop engaging in the sexual behaviour), or 2) alter their beliefs (Hardy & Raffaelli, 2003).

An argument advanced by Hill and Pargament (2003), is that religion and spirituality can be understood by some as overarching frameworks that provide motivation and direction for living. Viewed through religious and spiritual lenses, many aspects of life such as physical and psychological health are perceived as sacred, (e.g., ones body is the temple for a higher being). In terms of sexual health, people may therefore be likely to treat their bodies with respect and care (Hill & Pargament, 2003).

### **How have these variables been measured?**

As previously reported, the majority of studies that measure the associations between spiritual engagement (loosely defined) and sexual health activities have relied on data gathered with single-item questions. These studies most often ask about religious affiliation, attendance, and the perceived importance of religious beliefs. There are limitations with using single-dimension measures of religion and religious involvement (Williams, 1994), however, there is evidence that even single-item scales may hold some validity (Gorsuch & McPherson, 1989; Wilcox et al., 2001).

While many researchers have used religious (denominational) affiliation as the primary measure of religion in their studies, there is little agreement on what affiliation classification is the most appropriate to use (Wilcox et al., 2001). Few studies have examined religiosity as a multi-dimensional concept, even though this would seem the most useful way of capturing the complexity of the role of religion (Wilcox et al., 2001).

Kirby et al (2005) undertook a review of studies that captured the relationship between religiosity and sexual activity. Of particular interest for this thesis study is the finding that teenagers who were connected to a faith community and who described themselves as religious<sup>45</sup> were less likely to initiate sex. They were also found to have sex less frequently if they were sexually active. These associations are particularly strong if the teenagers are involved with faith communities with conservative values about sexual behaviour. However, in all of these cases, the direction of causality is not entirely clear (Kirby et al., 2005). Similarly, Brian Wilcox, Sharon Scales Rostosky and colleagues undertook a comprehensive research review of studies that evaluate the relationship between adolescents' religious practices and beliefs and their sexual attitudes and behaviours (2001).

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<sup>45</sup> Being religious involves attending church frequently and have a strong religious affiliation.

The review by Wilcox et al (2001) found support for the idea that religiosity (variously defined) is associated with delayed sexual activity among some groups of teenagers. However, they note that the state of research in this area is particularly poor, which limits the conclusion one can draw. Within this review study findings were also summarised by sexual behaviour measures. A number of measures and studies were documented, however, for the purposes of this study, only a few of the more recent studies identified have been selected for inclusion, in particular those studies that examined church attendance and/or spirituality were drawn out as described in Table 8.

Table 8: Summary of studies that show positive associations found between spiritual engagement and sexual health activities

Sexual Behaviour Measure	Main Findings	Authors
Virginity status/ Sexual experience (Ever Had Sex)	Low religiosity predicted whether white, Latino, and black females and white males had engaged in sexual intercourse.	Perkins et al 1998
Age at Initiation of Intercourse	<p>Adolescents who had no religious affiliation were more likely to initiate sexual intercourse at a younger age than those who had a religious affiliation. Less frequent church attendees were more likely to initiate sexual intercourse at a younger age than were more frequent attendees.</p> <p>Religious attendance was associated with experiencing first sex at an older age for females but not for males.</p>	<p>Forste &amp; Heaton 1988</p> <p>Bingham, Miller &amp; Adams 1990</p>
Total number of Sexual intercourse Partners	<p>For white females, lower religiosity scores were associated with reporting more than two partners.</p> <p>Women who attended church less at age 14 were more than twice as likely to report having two or more recent sex partners at time 2 (four years later).</p>	<p>Zelnic, Kantner &amp; Ford 1981</p> <p>Seidman, Mosher, &amp; Aral 1994</p>
Composite of Sexual behaviours	Non-regular church attendees (less than once per month) reported more sexual behaviours (ranging from hand-holding, kissing, petting, oral stimulation to intercourse) at all three stages of dating.	McCabe & Collins 1983
Contraceptive Use at First Sex	Those groups who were most likely to delay first sex were least likely to use contraception once they did engage in first sex	Bearman and Bruckner 2001

(Source: Wilcox et al., 2001, p.49-74).

The key findings from the Wilcox et al's review include:

- Religion and age: teenagers are less likely to participate in formal religious activities as they get older, although older teenagers are as likely as younger teenagers to say that religion is important to them.
- Religion and gender: Girls are more likely than boys to participate in worship services and religious activities and to rank religion as important to them.
- Religion and race: Black teenagers are much more likely than white teenagers to attach importance to religion and usually have high rates of weekly religious observance.
- The role of religious attendance: Regardless of gender or race, teenagers who attend services frequently are less likely to have permissive attitudes about sexual intercourse.
- More frequent religious attendance is associated with later sexual initiation for whiter males and for females generally.
- It also appears that frequent attendance is associated with increased contraceptive use among boys but decreased contraceptive use among girls.
- The most prevalent reason that virgin teenage girls gave for not engaging in sex was that it is against their religion or morals (Moore, Driscoll & Lindberg 1998 cited in Whitehead, Wilcox and Rostosky 2001: 04).
- The effects of denominational affiliation: Girls who are affiliated with either Catholic or fundamentalist Protestant denominations are especially likely to delay sexual debut, although they are less likely to use contraception when they do initiate sex.
- Girls with no religious affiliation tend to be younger when they first have sex. Some evidence suggests that boys with no religious affiliation have higher rates of sexual activity and lower rates of condom use.

A recent study by Sheftel et al (2007) examined religiosity as both a protective factor and a risk factor for unintended pregnancy and sexually transmitted diseases. The study was conducted with a cohort of 572 predominantly ethnic minority female adolescents in the US. The study found that nineteen percent stated that their religious beliefs had a high impact on decisions about sex and 25 percent said their beliefs had a high impact on decisions about contraceptive use. Of interest were those with low religiosity, who were more likely to engage in sexual intercourse. Sexually active participants with low religiosity had sex more frequently in the past month and had more lifetime partners. However, there was no association between level of religiosity and age at coitarche (first sexual (genitogenital) intercourse), history of pregnancy or STDs, method used at last sex, or future sexual and contraceptive plans. In this cohort, religiosity was associated with sexual risk-taking, but not with the above variables listed (Sheftel, Chiappeta L, & Gold, 2007).

A study by Hardy & Raffaelli (2003) examined potential bi-directional associations between religiosity and first sexual intercourse. The sample, drawn from the National Longitudinal Survey of Youth included 303 teenagers aged 15-16 in 1996 and 17-18 in 1998. All teenagers in the sample were virgins when the study was undertaken in 1996. The results after the second study (1998) showed support for the hypothesis that religiosity may help delay first sexual intercourse and this effect did not differ according to gender or ethnicity. Specifically, higher religiosity for 15-16 year olds was significantly associated with being a virgin two years later.

Existing cross-sectional studies have utilised similar measures of religiosity, and most have found higher religiosity to be related to delayed first sexual intercourse or lower likelihood of sexual experience (Cvetkovich & Grote, 1980, Thronton & Camburn, 1989; Neumark-Sztainer, Story, French & Resnick, 1997; Perkins, Luster, Villarruel, & Small, 1998; Bearman & Bruckner, 2001; Meier, 2003 as cited in Hardy & Raffaelli, 2003).

### ***Abstinence programmes***

A number of programmes have been developed that promote sexual abstinence. An interesting study that was part of the review by Wilcox et al (2001) is a study by Peter Bearman and Hannah Bruckner (2001) that measured the effectiveness of virginity pledging in the True Love Waits programme (TLW). TLW is an international Christian movement where adolescents would make public “virginity” pledges in which they promise to abstain from sex until marriage. Since 1993, more than 2.5 million teenagers have taken the pledge. The pledgers would cite the following:

“Believing that true love waits, I make a commitment to God, myself, my family and my friends, my future mate and my future children to be sexually abstinent from this day until the day I enter a biblical marriage relationship:

Signed:

Date:

Caring Adult Signature:

(Source: Whitehead, 2001, p.21).

Findings from this study revealed that adolescents who pledged,<sup>46</sup> were less likely than adolescents who did not pledge, to have intercourse and the delay effect was substantial. On average, it reduced the baseline rate of time to sexual debut by 34 percent. However, the findings illustrate the contextual setting: the pledge effect is strongly conditioned by age; and pledging delays intercourse in contexts where there are some, but not too many pledgers. The key finding from this study was that pledging created a moral community (Bearman & Bruckner, 2001).<sup>47</sup> A review of 10 American abstinence-only programmes was undertaken by Kirby (2002).<sup>48</sup>, Kirby's review adopted the stringent criteria as set by a task force of the National Campaign to Prevent Teen Pregnancy<sup>49</sup> to determine whether a study provided sufficiently strong evidence. The major conclusion from this review was that none of the abstinence-only programmes had strong evidence to indicate that they delay sex or reduce teen pregnancy.

However, the findings from a study (Bersamin, Walker, Waiters, Fisher, & Grube, 2005), that explored adolescent pledging for 870 American adolescents reveals that an informal type of pledge (where one makes an informal promise or commitment to oneself to wait to have sexual intercourse until one is older) appears to reduce the likelihood that adolescents will initiate oral sex and sexual intercourse over a one year period.<sup>50</sup>

### ***Mixed associations***

The reviews undertaken by Kirby et al, (2005) and Bearman et al, (2001) also highlighted studies that showed that spiritual engagement (variously defined) was not associated or even negatively associated with sexual health activities. These studies suggest the importance and influence of the social context upon sexual health decisions.

A study by Bingham et al., (1990) study failed to find a relationship between attendance at religious services and young women's initiation of sexual intercourse (Bingham et al., as cited in

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<sup>46</sup> This was after controlling for all of the usual characteristics of adolescents and their social contexts that are associated with the transition to sex.

<sup>47</sup> A special feature of TLW, not covered in the study of virginity is the offer of a "second chance" at virginity for those teenagers who may have had sexual intercourse and then profoundly regretted it, or who may have been coerced into first sex. Teenagers who have sex can become "emotional virgins" by asking God for forgiveness and for a second chance. The process of forgiveness begins with confession of sin, repentance, and a pledge to abstain until marriage thereafter (Bearman & Bruckner, 2001).

<sup>48</sup> Kirby's paper was written in response to a paper by Robert Rector entitled "The effectiveness of Abstinence Education Programs in Reducing Sexual Activity Among Youth."

<sup>49</sup> The National Campaign to Prevent Teen Pregnancy was founded in 1996 to work exclusively on decreasing teen pregnancy in America.

<sup>50</sup> The effect persisted even when controlling for demographic and psychosocial variables that have been consistently identified as risk and protective factors in the field of adolescent behaviour (Bersamin et al., 2005, p. 444)

Wilcox et al., 2001:42). Other studies found that frequent church attendance was associated with increased risk of sexual intercourse among certain populations: in particular Latino males (Day, 1992); and Seventh Day Adventist ninth-grade boys (Weinbender & Rossignol, 1996 as cited in Wilcox et al, 2001:42). A National longitudinal study by Meier (2003) of adolescent health, sampled 15-18 year old virgins and found that higher initial religiosity was linked to a lower likelihood of transition to sexual intercourse for female teenagers but not male teenagers. Religiosity was also found to be associated with less contraceptive use (Cooksey, Rindfuss, & Guilkey 1996 as cited in Nonnemaker et al., 2003, p.205).

For the purposes of this study, the findings from a few of the more recent studies that highlight the mixed associations in the review undertaken by Wilcox et al., (2001), are reported in Table 9 on page 58.

Table 9: Studies that reveal mixed associations between spiritual engagement and sexual health activities

<b>Sexual Measure</b>	<b>Main Findings</b>	<b>Authors</b>
Virginity status/ Sexual experience (Ever Had Sex)	Low religiosity predicted whether white, Latino, and black females and white males had engaged in sexual intercourse. Religiosity was not a predictor of sexual intercourse for black males and Latinas.  There was no relationship between frequency of church attendance and sexual experience.	Perkins et al 1998  Benda & Corwyn 1998
Age at Initiation of Intercourse	Religiosity and church attendance were not significantly related to age at first sex.  Religious attendance was associated with experiencing first sex at an older age for females but not for males.	Bingham, Miller & Adams 1990  Miller et al 1997
Composite of Sexual behaviours	Non-regular church attendees (less than once per month) reported more sexual behaviours (ranging from hand-holding, kissing, petting, oral stimulation to intercourse) at all three stages of dating.	McCabe & Collins 1983
Contraceptive Use at First Sex	Religiosity (attendance, perceived importance, frequency of praying) and contraceptive use at first sex were not significantly related.  Those groups who were most likely to delay first sex were least likely to use contraception once they did engage in first sex  Contraceptive use at first sex was negatively related to religiosity	Bearman and Bruckner 2001  Cooksey, Rindfuss & Guilkey 1996  Thomson 1982
Pregnancy	No significant differences were found in reports of pregnancy by denomination or religiosity (importance of religion, church attendance).  Religious identity (frequency of prayer, view of self as religious and religious affiliation) was not significantly associated with pregnancy history when considered in conjunction with additional family and school context variables.	Zelnik, Kanter, & Ford 1981  Resnick et al 1997

(Source: Wilcox et al., 2001, p.49-74).

## ***New Zealand***

There are very few studies in New Zealand that have examined the relationship between spiritual engagement and sexual health (Davis & Lay-Yee, 1999; Paul et al., 2000b; Paul et al., 2000a). A study that is of particular relevance is the Dunedin Longitudinal study that tested for associations between sexual health activities and church attendance. An advantage analysing the findings from longitudinal data is the ability to identify cause and effect relationships between variables of interest (Bearman & Bruckner, 2001).

The Dunedin Longitudinal study asked a range of questions about social conduct and personal aspirations.<sup>51</sup> Of these the following, which relate to church attendance or religious participation and sexual conduct, are of interest in this study.<sup>52</sup> The 1020 subjects were assessed two-yearly from age 3 years and interviewed about their behaviours and ambitions at age 11, 13, and 15 years and were asked at age 11 and 13 years about regular activities including church, Sunday School and church youth group attendance. However a limitation of this study was the under-representation of Māori and Pacific respondents (Paul et al., 2000b; Paul et al., 2000a). Information about sexual behaviour was sought for the first time at the assessment at age 18 and questions about age of first sexual intercourse were asked, by computer, at age 21 years. Respondents were also asked at age 21 about the importance of religion and religious beliefs,<sup>53</sup> and were asked about the experiences they felt were sexual (including kissing and touching).

Findings from the Dunedin study indicate that approximately one third of both young men and young women have experienced sexual intercourse before age 16 years. Of interest, it appeared that five variables<sup>54</sup> emerged as being statistically significant<sup>55</sup> in relation to sexual intercourse before age 16 for males: No religious activity at age 11 years; not having outside home interests at age 13 years; not being attached to school at age 15 years; a low reading score and a diagnosis of conduct disorder in early adolescence. However, for females eight variables emerged, however, religious activity did not feature in this group (Paul et al., 2000a).<sup>56</sup> The finding that 'no religious activity at age 11 years' emerged as statistically

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<sup>51</sup> Many of the questions were based on the 1990 British national survey of sexual attitudes and lifestyles (Paul et al., 2000b).

<sup>52</sup> Readers interested in an exhaustive discussion of the study are referred to (authors et al 200x).

<sup>53</sup> Only adherence to Christianity was inquired about.

<sup>54</sup> A Multivariate analysis was undertaken.

<sup>55</sup> Statistical significance was measured by 95% confidence intervals (CI) and multivariate logistic regression was used to model associations with age of first intercourse less than 16 years (Paul et al., 2000a, pp. 136-138).

<sup>56</sup> For females, independent predictors were: socioeconomic status in the middle range, mother having her first child before age 20 years, IQ in the middle range, not being attached to school, being in trouble at school, planning to leave school early, cigarette smoking and higher self-esteem score (Paul et al., 2000a).

significant for males however, not for females is intriguing. While it would be interesting to know why this gender discrepancy exists, it is beyond the scope of this thesis.

Further analyses of the Dunedin longitudinal data (Paul et al., 2000b), examined the characteristics of young people who had not had sexual intercourse before age 21 in order to shed light on the ways in which young people might resist societal pressures for early sexual intercourse. Overall 11.3 percent of men and 8.1 percent of women reported never having sexual intercourse. Being first born and being persistently involved in religious activities, measured at both 11 years and 21 years, were significant predictors of abstinence for both sexes. As noted by Paul et al., (2000b) the examination of perceptions of an ideal lifestyle, sexual behaviour and religious involvement showed that religion was an important factor in decisions to delay sexual intercourse past age 20, especially for men.

Those most involved in religion were significantly more likely to have remained abstinent to age 21. The strongest association for both males and females were among those with a great deal of involvement in church groups. For both sexes combined, this group was nearly five times more likely to be abstinent than those with no involvement in church groups. Persistent religious involvement showed the strongest relationship with abstinence (Paul et al., 2000b). However, these findings did not hold for those who were religiously involved at one of the two time points (either age 11 or age 21). As suggested by the authors these findings are likely to be relevant to other young populations in the Western world, although the relatively low rate of formal religious affiliation in New Zealand should be kept in mind (Paul et al., 2000b).

### ***New Zealand - Pacific***

A number of qualitative studies provide Pacific viewpoints on the relationship between spiritual engagement and sexual health. For example, the study by Anae et al., (2000) noted that the various churches that females attended had strong reinforced messages of sexual purity, both negatively and positively, (e.g. preserving sex for marriage, sex was special, and pre-marital sex was a sin). The role of the church in educating about sexuality and relationships was a point of discussion of which there was diverse opinion. Some married couples found that their churches offered helpful pre-marriage instruction but others thought that the churches could do more in the area of sex education. Some did not think the church was a suitable venue, whereas others were wary about issues of confidentiality in church-based classes and discussions (Anae et al., 2000). Whilst the studies reviewed on the relationship between religiosity and sexual activities illustrate mostly a positive influence, it is impossible to be confident about the link on the basis of the limited available evidence. At best it can be suggestive, and further investigation would be of benefit.

## **Chapter 3: RATIONALE FOR THE CURRENT STUDY**

Research and policy identifies the need to explore the various domains of sexual and reproductive health (for example spirituality, age, gender, culture etc). This chapter highlights the key issues raised in the literature review. It also provides the researcher's rationale for undertaking this study. It explains her interest on this topic and how her experiences have shaped the selection of the research methods and the influence this has had on the interpretation of the findings.

### **Why is it important to examine the relationship between spiritual engagement and adolescent sexual activities for Pacific youth?**

Firstly, the health disparities of Pacific peoples are well documented. Pacific peoples are over-represented in some of the sexual health areas. Furthermore, with the increase of Pacific young people being born and raised in New Zealand, this gives rise to emerging issues relating to self-identity and acculturation. The wide disparities and changing cultural contexts for the new generation of Pacific youth present a range of challenges for individuals, families and wider society.

Secondly, a greater proportion of Pacific peoples associate with a formal religious institution compared to other ethnic groups in New Zealand. Furthermore, church and spirituality play a central role in the lives of many Pacific young people (Ministry of Social Development, 2005). Government agencies are aware of this fact and most recently, have engaged with Pacific churches in order to provide a range of health and social services. Churches and church leaders are increasingly called upon by policymakers, health providers and the public to address health and social problems.

Thirdly, studies have documented the associations between adolescents' religious affiliations, practices, and beliefs, and their corresponding sexual attitudes and behaviours. It has been suggested by a number of studies that spiritual engagement (defined in a variety of ways) may serve to protect young people from a range of risky behaviours, including early sexual activity. However, studies also found that the effect of spiritual engagement on sexual health activities differed across ethnic groups, ages and genders.

Fourthly, a number of current government policies and plans, for example, the Pacific Health and Disability Action Plan (NZPHD) (Ministry of Health, 2002b) and the Youth Health Action Plan

(Ministry of Health, 2002c) make it clear that the health needs for Pacific peoples must be addressed.

Finally, the paucity of Pacific youth health information is well noted. Research is needed to assist in understanding what factors are protective for different population groups such as the diverse range of Pacific young people (diverse refers to the ethnic, cultural, gender, age differences)(Ministry of Health, 2002b). This has prompted various groups to respond with Pacific focused research such as the Pacific Islands Families study (Poland & Legge, 2005) and analyses of the Pacific 'Youth 2000' data (Mila-Schaaf, Robinson et al., 2008). In the past information collected on Pacific peoples have presented pan-Pacific findings. That is, all the Pacific ethnic groups have been clustered as a single group. There have been increasing calls for ethnic-specific data, given that each Pacific community is unique (Health Research Council, 2003).

In this research, the findings on the spiritual engagement patterns and sexual health activities for Samoan and NZ European students are compared. The reason for selecting the Samoan population is because this group is the largest Pacific ethnic group in New Zealand and the researcher herself is Samoan.<sup>57</sup> The NZ European group was selected as a comparative group as it is often described as 'the dominant group' in New Zealand society. Previous New Zealand measures of health status have compared ethnic groups to the NZ European group.<sup>58</sup>

This research is atypical. It addresses an area that few Pacific researchers have explored. While studies state that spirituality and church is important for Pacific young people in New Zealand, there is limited research evidence that document whether patterns of spiritual engagement influences sexual health behaviour. Analysing the 'Youth 2000' national dataset presents a unique opportunity for researchers, policy agents and the wider community to understand the impact of religious affiliation and spiritual engagement on various aspects of behaviour and well-being.

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<sup>57</sup> As noted in a document entitled 'Guidelines on Pacific Health Research' by the Health Research Council of New Zealand (2003), it is important that a Pacific researcher is accountable to the Pacific community in ways that non-Pacific researchers are not. There is a responsibility for Pacific researchers to conduct themselves in a manner that respects and enhances the wellbeing of the participant community.

<sup>58</sup> However, there are some serious limitations with this use of the NZ European group. Although NZ European is often a default category for ethnicity recording, it actually includes a number of ethnic groups (e.g. Germans, Swiss, Australians etc), which may differ in significant socio-demographic respects. There are a wide variety of NZ Europeans, rural, urban, class, and much like the Pacific group, many problems arise with treating such a diverse population as a single group. For Pacific peoples, there have been observed changes over time between first and subsequent generations of Pacific peoples in New Zealand

It is important to note that these findings are drawn from a cross-sectional study. Therefore, causal influences cannot be made, but the findings can highlight the prevalence of sexual health activities for Samoan and NZ European youth and also examine the patterns of spiritual engagement. The findings may offer new insight into the realities of Samoan youth, and will add to the growing Pacific literature with the aim of enhancing understandings of Samoan youth spirituality and Samoan youth sexual health activities. These findings may also assist policy agents in their discussions regarding sexual and reproductive health for Pacific youth and Pacific communities.

## **Researcher Position**

The title of this thesis, “What’s God got to do with Sex?” was inspired by a chapter written by Ms Barbara Whitehead for an adolescent sexual health report entitled “*What’s God got to do with Teen Pregnancy Prevention?*”.<sup>59</sup> I am aware that there may be cultural ramifications of exploring a topic classed, by some, as ‘taboo’. However, I feel this is an area worth exploring as it can enrich the understandings with the ultimate aim to assist young Samoans growing up in New Zealand.

I am a first generation New Zealander, whose parents migrated to New Zealand from Samoa in the early 1960s. I was raised in a family that encouraged me to deepen my spiritual relationship with God through various means such as regular church attendance. My family are a tight-knit Christian-Catholic family. I attended Catholic schools and most of my school peers and extended family were Catholics themselves. My family, faith community, school environment had the same strong moral views on sex, pregnancy and marriage. However, growing up, my experiences were similar with those cited in Pacific literatures that indicate that ‘sex’ and romantic relationships were not topics for discussion. As a young Samoan female I recall family members instructing me to be a ‘teine lelei’ (good Samoan girl). Implicit in this expectation of a ‘teine lelei’ is that one remains a virgin until marriage and is subservient to one’s parents (Anae et al., 2000).

In my late adolescence I began to notice that despite attending church and receiving faith education, the personal behaviours of my fellow peers were in contrast to the expectations of my cultural and faith communities. Cases of teenagers falling pregnant and having children were not uncommon in my school and faith community.

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<sup>59</sup> From ‘Keeping the Faith: The Role of Religious and Faith Communities in Preventing Teen Pregnancy’ edited by B. D. Whitehead, B. L. Wilcox and S. S. Rostovsky. Ms Whitehead in turn was inspired by “What’s God got to do with the American Experiment? A volume of essays on religion and the public square (Whitehead, 2001).

Upon graduating from University, I worked as a health professional alongside many Pacific youth and their families. I became aware that fellow public health staff encouraged sexually active young people to use contraception and provided contraception education. In principle I agree with these interventions. However, I was aware that there are a range of health choices that were not fully explored and promoted. In my experience, health professionals challenged and queried how 'effective' and 'proven' other interventions were. Furthermore, health professionals did not ask about the influence of church and spirituality for young people and the influence this may have on their decision-making. Although there is recognition of the holistic view of health, and that 'spirituality' and 'church' play an important role in the lives of Pacific youth and their families, I observed that health professionals were not comfortable with exploring this area. A number of studies have highlighted these tensions. For example, Lui (2007) writes of the inability of the New Zealand mental health system (and its professionals) to deal with the spiritual needs of Pacific peoples.

Although I was raised in an environment that held strong spiritual values and expectations, my education, church and work experiences have led me to question whether the sexual health choices of young Pacific peoples are influenced by their understandings of God (as understood within the context of faith and spiritual beliefs).

There are three core reasons why I have chosen this topic. Firstly, a desire to better understand the areas of sexual health and spiritual engagement; secondly, a hope to provide evidence-based research for faith and public health communities; and thirdly, a desire to further develop research and public policy skills. Although my personal experiences influenced the selection of the research question and research data, this study drew information from the 'Youth 2000' survey. My personal views did not shape the design of the 'Youth 2000' study or the analysis of results, as the quantitative analysis is dependent on statistical measures which effectively eliminate researcher bias. I hope that the results of this study may assist others, with the ultimate aim to improve the health of Samoan youth. Improving their health will ultimately improve the health of the wider New Zealand society.

## Chapter 4: RESEARCH METHODS

This chapter outlines the research methods employed in this study. The research data used in this study were gathered as part of a larger research project, the 'Youth 2000' survey. This chapter is divided in three sections: the first section (4.1) describes the research methods for the 'Youth 2000' survey. This section outlines the rationale in developing this survey, the survey instruments selected and the piloting and sampling methods employed.

The subsequent section (4.2) outlines why the 'Youth 2000' data was selected to answer this research question. A description provided of the selected variables and data analysis procedures is also given. The final section of this chapter (4.3) outlines the strengths and weaknesses associated with this research approach.

### 4.1) 'Youth 2000' Survey

The 'Youth 2000' survey, (formally referred to as the Adolescent Health Survey – AHS) is the largest national health and wellbeing survey of New Zealand secondary school young people that took place in 2001.<sup>60</sup> This anonymous cross-sectional questionnaire of health and wellbeing of young people was developed and implemented by the Adolescent Health Research Group (herein referred to as AHRG)<sup>61</sup> based at the University of Auckland (Adolescent Health Research Group, 2003a; Watson PD et al., 2001).

The AHRG, established in 1997 set an aim 'to improve the health and well-being of New Zealand's young people and to provide current national data on the health and well-being of students attending secondary schools in New Zealand' (Adolescent Health Research Group, 2008; Fleming T M et al., 2007). The reviews undertaken by the AHRG highlighted a lack of relevant New Zealand health literature on the New Zealand youth population. The information that was available frequently had limitations to its use because the studies were not applicable to New Zealand's increasingly diverse population (Adolescent Health Research Group, 2003b).

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<sup>60</sup> It was called 'Youth 2000' because the AHRG originally set out to undertake the survey in 2000. The piloting and the alternative education schools were undertaken in 2000; however, the mainstream secondary schools were interviewed in 2001. 'Youth 2000' has become the branding which covers all the AHRG youth surveys (Robinson E, 2008)

<sup>61</sup> The AHRG comprised of researchers, community youth workers, education experts, paediatricians, nurses and adolescent health specialists (Adolescent Health Research Group, 2008).

## **Survey development and pilot**

The development and piloting of the questionnaire has been previously reported (Adolescent Health Research Group, 2003a; Fleming T, 2003; Watson PD et al., 2001). In summary, from 1998 to 2001, the AHRG consulted with young people and their families, schools, health providers, researchers, government agencies, schools regarding necessary factors relevant for a New Zealand youth health questionnaire. Maori and Pacific Island Advisory groups provided consistent feedback, informing the questions asked and categories covered. Reviews of international adolescent health surveys and previously validated questionnaires were also conducted to inform the development of the survey (Adolescent Health Research Group, 2003b; Ameratunga, Robinson, & Watson, 2003; Mila-Schaaf, Robinson E et al., 2008).

New items were generated in response to the needs as identified from the consultation process. Cognitive testing with young people was also undertaken and a pilot survey on a group of 110 students was carried out in 2000. Results from the pilot survey showed that the students expressed a high level of interest in the computerised survey tool (Multi-media Computer Assisted Self-Interview – M-CASI) (Fleming T, 2003; Mila-Schaaf, Robinson E et al., 2008; Tautolo, 2005; Watson PD et al., 2001). Revisions were made and the questionnaire was finalised in 2001 (Mila-Schaaf, Robinson E et al., 2008).

## **Survey Instrument: M-CASI**

The AHRG selected to use the M-CASI tool to collect survey data (instead of the traditional ‘pen and paper’ self-administered and interviewer administered surveys). The CASI method has been proven to improve the quality of data collected as it ensures respondent confidentiality. This may in turn increase the accuracy and ‘truthfulness’ of the final results, especially regarding embarrassing or sensitive questions (Fleming T, 2003; Turner & Ku L, 1998).

Students were provided with individual lap-tops, mouse and headphones. The multi-media component incorporated music, graphics, and animation into the CASI tool. This created a virtual environment where the students listened to the questions read out over the earphones and read the same questions displayed on the computer screens. This animation depicted a student venturing on an island journey answering questions about their life along the way (Adolescent Health Research Group, 2003b). Students answered each question by pointing and clicking with the mouse. The laptops had narrow view screens so that the computer monitor could only be read if someone was sitting directly in front of it. This method ensured that no-one else could see and hear the questions and responses from students. These processes,

along with other measures taken, ensured that answers were confidential and anonymous (Adolescent Health Research Group, 2003a; Watson PD et al., 2001).

### **The questionnaire domains**

The 'Youth 2000' had a total of 523 questions that covered a variety of topics.<sup>62</sup> The questionnaire used a branching system that eliminated questions that were not relevant to particular students. This was particularly important for sensitive areas such as sexuality and drug use. For example, if a student ticked that they had not had sex, they were not asked any further questions about sexual activities (Adolescent Health Research Group, 2003a; Mila-Schaaf, Robinson E et al., 2008). A unique feature of the 'Youth 2000' study was that it not only measured youth health issues (or 'youth health problems' as termed by others), but it also identified the positive aspects in young peoples lives such as social and environmental protective factors (Adolescent Health Research Group, 2003b; Tautolo, 2005)

### **Sampling method**

The AHRG utilised a random sampling method for both the New Zealand secondary schools and students. All 389 secondary schools in New Zealand in the year 2000, which had at least 50 students enrolled in years 9-13 (aged 12-18 years), were included in the total sample list. From these, 133 schools were randomly selected and invited to participate.<sup>63</sup> Of the 133 schools invited, 114 (85.7%) schools consented to participate and 19 schools (14.3%) declined the invitation<sup>64</sup> (Adolescent Health Research Group, 2003a; Fleming T, 2003; Watson PD et al., 2001).

As noted by Mila-Schaaf, Robinson E, Schaaf D, Denny, S & Watson PD, (2008), lower decile schools were under-represented and higher decile schools over-represented in the sampled schools. This was due in part to the small numbers of participating schools in each decile and to

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<sup>62</sup> The question domains included: demographic details; measures of ethnicity and cultural connectedness; characteristics of family and home; characteristics of the school environment and relationships at school; risk taking behaviour; access to healthcare; violence and abuse; physical health; mental health; diet and exercise; activities; sexual health; alcohol and drug use; part-time jobs and income; problem behaviours; characteristics of neighbourhood and spirituality (Adolescent Health Research Group, 2003a; Fleming T, 2003; Mila-Schaaf, Robinson E et al., 2008; Watson PD et al., 2001)

<sup>63</sup> Some schools had a higher proportion of students sampled than others. The proportions sampled at each school were between 10% and 20% of the total school roll. In each of the consenting schools a random list of 30% of all eligible students were generated. The first 15% on the list were identified as selected students, the second 15% as reserve. On the day of the survey the selected students were invited to participate. If they did not consent or could not be located students on the reserve list were invited to participate (Fleming T, 2003; Tautolo, 2005; Watson PD et al., 2001)

<sup>64</sup> Information relating to schools that declined are reported elsewhere (Adolescent Health Research Group, 2003a; Fleming T, 2003; Mila-Schaaf, Robinson E et al., 2008; Watson PD et al., 2001)

the random sampling methodology of the survey.<sup>65</sup> Of particular interest for this study is that Pacific students were spread across schools of all deciles, but by comparison with NZ European students the distribution of Pacific students was skewed much more toward the lower decile schools (Mila-Schaaf, Robinson et al., 2008).

Students were recruited using an unequal probability clustered sampling design. To be eligible to participate, students had to be a New Zealand resident, have English language skills equivalent to Year 6, and be physically able to use a standard laptop computer. Students were not eligible to participate if: their ability to consent was impaired through intellectual impairment, physical impairment or language barriers; parents had refused consent; their school had refused participation; they were absent on the day of the survey; they themselves refused to do the survey or did not answer the sections concerned. Participating students needed to sign a consent form on the day they participated in the survey. They were also informed that they could also withdraw from the survey at any time (Adolescent Health Research Group, 2003b; Fleming T, 2003; Mila-Schaaf, Robinson et al., 2008).

### **Data collection & analysis**

The data collection was conducted between March and October 2001. A total of 9699 students from 114 New Zealand secondary schools participated in the 'Youth 2000' survey, providing an overall response rate of 64.3 percent.<sup>66</sup> One hundred and twenty nine (129) of the 9699 data files (1.3%) were lost due to technical computer problems. This resulted in a slightly smaller database of files (9570) available for the 'Youth 2000' analysis (Adolescent Health Research Group, 2003b; Fleming T, 2003)

The sample of 9699 participating students represented four percent of the total 2001 New Zealand secondary school roll (Mila-Schaaf, Robinson E et al., 2008). Of this, 3,235 selected students did not participate in the study. The reasons for non-participation are reported elsewhere (Fleming T, 2003). The demographic data for the 'Youth 2000' survey sample and 2001 National school population is presented in Table 10 on page 69.

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<sup>65</sup> School decile is based on census information relating to socio-economic indicators and ethnicity data on a sample of families whose children are on a school's roll. School deciles range from 1 to 10 with 1 being low socio-economic status and 10 high.

<sup>66</sup> Once students had completed the survey, data was automatically saved on the laptop's hard drive in an individual file with a school and date identifier. Data files were manually downloaded onto floppy disc and transferred to the study database.

Table 10: Age and gender of national school population, surveyed school populations and sample surveyed

	2001 National school population	Surveyed school population ('Youth 2000')	Survey sample ('Youth 2000')
<b>Gender</b>			
Female	128507 (49.7%)	35538 (54.0%)	5154 (53.8%)
Male	129989 (50.3%)	30312 (46.0%)	4416 (46.2%)
<b>Age</b>			
13 years and under	48377 (20.2%)	13533 (20.7%)	2052 (20.8%)
14 years	54312 (22.7%)	15146 (23.1%)	2285 (24.1%)
15 years	51430 (21.5%)	14570 (22.2%)	2179 (23.0%)
16 years	433000 (18.0%)	11765 (18.0%)	1725 (18.2%)
17 years and over	42378 (17.6%)	10487 (16.0%)	1308 (13.9%)

(Source: Fleming, 2003. p. 63).

### Ethnicity

All students in the survey were asked which ethnic groups they belonged to and could select as many groups that applied to them. Just over eleven hundred students (n=1114) students in 'Youth 2000' identified with one or more Pacific ethnic groups. This constituted 12% of the 9657 participants in the final dataset (Mila-Schaaf, Robinson E et al., 2008). These figures are presented in Table 11.

Table 11: Ethnicity of national school population and survey sample

Ethnicity	2001 National school population	Sampled Students
Maori	17.5%	24.7%
Pacific	7.2%	8.2%
Asian	6.8%	7.2%
NZ European	67.1%	55.3%
Other/Unspecified	1.4%	4.6%

(Source: Adolescent Health Research Group, 2003b, p.18).

It is important to note that the national schools population and survey sample use different ethnicity classification methods. The survey sample as depicted in Table 11 uses the New Zealand Census 1996, ethnicity prioritisation method (Fleming T, 2003; Statistics New Zealand, 2008d). The 2001 national school population uses the New Zealand Census 2001 ethnicity method.<sup>67</sup>

<sup>67</sup> The question in 2001 was almost the same as that asked in the 1991 Census but differs to that asked in 1996. The question was designed to measure ethnicity based on cultural affiliation. Statistics New Zealand research

## Ethical issues

The AHRG obtained ethical approval from the University of Auckland Human Subjects Ethics Committee to proceed with the study (Adolescent Health Research Group, 2003b). The AHRG recognised that a number of ethical issues may arise when undertaking a survey on this scale and nature. These ethical issues may include:

- a) Risks and benefits to the consumer;
- b) Assessment of the validity of the research;
- c) Assessment of the ability of applicants to provide the research safely;
- d) Consent;
- e) Concerns about vulnerable participants;
- f) Privacy, and;
- g) Cultural considerations (Fleming 2003:40)

The AHRG endeavoured to minimise these risks through a number of ways. Informed consent was obtained from all participating students, school principals and School Boards of Trustees (BOT). An active, written consent process was utilised for schools and for students who were invited to participate. Information was provided to parents and translated into Maori, Samoan, Niuean, Tongan and Cook Islands Maori where required and given to schools including guidance staff. Furthermore, a passive parental consent process was used where parents or caregivers were able to opt to have their child excluded from the survey (Adolescent Health Research Group, 2003b; Fleming T, 2003; Mila-Schaaf, Robinson E et al., 2008).<sup>68</sup>

A branching questionnaire design was used to minimise exposure to sensitive questions that may not have been relevant to the students. Safety screens appeared throughout the questionnaire. These screens provided advice and contact details of people the students could talk to. At the start of sensitive sections, reminders of voluntary involvement, confidentiality and anonymity were reassured. At any point, participants were able to leave questions or sections unanswered. At the end of the survey, students who completed the survey were thanked and given an information pamphlet. This pamphlet provided details of people and

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indicated that the 1991 question provided a better measure of this concept than the 1996 question. There were some significant changes in response in 1996 that could be attributed to the wording of the question rather than changes in the population. These were: increased multiple response (people identifying more than one ethnicity); a consequent reduction in single responses; a tendency for respondents to answer the 1996 question on the basis of ancestry (or descent) rather than ethnicity (or cultural affiliation) (Statistics New Zealand, 2008d).

<sup>68</sup> Active parental consent was not sought as it was felt that requiring the return of written consent forms would reduce response rates considerably and systematically. The parental opt-off option was considered sufficient for the age group and procedure concerned.

organisations they could contact for further support if needed. Staff also remained at the school to assist and offer further support (Adolescent Health Research Group, 2003b; Fleming T, 2003; Mila-Schaaf, Robinson E et al., 2008). As previously noted, student privacy was maximised by:

- The use of narrow-view computer screens;
- The fact that students identity could not be inferred from the data;
- Ensuring that data and consent forms were securely stored; and
- Limited data release.<sup>69</sup>

### **Data Analysis**

The 'Youth 2000' survey data has been extensively analysed by members of the AHRG and associate investigators with a large number of reports publicly available.<sup>70</sup> The analyses of 'Youth 2000' survey material was conducted using the quantitative computer statistical packages SAS version 8.2 or SUDAAN version 7.5 (Adolescent Health Research Group, 2003a).

### **Youth '07**

The AHRG, responsible for conducting the New Zealand 'Youth 2000' survey repeated the adolescent health cross-sectional survey in 2007. The Youth '07' survey aims to update and extend the original survey by tracking trends and investigating new issues for young people. At the time of writing, the reports outlining the general findings from the Youth '07 study was not available.

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<sup>69</sup> In some situations individual identity could be inferred from demographic data. To protect privacy data was not shared or published in population categories that applied to less than 50 individuals (Fleming T, 2003).

<sup>70</sup> A full list of reports and peer-reviewed publications can be found on the Adolescent Health Research website (<http://www.youth2000.ac.nz/publications/reports-1142.htm>)

## **4.2) Present Study**

This study seeks to determine the nature of the relationship between patterns of spiritual engagement and the sexual health activities of Samoan youth attending secondary schools in New Zealand.

This study attempts to answer the following key research questions:

1. What is the pattern of spiritual engagement in Samoan youth that attend New Zealand secondary schools?
2. What are the patterns of sexual health status and behaviours of Samoan youth that attend New Zealand secondary schools?
3. Is there an association between patterns of spiritual engagement and sexual health activities for Samoan youth attending New Zealand secondary schools?
4. Do NZ European and Samoan patterns of spiritual engagement and sexual health risk-taking behaviour differ, and, if so, how?

### **The rationale in analysing 'Youth 2000' survey data**

The 'Youth 2000' survey provided, for reasons outline in the previous section, an excellent source of data for answering the research questions. Of particular interest for this study is the fact that the 'Youth 2000' survey data provided a cross-sectional analysis of health and well-being of a nationally representative, ethnically diverse, large sample of New Zealand secondary school students and gathered material on the variables of interest for this study: spiritual engagement and sexual health activities. A further benefit in undertaking secondary analysis of the 'Youth 2000' data is that it lessens the stress and workload placed upon Pacific and school communities. These communities are often expressing their frustration over the demands imposed by research groups and their sense of being over-researched on the same topics.

The questions could have been answered using a number of research methods which include:

- prospective longitudinal designs, which would allow causal influence;
- a cross-sectional survey which examined spiritual engagement and sexual health activities of New Zealand youth;
- qualitative interviews with Samoan secondary school students on their views of spirituality and sexual health activities;
- review of census material and sexual health statistics collected by government agencies (Fleming, 2003)

However, due to time and resource constraints, these research strategies were not feasible for a stand-alone Masters Thesis. Further research challenges include the requirement for a large representative sample size that would assist in identifying meaningful differences between sub-populations (such as Samoans and NZ Europeans). A smaller qualitative or exploratory study may also have been possible; however, this would have led to greater difficulties in generalising results.<sup>71</sup>

### **Variables selected**

Based on the review of literature the following domains (demographics; spiritual engagement; sexual health activities) and individual variables were selected from the 'Youth 2000' study for analysis for this study.

#### Demographic Variables:

- Age
- Sex (Gender)
- Ethnicity
- Measures of socioeconomic status\*

#### Spiritual Engagement Variables:

- Church attendance
- Importance of spiritual beliefs

#### Sexual Health Activities:

- Age of first kissing experience
- Age of first sexual touching experience
- Students who have not had sexual intercourse
- Age of first sexual intercourse
- Use of condom at first sex
- Number of sexual partners
- Use of contraception when having sex
- Pregnancy
- Sexually Transmitted Diseases / Infections

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<sup>71</sup> The advantages of using the 'Youth 2000' data over other research designs have also been reported elsewhere (See Fleming T, 2003; Tautolo, 2005).

An outline of the questions and response options for each of these variables are discussed below.

### ***Age***

This study focuses on the Samoan and NZ European youth aged between 11 and 18 years of age who attended New Zealand secondary schools. In this study, age was scored as a continuous variable. The range of ages in this sample was from 11 to 19 years old. In the 'Youth 2000' survey, age is self-reported, with responses ranging from under 12, 12, 13, 14, 15, 16, 17, 18, over 18.

### ***Sex (Gender)***

This study analyses differences between males and females. As previously discussed the term 'sex' is often confused with sexual intercourse. Students in the Youth 2000 survey were asked 'what sex are you'. Students were given response option of either male or female. Given that the word 'sex' is used in a slightly different context in this study, the term 'gender' will also be used to avoid confusion.

### ***Ethnicity***

This study analyses data pertaining to Samoan and NZ European students. As discussed in the previous chapter ethnicity recording is fraught with challenges. In the Youth 2000 survey, there were four questions that gave an indication on ethnicity. These questions asked of their identification to the ethnic group, place of birth and place of mother and father's birth (Adolescent Health Research Group, 2008).<sup>72</sup>

To facilitate ethnic comparison of this data a total response method was utilised for the Samoan participants in this study. This included students who may have not only identified themselves as Samoan, but reported that they were either born in Samoa or that their mother or father was Samoan. This method was selected to maximise the number of Samoan students for this analysis. The NZ European group was narrowly defined to students who reported that they were of sole NZ European descent (i.e. reported New Zealand ethnicity, born in New Zealand and both parents were New Zealanders) (Mila-Schaaf, Robinson E et al., 2008). The sole NZ European group method was selected as this group is often used in public health literatures as the reference group in which other ethnic groups are compared with (Fleming T

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<sup>72</sup> The Youth 2000 ethnicity questions and response options are located in Appendix 3.

M et al., 2007; Ministry of Health, 2008). The researcher acknowledges that the issue of ethnicity prioritisation is complicated.

It is important to note that these results cannot be directly compared with the results from previous analyses using the 'Youth 2000' data, due to different ethnic classifications.<sup>73</sup>

### ***Spiritual engagement***

Spiritual engagement in this study was assessed by two commonly cited measures: church attendance and importance of spiritual beliefs. The wording of the selected spiritual engagement Youth 2000 questions and response options is outlined in Table 12.<sup>74</sup>

Table 12: Spiritual engagement questions in 'Youth 2000' study

<b>Spiritual engagement questions</b>	<b>Possible responses</b>
<b>Church Attendance</b> How often do you attend a church/mosque/shrine/ or other place of worship (Spirit2)	1) Often 2) Sometimes 3) Hardly ever 4) Never
<b>Importance of spiritual Beliefs</b> How important are your spiritual beliefs to you (Spirit8)	1) Very important 2) Somewhat important 3) Not important

### ***Sexual Health Activities***

Adolescents' sexual activity was assessed by analysing 11 questions from the Youth 2000 survey. A full list of these questions and possible response options are presented in Table 13 on page 77.

Students reported whether their experiences of: kissing, touching and first sexual intercourse, were 'very much wanted', 'wanted', 'didn't mind', 'unwanted' or 'very much unwanted'. These response options were broad and enabled young people to identify their sexual experience. Fleming (2003) notes personal understandings of consent and abuse often develop through the adolescent period and some young people may be uncertain about classifying their experience. For the purposes of this study, the data relating to students who reported that the sexual contact (i.e.: kissing, sexual touching, first sex) was 'unwanted', 'very much unwanted' were removed from the analyses.

<sup>73</sup> For example the study by Mila-Schaaf et al (2008) provides an analysis of 360 Samoan students based on the 1996 New Zealand Census prioritisation method whereas this study analyses and reports on the results from 646 Samoan students.

<sup>74</sup> The Youth 2000 spirituality questions and response options are located in Appendix 4.

### ***Proxy Socio-economic measures***

According to Feinstein (1993) a large body of evidence indicates that socio-economic status (SES) is a strong predictor of health. Better health is also associated with having more income, more years of education, and a more prestigious job, as well as living in neighbourhoods where a higher percentage of residents have higher incomes and more education.

For the purposes of this study, five socio-economic variables were included and controlled for in the statistical modelling. These SES questions related to: employment status of parents; one or two parent families; ownership of a car; ownership of a phone and household overcrowding. These questions cover five of the nine items used in the New Zealand Index of Deprivation-1996 (Mila-Schaaf, Robinson E et al., 2008). These questions were selected for inclusion in the 'Youth 2000' as they were likely to be known by young people<sup>75</sup> and were also consistent with items used for the New Zealand Index of Deprivation (NZDep Index) (Fleming T, 2003).

### **Data Analysis**

Both uni-variate and multi-variate methods were used to analyse the selected variables. A description of these analyses is provided. The 'Youth 2000' survey material was analysed using the quantitative computer statistical package SAS (version 9.1). The researcher undertook all the data analysis and interpretation. These were then verified by senior epidemiologists<sup>76</sup> who have been previously involved in analysis and interpretation the Youth 2000 dataset.

#### ***Uni-variate analysis***

In order to report the response rates of each of the selected variables (demographic patterns; spiritual engagement; and sexual health activities) the first stage of data analysis used frequency tables to ascertain the responses and identify missing values. Question responses were analysed with frequency counts and percentages being calculated and reported. Categorical variables such as church attendance and importance of spiritual beliefs were analysed using chi-square tests and logistic regression.

The second stage of data analysis involved calculating means to ascertain the average ages of selected sexual health activities such as the first age of kissing experience; age of first sexual touching; and age of first sexual intercourse. The age of first kissing experience and sexual touching have been included in the analysis as literature indicates that sexual health activities generally develop along a continuum.

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<sup>75</sup> It is important to note that measuring income and socio-economic status is difficult as some of the secondary students may not be aware of household income and other indicators.

<sup>76</sup> based at the University of Auckland and Massey University

Table 13: Sexual Health Questions and Response Options

Short title for factor	AHS question wording	Possible responses
Age of Kissing Debut/ First kissing experience (Sex2)	About how old were you when you first had an experience of kissing on the mouth? (e.g. pashing, snogging, etc)	Under 11, 11, 12, 13, 14, 15, 16, 17, 18, never
Age of first experience of Sexual Touching (Sex4)	About how old were you when you first had an experience of sexual touching? (e.g. feeling up etc)	Under 11, 11, 12, 13, 14, 15, 16, 17, 18, never
Ever had Sex (Sex6) (Students who have not had sex)	About how old were you when you first had an experience of sex? (by this we mean sexual intercourse or going all the way)	Under 11, 11, 12, 13, 14, 15, 16, 17, 18, never
Reasons for not having had sex (Sex7)	I have not had sex because...? (you can answer as many as apply to you)	I want to wait until I am older, it doesn't interest me, I'm not emotionally ready for it, I don't want the risk of pregnancy, I haven't met anyone I want to do it with, I haven't had the opportunity to do it, fear of disease, my religious values, I am scared of what it could be like, I have had a bad experience in the past, I want to wait until I am married, other
Have had sex (Sex6)	About how old were you when you first had an experience of sex? (by this we mean sexual intercourse or going all the way)	Under 11, 11, 12, 13, 14, 15, 16, 17, 18, never
Kissing (Sex3) /Sexual touching (Sex5) / First experience of sex wanted/unwanted (Sex8)	Sometimes kissing/sexual touching/sex may be what you want and sometimes kissing/sexual touching/sex is not wanted by you. When you first had an experience of kissing/sexual touching/first sex which of these applies to you?	Very much wanted, wanted, didn't mind, unwanted, very much unwanted
Use of Condom at first sex (Sex10)	When you first had sex did you use a condom?	Yes, No
Number of Sexual partners (Sex11)	During your life about how many people have you had sex with?  New test combination of variables 1-2 sexual partners 3-more than 20 sexual partners	1, 2, 3, 4, 5, 6-9, 10-14, 15-20, more than 20  = 1 = 2
Contraception Use (Sex14)	How often do you or your partner use contraception (by this we mean protection against pregnancy)?	Always, Most of the time, sometimes, never
Number of pregnancies (Sex 20)	How many times have you been pregnant or got someone pregnant?	Once, Twice, Three or more
STDs and Infections (Sex26)	Have you ever had a sexually transmitted disease or infection?	Yes, No, Not sure

Source: Adolescent Health Research Group, 2008

### ***Multi-variate analysis and association tests***

Finally, association tests were undertaken to examine the relationships between the variables of interest. It is important to note that the data relating to students who expressed that sexual contact was unwanted (kissing, sexual touching, and first sexual experience) were removed from analysis. Regression modelling was used to test associations in order to measure the significance of any existing relationships. Binary outcomes were analysed using proc logistic regression and continuous variable were analysed using proc survey regression. These tests were adjusted for age, gender and SES. Statistical significance measures have only been reported for: church attendance; importance of spiritual beliefs; gender and age. Test statistics and P-values, 95% confidence limits and odds ratios are presented.

Logistic regression was used to investigate whether the association between spiritual engagement and sexual activities was the same for Samoans and NZ Europeans. This was done by including the interaction between ethnicity and the spiritual engagement variables. In addition, for each of the analyses, the results of association tests for each of the sexual activities were reported down to an age level that included months (part years). For instance 0.5 of a year is the equivalent of 6 months.

### **Weighted analyses**

All statistical analyses were weighted to allow for unequal probabilities of students being selected and appropriate statistical procedures (proc survey procedures) were used to account for sampling design as outlined in Section 4.1 (Adolescent Health Survey Methods). For associations, a 5% level of statistical significance was chosen, this means that two variables are statistical significantly associated when the p-value of an appropriate test is less than 0.05.

## **Variables not selected for inclusion in this study**

The 'Youth 2000' survey collected a vast array of material on young Pacific people's health status including the areas of spiritual engagement and sexual and reproductive health activities. Although there were many fascinating areas that could have been explored, the researcher drew clear boundaries as to what variables could be investigated and best presented within the timeframe set. It was beyond the scope of this study to explore other areas. These potential variables (that were not explored) are outlined.

### ***Unwanted sexual contact***

Students who reported that sexual contact (i.e.: kissing, sexual touching, first sexual intercourse) was 'unwanted' or was 'very much unwanted' were removed from the analyses. This study is concerned with testing whether spiritual engagement is associated with a number of sexual health activities. The inclusion of these students who had reported unwanted sexual contact may have skewed the final results, as these reported behaviours may imply a lack of consent. If this were the case, these results may nullify the influence of spiritual engagement on sexual health activities. Further analysis of the 'Youth 2000' data could have been undertaken to show the characteristics of this group. However, this was not deemed central for this study.

### ***Sexual orientation***

In the Youth 2000 study, students were asked to identify their sex as either 'male' or 'female'. Students were also asked about their attraction to the same or opposite sex. There are individuals who may be born biologically male or female, but identify themselves as a person of the opposite gender. The attraction to the opposite sex is an interesting area; however, characteristics, sexual activities and spiritual engagement patterns of this group have not been explored further.

### ***Profiles of students who have not experienced sexual activity***

Information was collected on students who had *not* experienced kissing, physical touching and sexual intercourse. Exploring the characteristics of this group could provide potentially valuable information; as it can shed light on the individual, family and environmental aspects that may have been an influence on this decision not to have a sexual experience. However, the central focus of this study was on the population who had reported having an experience of sexual intercourse. A decision was made not to investigate this area further.

### ***School Decile***

The 'Youth 2000' survey also collected data on decile ratings. For the purposes of this thesis this material was not analysed as this study had already incorporated socio-economic status (SES) data into the research design.

## **4.3) Strengths & Limitations**

It is important to acknowledge that strengths and limitations are inherent in any research design. For those interested in a comprehensive discussion of the strengths and weaknesses for the Youth 2000' study, the following report is available (Adolescent Health Research Group, 2003b). The following strengths and limitations are relevant to this study.

### **Strengths of the study**

- ***Comprehensive Survey Data***

The 'Youth 2000' dataset contains the most comprehensive source of quantitative information for Pacific young people in the New Zealand secondary school context. This large national study of 9699 students included 1114 Pacific students who participated in the survey. The wide range of health and wellbeing domains allows for the ability to look cross-domains and explore previously untested activities (such as spiritual engagement and sexual health).

- ***Selection and Data Analysis***

The procedure used to select schools and students ensured that a representative sample of NZ secondary school students was available and could be generalised to students throughout New Zealand.

- ***Youth and Community involvement***

A further strength was the involvement of students and Pacific communities in the development of the survey (Mila-Schaaf, Robinson et al., 2008). Secondary school students and Pacific communities were given the opportunity to feedback on various phases of the research design. For example, in the pilot testing phase, the participating students reported that the M-CASI method was acceptable and enjoyable. They described the privacy and anonymity of the survey as being particularly important for the honesty of their responses. The use of this

innovative survey design enabled anonymity and confidentiality to be maintained for surveying students.

- ***Self-reporting method***

The Youth 2000 survey relied on young people to report on their own health and wellbeing. According to a Ministry of Health report (2008b) self-reporting introduces an element of subjectivity into health status measurement, which is useful as it provides a more consumer-centred view of health, placing more emphasis on quality of life and wellbeing. An individual's own perception of their health status and functioning provides an alternative method to the more traditional objective measures of health, such as hospitalisation rates and disease prevalence.

- ***Minimising researcher fatigue***

Secondary analyses of the 'Youth 2000' material ensures that Pacific and school communities are not 'over-researched' and are saved from having to repeatedly answer questions relating to sensitive and personal issues, such as sexuality and faith.

### **Limitations of the study**

The variables which were excluded from the analysis (as previously outlined) limited the range of possible relationships which could be explored. Their inclusion would have expanded the range of relationships which could have been explored but their inclusion is beyond the scope of this thesis. Further limitations include:

- ***Causality***

While cross-sectional surveys such as 'Youth 2000' are useful in that they can identify that there are associations between variables, causality cannot be inferred or assumed from the results.<sup>77</sup> For example, one cannot say that based on a finding from a cross-sectional survey that attending church often causes a young person to delay sexual intercourse.

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<sup>77</sup> Causality can only be examined using other research designs such as longitudinal studies (Grinnell & Unrau, 2005).

- ***Self-reporting method***

Although self-reporting has its strengths, this method has four commonly known biases (Grinnell & Unrau, 2005). There is the possibility that students lied or gave false responses, possibly due to social stigma. It is likely that a small number of students gave false responses; either over-reporting or denying certain behaviours. Students may have made mistakes without realizing, giving inaccurate answers by accident because they may have misunderstood the question.<sup>78</sup>

- ***Non-participation***

A further limitation lay in the fact that not all schools or students who were invited to participate did so. In addition, the 'Youth 2000' survey only focused on students who were still in secondary school. Samoan students who were excluded from school or who were absent on the day of the survey were not included in the survey. Those students (who are not in school) are more likely to have greater health concerns - especially students who may be experiencing sexual health issues such as pregnancy and child-birth.

A further limitation is that by the age of 17 over 40 percent of young people have left school (Fleming T et al, 2007, 2003), meaning that the results regarding older Samoan students can not be generalised to the whole Samoan youth population. Analysis of studies for students still at school may produce an under-representation of Samoan students most likely to be at risk.

- ***Non-responses***

Students were able to opt out of answering questions and sections in the 'Youth 2000' survey. The fact that students did not all complete all sections of the survey limits the ability to draw accurate conclusions from these sets of data.

- ***Ethnicity***

There is an ongoing debate as to what methods should be used to classify ethnicity. The prioritisation strategy employed to classify students into ethnic groups, may not have been the most appropriate method of classification, and may not accurately reflect the student's ethnicity. It is understood that the recent Youth '07 survey has asked to students to identify which ethnic group they identify with most strongly.

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<sup>78</sup> However, concerted efforts were made by the AHRG to minimise error and ensure privacy for students, such as ensuring students sat before a narrow view laptop and had a headphone each; questions appeared on the computer screen and were also read out aloud (AHRG 2003a, b).

- ***Lost files***

A small number of files 1.3% (129/9699) were not able to be used because of software problems (Adolescent Health Research Group, 2003b)

- ***Research design***

One of the limitations is that the 'Youth 2000' study is a cross-sectional survey; therefore it only surveyed participants at one point in time. This survey did not follow the entire cohort until adulthood, and therefore could not record the ages when all of the Samoan youth had their first experience of sex. This information could be useful in examining the average age for sexual intercourse for Pacific young people and potential influencing risk and protective factors for sexual intercourse.

- ***Spiritual engagement***

The researcher recognises the debate and tensions in measuring a complex construct such as spiritual engagement using only single-item categories such as measuring church attendance and importance of spiritual beliefs. The response option such as 'always attending church' may have a completely different meaning for one student compared to another. The researcher acknowledges that there are more developed methods of measuring spiritual engagement such as those referred to in the literature review. However, the researcher has been confined to the previously available data and questions within the Youth 2000 study.

A further challenge is the limited ability to compare the results from this study with other studies. There are a range of methods used to measure spiritual engagement in adolescent literatures. This study only analysed the reported rates of church attendance and the importance of spiritual beliefs on nine sexual health activities.

- ***Multiple risk-factors***

Not all known predictors of sexual health were included in the analysis such as exploring multiple risk factors (i.e. increased substance use, family type). The decision to exclude these risk-factors has implications. There may be the chance that the findings reported may be different if these other complex variables were included in the analysis.

## **Summary**

This chapter outlined the methods involved in undertaking this study. The first section outlined the research methods for the 'Youth 2000' study, providing an overview of the development and implementation of the survey. The following section outlined the research methods used for the purpose of this study. A description of the data (which include the demographic variables, three spiritual engagement variables and nine sexual health activities) and methods used to analyse these data was provided. The chapter concluded with a discussion of the variables that were not selected for inclusion in the study and an outline of the strengths and limitations of this study. The following section reveals the results of the statistical tests undertaken.

## Chapter 5: RESULTS

The results of this study are organised into four sections. The first is a demographic profile of the Samoan and NZ European students who took part in the 'Youth 2000' survey (5.1). Following this, the responses for the spiritual engagement questions are reported (5.2).

Section 5.3 reports the results from the analysis of the pre-coital questions for Samoan and NZ European secondary school students. The three pre-coital activities are:

1. Age of first kissing experience;
2. Age of first sexual touching experience, and;
3. Students who have not had sexual intercourse.

For each activity listed, a discussion and display (in the form of graphs, frequency tables and percentages) illustrates how Samoan and NZ European student's responded to these questions. No tests of significance were undertaken for these initial summary statistics. The reasons that Samoan and NZ European students gave for not having sexual intercourse are outlined. The commentary concludes with reporting the results from the association tests. These tests examined whether spiritual engagement was associated with these three pre-coital activities.<sup>79</sup>

The final section (2.4) outlines the results from the analysis of post-coital activities (students who report that they have had sexual intercourse) for the two ethnic groups. The following six post-coital activities are examined:

1. Age of first sexual intercourse;
2. Use of condom at first sex;
3. Use of contraception when having sex;
4. Number of sexual partners;
5. Pregnancy, and;
6. Sexually Transmitted Infections.

Similarly, for each of the six post-coital activities listed, a discussion and display (in the form of graphs, frequency tables and percentages) reveals how Samoan and NZ European students' responded to these questions. The average age of first sexual intercourse is reported. The

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<sup>79</sup> These tests were adjusted for age, gender and SES. Statistical significance measures are reported for: church attendance; importance of spiritual beliefs; gender and age. However, in certain association tests, age as a variable was omitted from analysis as age was also part of the outcome variable.

commentary concludes with reporting the results from the association tests. These tests examined whether spiritual engagement was associated with each of these six post-coital activities.<sup>80</sup> The chapter concludes with a summary of the key results.

It is important to recall that for the purposes of this analysis, the terms ‘risk factors’ and ‘protective factors’ will be used to explain the associated effect of these spiritual engagement variables. As noted by Kirby et al, (2005) “Risk factors” are those that encourage one or more behaviours that might lead to a pregnancy or STI (e.g., initiating sex at a young age, having many sexual partners) or discourage behaviours that might prevent pregnancy or STIs (e.g. using contraception or condoms at first sex). Similarly, “protective factors” are those that do the opposite – they discourage one or more behaviours that might lead to pregnancy or STI or encourage behaviours that behaviours that might prevent them (Kirby et al, 2005).

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<sup>80</sup> *ibid*

## 5.1) Samoan & NZ European Population demographics

The demographic characteristics for Samoan and NZ European respondents are described in Table 14. A total of 646 Samoan and 5219 NZ European secondary school students participated in the 'Youth 2000' survey. Data for these students have been used for analyses for this thesis study.

Table 14: Demographic details for Samoan and NZ European 'Youth 2000' respondents

	Samoan students 'Youth 2000' survey sample	NZ European students 'Youth 2000' survey sample
	Sample size=646	Sample size=5219
<b>Gender</b>		
Female	362 (56%)	2836 (54.4%)
Male	284 (44%)	2383 (45.6%)
<b>Age</b>		
13 years and under	139 (22.0%)	1068 (20.5%)
14 years	164 (25.3%)	1184 (22.7%)
15 years	141 (21.3%)	1207 (23.2%)
16 years	116 (18.4%)	1007 (19.3%)
17 years and over	85 (13.0%)	750 (14.3%)

Slightly over half of the students (56% Samoans and 54.4% NZ Europeans) were female. This is reflective of the characteristics of the national 'Youth 2000' survey sample (Adolescent Health Research Group, 2003b).

As displayed in Table 15, just over one quarter of Samoan respondents were of sole Samoan ethnicity (28%), with the majority having other ethnic identities (Samoan and other Pacific 11% and non-Pacific 61%). The majority of the Samoan students surveyed were born in New Zealand (71%), with a quarter born in Samoa (25%). Only a few were born in other Pacific countries (2%) or elsewhere (3%). Most Samoan students (85%) had at least one parent born in Samoa (Mila-Schaaf, Robinson E et al., 2008).<sup>81</sup>

Table 15: Ethnic background of Samoan students

Ethnic background	All students who identified with the Samoan ethnic group	
	Number	Percentage
Samoan only	184	28%
Samoan and other Pacific	69	11%
Samoan and other non Pacific Ethnic group	393	61%
Totals	646	100%

(Source: Mila-Schaaf K, Robinson E et al. 2008: 43)

<sup>81</sup> At the time of writing, the 'Youth 2000' Pacific report was published (Mila-Schaaf, Robinson E et al., 2008). The 'Youth 2000' Pacific report presents selected Pan-Pacific and ethnic specific findings based on the 'Youth 2000' survey. This study replicates this Samoan data for the purpose of this thesis.

## 5.2) Spiritual engagement

This section illustrates the patterns of spiritual engagement for Samoan and NZ European youth. That is, how often students attended church and how important spiritual beliefs were to respondents.

### Attendance at Church

Students in the survey were asked ‘how often do you attend a church/mosque/shrine of other place of worship?’ A higher proportion of Samoan students (46.5%) reported attending church ‘often’ compared to NZ European students (13.3%) as depicted in Figure 1. In contrast over half of NZ European students (52.3%) in comparison to Samoan students (16.1%) report ‘never’ attending church.

Figure 1: Frequency of Church Attendance

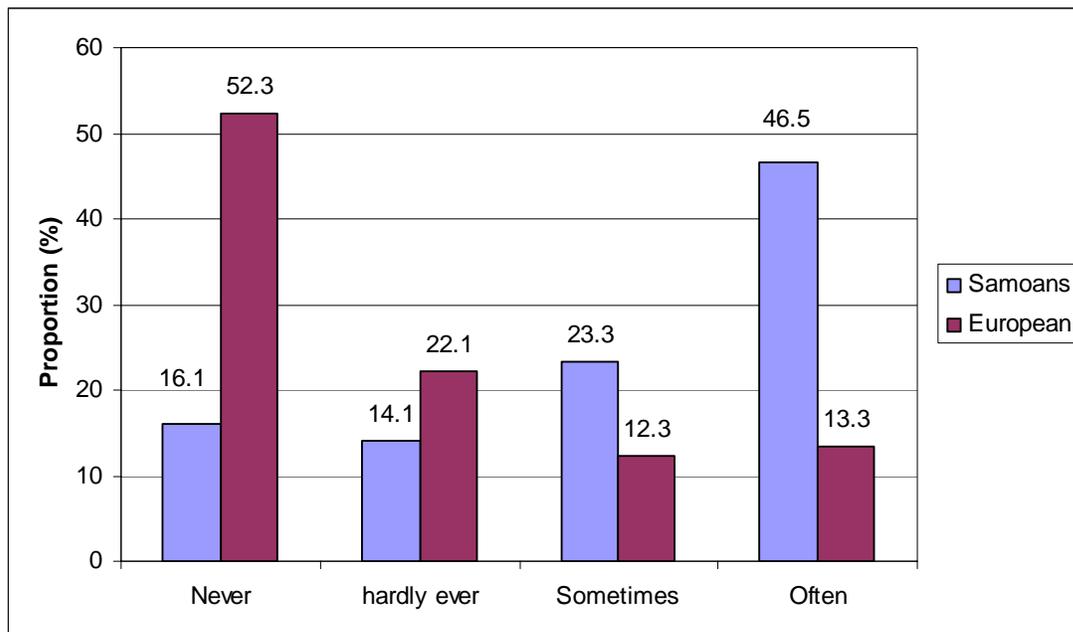


Table 16: Frequency of Church Attendance

Ethnic group		Never	Hardly Ever	Sometimes	Often
<b>Samoans</b>	Percentage	16.1	14.1	23.3	46.5
	Frequency	84	76	128	250
<b>NZ Europeans</b>	Percentage	52.3	22.1	12.3	13.3
	Frequency	2593	1093	607	661

## Importance of spiritual beliefs

Students in the survey were asked, 'how important are your spiritual beliefs to you?' Almost two thirds of Samoan students (65.4%) compared to 26.8 percent of NZ European students reported that their spiritual beliefs were 'very important'. In contrast, just over a third (35%) of NZ European students compared to 8.6 percent of Samoan students reported spiritual beliefs as 'not important' as depicted in Figure 2.

Figure 2: Importance of Spiritual Beliefs

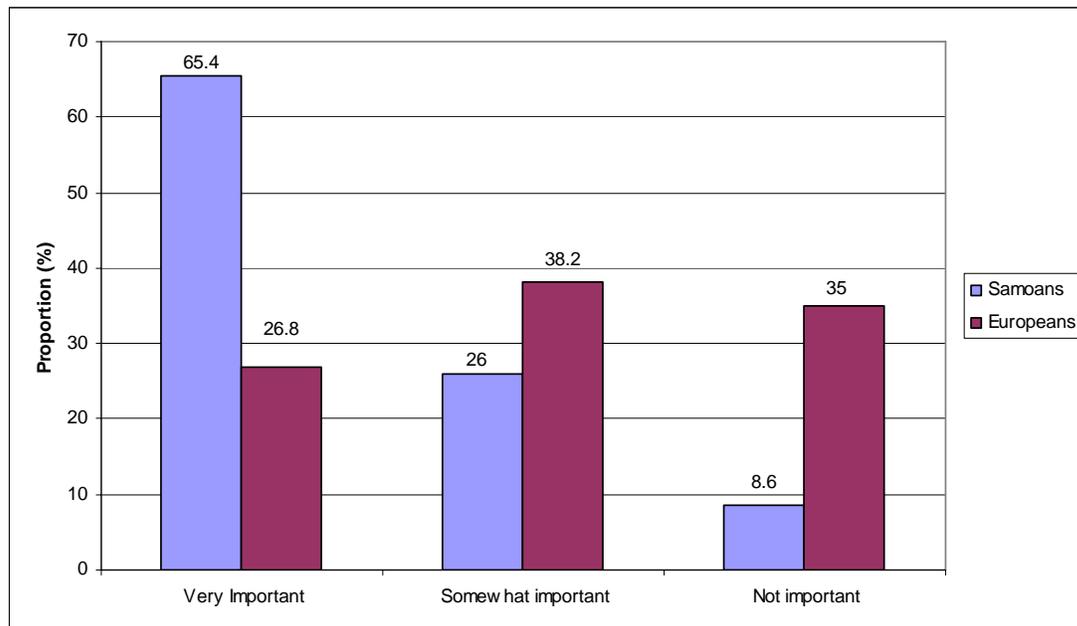


Table 17: Importance of Spiritual Beliefs

		Very Important	Somewhat Important	Not Important
<b>Samoans</b>	Percentage %	65.4	26.0	8.6
	Frequency	336	131	45
<b>NZ Europeans</b>	Percentage %	26.8	38.2	35
	Frequency	1283	1872	1718

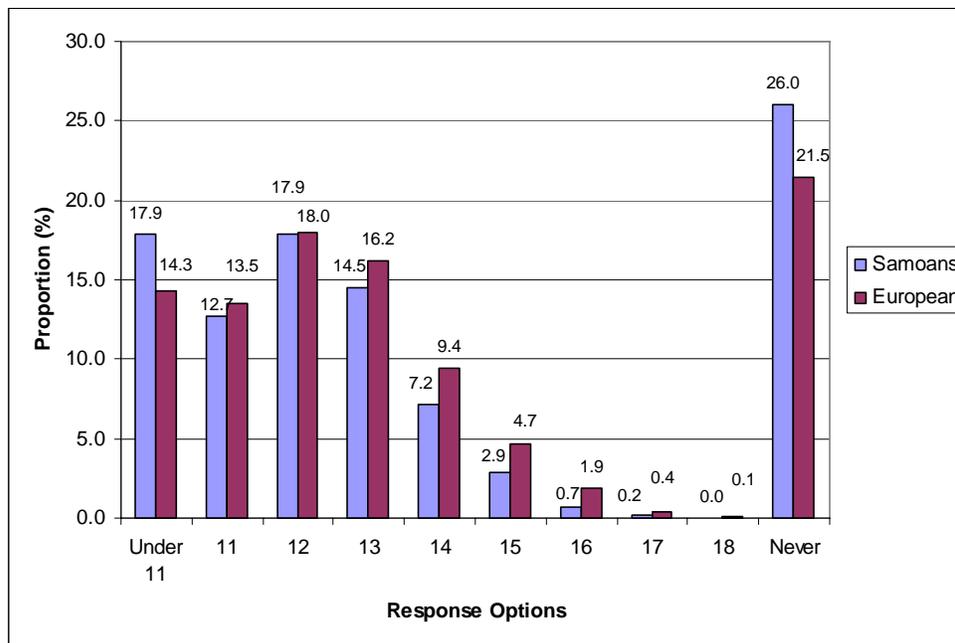
### 5.3) Pre-coital activities

This section considers questions relating to three pre-coital activities as reported by the Samoan and NZ European secondary students. The term ‘pre-coital’ refers to sexual activities that precede sexual intercourse. The discussion begins with exploring the age of first kissing experience; followed by the age of first sexual touching experience; concluding with the proportion of students who reported that they had not had sex and the common reasons for not having sexual intercourse as reported by Samoan and NZ European students.

#### 1) Age of first kissing experience

Students in the survey were asked, ‘About how old were you when you first had an experience of kissing on the mouth? (e.g. pashing, snogging, etc)’. These results, depicted in Figure 3 exclude students who reported that the kissing was unwanted.<sup>82</sup> As noted in Table 18, approximately three quarters of respondents report having had an experience of kissing (Samoan 74% and NZ Europeans 78.5% respectively).

Figure 3: Age of first Kissing experience



<sup>82</sup> The exclusion of this data is discussed in the Research Methods - Chapter 4, section 2.

As outlined in Table 18, a similar proportion of students report being kissed before the age of 16 (Samoan 73.1% & NZ Europeans 76.1% respectively). A slightly smaller proportion of Samoan students (26.0%) compared to NZ European students (21.5%) report never having been kissed.

Table 18: Age of First experience of Kissing

<b>Ethnic Group</b>	<b>Under 11</b>	<b>11</b>	<b>12</b>	<b>13</b>	<b>14</b>	<b>15</b>	<b>16</b>	<b>17</b>	<b>18</b>	<b>Been kissed</b>	<b>Never</b>
<b>Samoans</b>											
Percentage %	17.9	12.7	17.9	14.5	7.2	2.9	0.7	0.2	0.0	74.0	26.0
Frequency	96	67	96	75	37	15	4	1		391	140
Cumulative %	17.9	30.6	48.5	63.0	70.2	73.1	73.8	74		74.0	26.0
<b>NZ European</b>											
Percentage %	14.3	13.5	18.0	16.2	9.4	4.7	1.9	0.4	0.1	78.5	21.5
Frequency	699	657	896	798	466	237	94	21	4	3872	1056
Cumulative %	14.3	27.8	45.8	62.0	71.4	76.1	78.0	78.4	78.5	78.5	26.0

### ***What factors are associated with the age of first kissing experience?***

As noted by Davis & Lay-Yee (1999) there is a well-established progression in the sequencing of early sexual activity among adolescents, starting with early relationships and associated kissing, cuddling and minor petting, and moving onto longer-term relationships, heavy petting and sexual intercourse. Evidence suggests that high spiritual engagement is associated with delaying sexual activity (Sheftel et al., 2007). This study examined whether spiritual engagement is associated with the average age of first kissing experience.

The variables were redefined in this statistical test, partly because of smaller numbers. Respondents were categorised into two groups: those who report their first kissing experience before age 13; and those who report kissing after age 13. Those who reported spiritual beliefs as ‘somewhat important’ and ‘not important’ were combined into one group and compared against those who rated their spiritual beliefs as ‘very important’. Age, (i.e. how old are you?) was not included in the analysis because age was part of the outcome variable (i.e. age of first kissing experience). Students who reported that kissing was unwanted were also removed from analysis.<sup>83</sup>

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<sup>83</sup> Ibid.

## **Samoans & NZ Europeans**

The interactions between spiritual beliefs and ethnicity (p-value 0.17) and between church attendance and ethnicity (p-value 0.12) were not found to be significantly different for Samoans and NZ European students.

### **Samoans**

For Samoan students, gender (p-value 0.0046) was the only variable found to be significantly associated with the age of first kissing. Church attendance (p-value 0.31) and importance of spiritual beliefs (p-value 0.18) were not found to be significantly associated.

#### ***Gender***

Samoan females reported having their first experience of kissing later compared to Samoan males [OR 1.883, 95% CI (1.215-2.919)]. The mean age of first kissing experience for Samoan females was 12 years and 2 months compared to Samoan males where the mean age was 11 years and 7 months.<sup>84</sup>

### **NZ Europeans**

Church attendance (p-value <.0001) was found to be significantly associated with the age NZ European students had their first kiss. However, the importance of spiritual beliefs (p-value 0.62) was not found to be significant.

#### ***Church attendance***

The general pattern shows that attending church influences the age of first kissing for NZ European students. For example, students who reported attending church 'often' experienced their first kiss later than the NZ European respondents who reported 'never' attending church [OR 1.702, 95% CI (1.362-2.127)]. NZ European students who reported 'sometimes' attending church also experience their first kiss later than NZ European students who reported 'never' attending church [OR 1.371, 95% CI (1.129-1.666)].

A similar pattern was shown for students who 'hardly ever' attend church, in that they too experienced their first kiss later compared with NZ European students who 'never' attended church [OR 1.176, 95% CI (1.030-1.343)].

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<sup>84</sup> See Appendix 5 for the confidence limits for the mean age of kissing for Samoan students and the mean ages of kissing for NZ European students.

### ***Discussion***

For Samoan students, the only variable that did appear to have an influence in the age of first kissing experience was gender, with Samoan females reporting a later age of kissing than Samoan males. Neither church attendance nor importance of spiritual beliefs was associated with the age of first kissing experience. These findings do not support the theory that spiritual engagement is associated with delaying kissing debut.

However, most interesting was the finding that church attendance was found to be associated with the age of first kissing experience for NZ European students but not for Samoan students. For NZ European students, there appeared a delay in kissing debut if a student attended church compared to those who did not attend church. This finding concurs with existing literatures that suggest church attendance has a protective effect on sexual activity.

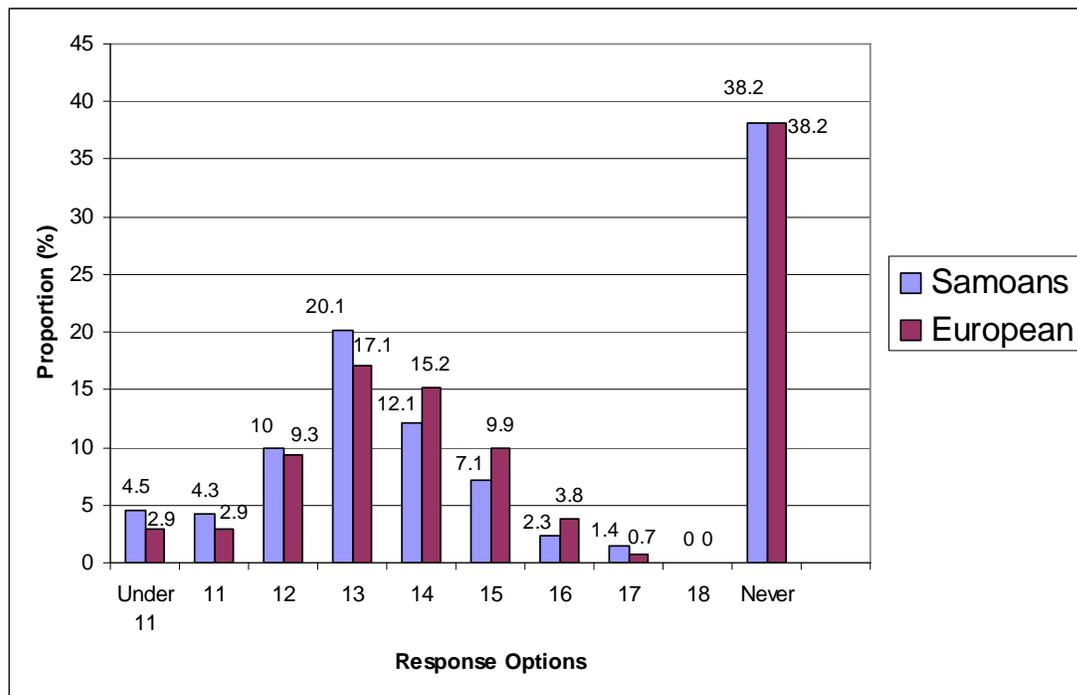
The importance of spiritual beliefs was not found to be associated for either group. This finding does not support the theory that spiritual engagement (as explored by importance of spiritual beliefs) is associated with delaying kissing debut.

These findings raise some interesting questions. Why are there differences between males and females? And why does attending church influence the NZ European students' age of first kiss, but not Samoans age of first kiss? Further discussion of these findings will be made in Chapter 6.

## 2) Age of first sexual touching

Students in the survey were asked, 'About how old were you when you first had an experience of sexual touching? (e.g. feeling up etc)'. The results as presented in Figure 4, have excluded students who report that sexual touching was unwanted.<sup>85</sup> It is interesting to note that just under two thirds of students reported having had an experience of sexual touching (Samoan 61.8% and NZ Europeans 61.8% respectively).

Figure 4: Age of first Sexual Touching experience



For students who reported having had an experience of sexual touching, over half of Samoan and NZ European students report this experience happening before 16 years (Samoan 58.1% and NZ Europeans 57.3%) as depicted in Table 19 on page 95.

<sup>85</sup> The exclusion of this data is discussed in the Research Methods - Chapter 4, section 2.

Table 19: Age of First Sexual Touching experience

Ethnic Group	Under 11	11	12	13	14	15	16	17	18	Sexually touched	Never
<b>Samoans</b>											
Percentage	4.5	4.3	10.0	20.1	12.1	7.1	2.3	1.4	0.0	61.8	38.2
Frequency	24	23	50	102	61	37	12	7	0	316	
Cumulative Percentage	4.5	8.8	18.8	38.9	51.0	58.1	60.4	61.8		61.8	
<b>NZ European</b>											
Percentage	2.9	2.9	9.3	17.1	15.2	9.9	3.8	0.7	0.0	61.8	38.2
Frequency	141	138	451	835	741	485	188	32	2	3013	
Cumulative Percentage	2.9	5.8	15.1	32.2	47.4	57.3	61.1	61.8		61.8	

### ***What factors are associated with the age of first sexual touching?***

Literature suggests that sexual touching is frequently a precursor to sexual intercourse (Davis & Lay-Yee 1999). Evidence suggests that high spiritual engagement is associated with delaying sexual activity (Sheftel et al., 2007). An examination of whether spiritual engagement is associated with the average age of first sexual touching experience was undertaken.

The reader is reminded that sexual touching involves a range of behaviours that spread across a continuum.<sup>86</sup> Certain variables were not included in the statistical modelling, such as ‘age’ (i.e. how old are you?) because age was part of the outcome variable (i.e. age of first kissing experience). Students who reported that sexual touching was unwanted were also removed from analysis.

### **Samoans & NZ Europeans**

For Samoans and NZ Europeans, the interaction between spiritual beliefs and ethnicity was statistically significant (p-value <0.0048). However, the interaction between church attendance and ethnicity was not significant (p-value 0.28)

### **Samoans**

Importance of spiritual beliefs (p-value 0.07) and sex (gender) (p-value <0.036) were found to be significantly associated with the age of first sexual touching for Samoan students. However church attendance (p-value 0.70) was not found to be significantly associated.

<sup>86</sup> As discussed previously in the Literature Review. See chapter 2.3: Sexual Health

### ***Importance of spiritual beliefs***

Samoan students who reported that their spiritual beliefs were 'very important' had their first experience of sexual touching later than Samoan students who reported that their spiritual beliefs were 'not important' [OR 5.066, 95% CI (1.423-18.038)]. The average age of first sexual touching was similar for Samoan students who reported that their beliefs are 'somewhat important' as it was for Samoan students who reported that their spiritual beliefs were 'not important' [OR 2.397, 95% CI (0.572-10.042)].

### ***Sex (Gender)***

Samoan females reported their first experience of sexual touching occurred later compared to Samoan males [O.R 2.709, 95% CL (1.063-6.903)]. The mean age of first sexual touching for Samoan females was 12 years and 8 months compared to Samoan males where the mean age was 11 years and 11 months.<sup>87</sup>

### **NZ Europeans**

Church attendance (p-value 0.29) and importance of spiritual beliefs (p-value 0.76) were not found to be significantly associated with the age of first sexual touching for NZ European students.

### ***Discussion***

Gender appears to have an influence on the age of sexual touching. Findings suggest that Samoan females report a later age of sexual touching compared to Samoan males. An interesting finding is that the rated importance of spiritual beliefs is found to be associated with sexual touching for Samoan students, but not for NZ European students. This finding supports the theory that spiritual engagement (when measured by importance of spiritual beliefs) delays sexual activity.

However, for Samoan students and NZ European students, 'church attendance' was not found to influence the age of sexual touching. For NZ Europeans the rated importance of spiritual beliefs was also not found to be associated. These findings do not support the theory that spiritual engagement (as measured by church attendance) is associated with delaying sexual touching debut. These findings raise some interesting points, such as the influence of gender on kissing experience. As well, it begs the question why does the importance of spiritual beliefs differ between Samoan and NZ European students and their age of first sexual touching? These questions are explored in the following chapter.

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<sup>87</sup> See Appendix 6 for confidence limits for mean age of kissing for Samoan students and for the mean ages for NZ European students.

### 3) Students who have not had sexual intercourse

Students in the survey were asked ‘About how old were you when you first had an experience of sex? (By this we mean sexual intercourse or going all the way)’. Students were able to select from a range of age categories, including ‘never’. This section discusses the findings related to those students who reported that they had not had sex.

A large proportion, approximately two-thirds (67.9%) of Samoan respondents and approximately three-quarters (74.8%) of NZ European respondents reported never having had an experience of sexual intercourse.

Figure 5: Sexual Intercourse response rates

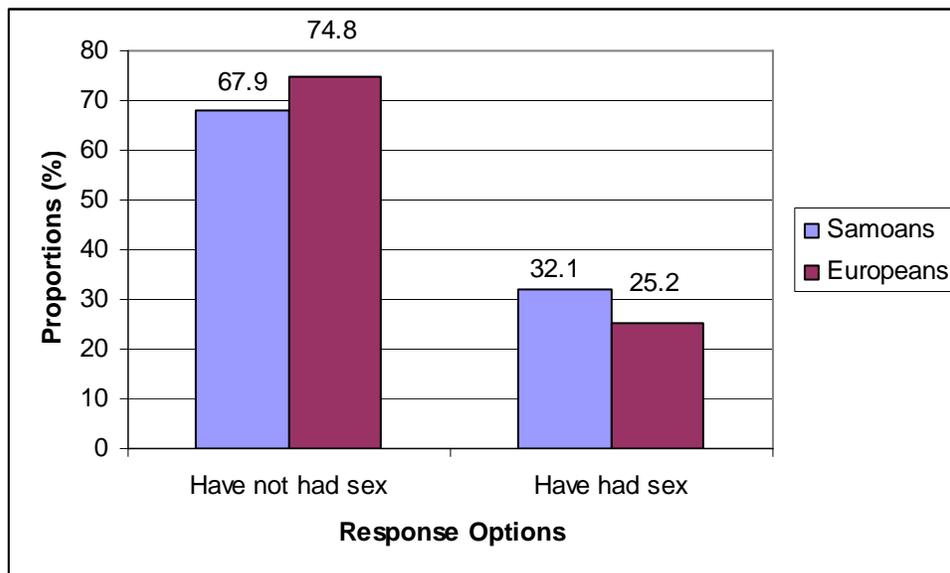


Table 20: Sexual Intercourse response rates

	Never had sex	Have had sex
<b>Samoans</b>		
Percentage	67.9 %	32.1%
Frequency	375	176
<b>NZ European</b>		
Percentage	74.8 %	25.2 %
Frequency	3723	1255

## Reasons given for not having sexual intercourse

For those students who answered that they have 'never' had sex, the following question was asked '*I have not had sex because...? (you can answer as many as apply to you)*'. There were interesting differences between Samoan and NZ European responses with regards to the possible reasons why they chose not to have sex as shown in Table 21.

The most common reason cited by Samoan respondents was that they wanted to wait until they were older (73.3%). The second most common reason was: not wanting to risk pregnancy (53.1%), followed by wanting to wait until they were married (46.0%). In contrast the top three reasons given by NZ European students was that they had not met anyone to do it with (58.6%), followed by wanting to wait until they were older (57.%) and thirdly, not having the opportunity to do it (39.5%).

A larger proportion of Samoan students (27.4) compared to NZ Europeans students (11.2%) cite religious values as a reason for not having had sex.

Table 21: Reasons students given by Samoan and NZ European students for not having sexual intercourse

Reasons Given	Samoan Proportion (%)	NZ European Proportion (%)
I want to wait till I am older	73.3	57.5
I don't want the risk of pregnancy	53.1	35.3
I want to wait until I am married	46.0	16.1
I haven't met anyone I want to do it with	40.2	58.6
I'm not emotionally ready for it	38.3	22.5
Fear of Disease	34.4	14.1
My religious values	27.4	11.2
It doesn't interest me	25.3	9.9
I haven't had the opportunity to do it	20.0	39.5
I'm scared of what it could be like	20.0	12.2
Other	10.7	6.5
I have had a bad experience in the past	2.5	1.8

### ***What factors are associated with ever having sex?***

Studies have found that high spiritual engagement is associated with delaying sexual activity (Sheftel et al., 2007). This question is concerned with examining whether spiritual engagement is associated with ever having sex.

#### **Samoans & NZ Europeans**

For Samoans and NZ Europeans, the interaction between spiritual beliefs and ethnicity was statistically significant (p-value 0.0173). There was also some evidence of an interaction between church attendance and ethnicity (p-value 0.055).

#### **Samoans**

The importance of spiritual beliefs (p-value 0.0133) and sex (gender) of Samoan students (p-value 0.0407) were found to be significantly associated with ever having had sex. However, church attendance (p-value 0.33) and age (p-value 0.06) were not found to be significantly associated.

##### ***Importance of spiritual beliefs***

Samoan students were 65% less likely to ever have had sex if spiritual beliefs were 'very important' compared to Samoan respondents who report that spiritual beliefs were 'not important' [OR 0.347, 95% CI (0.159-0.759)].

Similarly, Samoan students who reported that their spiritual beliefs were 'slightly important' were 64% less likely to have ever had sex compared to Samoan respondents who report spiritual beliefs were 'not important' [OR 0.363, 95% CI (0.182-0.723)].

##### ***Sex (Gender)***

Samoan females were forty percent less likely to have ever had sex compared to Samoan males [OR 0.599, 95% CI (0.367-0.979)].

#### **NZ Europeans**

In contrast, church attendance (p-value <0.0001) was significantly associated with ever having sex for NZ European students. However, importance of spiritual beliefs (p-value 0.5830) was not associated for these students.

### ***Church attendance***

NZ European students were 70% less likely to ever have had sex if they reported attending church 'often' compared to NZ European respondents who reported 'never' attending church [OR 0.298, 95% CI (0.214-0.415)].

The students who reported attending church 'sometimes' were 40% less likely to ever have had sex compared to those who reported 'never' attending church [OR 0.590, 95% CI (0.454-0.767)].

Those who reported attending church 'hardly ever' were 16% less likely to ever have had sex compared to those who reported 'never' attending church [OR 0.837, 95% CI (0.704-0.995)].

### ***Discussion***

As shown by the interactions between the Samoan and NZ European results, there were differences in the associations between church attendance, spiritual beliefs and ever having sex.

For Samoan students, gender and the importance of spiritual beliefs were associated with ever having sex. Samoan females were less likely to have sex compared to their male counterparts. Most interesting is the influence of spiritual beliefs. Findings generally show that Samoan students who rate their spiritual beliefs as important are less likely to ever have sex compared to those who state their spiritual beliefs are not important. The general pattern suggests that for Samoan students, the importance of spiritual beliefs is a protective factor against sexual intercourse. However on the other hand, there was no evidence found to suggest that church attendance is associated with ever having sex.

For NZ European students, church attendance was associated with ever having sex. Findings generally show that NZ European students who attend church are less likely to ever have sex compared to those who do not. This finding supports the proposition church attendance is a protective factor, but only for NZ European students. However, in contrast to the Samoan findings, there was no evidence that the importance of spiritual beliefs for NZ European students was associated with ever having sex.

It is remarkable that the two spiritual engagement variables: church attendance and importance of spiritual beliefs operate differently for the two ethnic groups. These findings raise some interesting questions which will be discussed in the next chapter.

## 5.4) Post-coital experiences

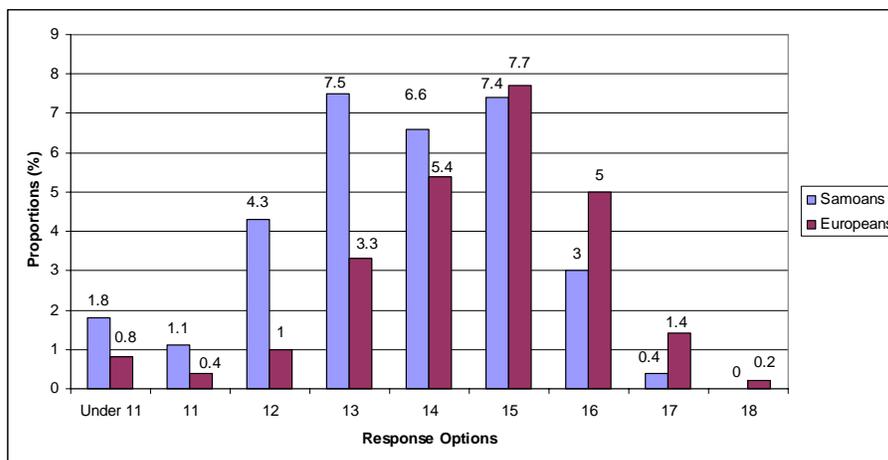
This section explores the range of sexual health activities as reported by sexually active students.<sup>88</sup> It is important to reiterate that a large proportion of Samoan and NZ European students have not had sex (67.9% and 74.8% respectively). Therefore the findings from this question onwards derive from a much smaller sample of Samoan students and NZ European students who reported having had sexual intercourse.

### 1) First sexual intercourse

Students were asked 'About how old were you when you first had an experience of sex? (By this we mean sexual intercourse or going all the way)'. This question provided details on the proportion of those students who have had sex and the age of the first sexual encounter. Similar to the first kissing and sexual touching responses, these results have excluded students who reported that the sexual contact was unwanted.

Just under a third of Samoan students (32.1% n=176) and approximately a quarter of European students (25.2% n=1255) have had sex. Figure 6 shows the reported age of first sexual intercourse by the students from the two ethnic groups.

Figure 6: Age of first sexual intercourse



<sup>88</sup> For the purposes of this discussion, the term 'sexually active' refers to the group of students who have reported sexual activity.

As shown in Table 22, almost twice the proportion of Samoan students have reported their first experience of sex occurring before the age of 15 compared to NZ European students (21.3% and 10.9% respectively).

Table 22: Proportion of students who have had sex by age

	Under 11	11	12	13	14	15	16	17	18	Have had sex
<b>Samoans percentage</b>	1.8	1.1	4.3	7.5	6.6	7.4	3.0	0.4	0.0	32.1
<b>frequency</b>	11	7	23	41	36	39	17	2	0	176
<b>Cumulative percent</b>	1.8	2.9	7.2	14.7	21.3	28.7	31.7	32.1		
<b>NZ European percent</b>	0.8	0.4	1.0	3.3	5.4	7.7	5.0	1.4	0.2	25.2
<b>Frequency</b>	42	17	49	163	278	378	249	71	8	1255
<b>Cumulative percent</b>	0.8	1.2	2.2	5.5	10.9	18.6	23.6	25.0	25.2	

### Average age of first sexual intercourse

There are no large differences in the reported average age of first experience of sex for Samoan and NZ European respondents. Samoan and NZ European males' debuted slightly earlier compared to their female counterparts. The mean age of first sexual intercourse for:

- Samoan females was 14 years ;
- Samoan males was 13 years and 9 months;
- NZ European females was 14 and 8 months, and;
- NZ European males was 14 years and 4 months.<sup>89</sup>

As noted in Table 23 a higher proportion of sexually active Samoan students attended church 'often' (39%) and reported that their spiritual beliefs were 'very important' to them (60%). In contrast, a smaller proportion of sexually active NZ European students attended church 'often' (6%) and reported that their spiritual beliefs were 'very important' to them (22%). It is important to reiterate that these findings refer to the small group of students who have had sexual intercourse. This analysis excludes students who stated that sexual intercourse was unwanted.

<sup>89</sup> See Appendix 8 for the confidence limits for the mean age of kissing for Samoan students and the mean ages of sexual intercourse for NZ European students.

Table 23: Proportions of sexually active students and patterns of Spiritual Engagement

Spiritual Engagement		Samoans		NZ Europeans	
		Frequency	Percentage	Frequency	Percentage
1	Often	57	39%	74	6%
2	Sometimes	45	29%	116	10%
3	Hardly Ever	20	13%	270	23%
4	Never	28	19%	711	61%
<i>Totals</i>		<b>150</b>	<b>100%</b>	<b>1171</b>	<b>100%</b>
Spiritual Beliefs					
1	Very Important	84	60%	250	22%
2	Somewhat Important	34	25%	435	38%
3	Not Important	21	15%	469	40%
<i>Totals</i>		<b>139</b>	<b>100%</b>	<b>1154</b>	<b>100%</b>

***What factors are associated with the age of first sex?***

Studies have found that high spiritual engagement is associated with delaying sexual activity (Bingham, Miller & Adams 1990 as cited in Wilcox et al, 2001; Hardy & Raffaelli, 2003; Sheftel et al., 2007). An examination of whether spiritual engagement was associated with the age of first sexual intercourse was undertaken.

The variables were redefined in this statistical test, partly because of smaller numbers. Respondents were categorised into two groups: those who reported first sexual intercourse occurring aged 14 years or under; and those who report first sexual intercourse after age 15. The age of the students (i.e. how old are you) were not included in the analysis because age was part of the outcome variable (i.e. age of first kissing experience). Students who reported that sexual intercourse was unwanted were also removed from analysis.

**Samoans & Europeans**

For Samoans and Europeans, both the interactions between church attendance and ethnicity (p-value 0.0008) and spiritual beliefs and ethnicity were statistically significant (p-value 0.0040).

**Samoans**

Church attendance (p-value 0.0038) and the importance of spiritual beliefs (p-value 0.0037) were found to be significantly associated with having had sex. However, age (p-value 0.16) and sex (gender) (p-value 0.16) were not found to be associated.

### ***Church attendance***

For Samoan students who 'often' attended church, the age of first sexual intercourse was earlier compared to the Samoan students who 'never' attended church [OR 0.157; 95% CI (0.043-0.577)].

A similar finding was found for those who 'sometimes' attended church earlier compared to those who 'never' attended church. Those that 'sometimes' attended church debuted earlier than those who reported 'never' attending church [OR=0.187 95% CI (0.049-0.710)].

The age of first sexual intercourse for those who 'hardly ever' attended church was similar to those who reported 'never' attending church [OR 0.954, 95% CI (0.324- 2.807)].

### ***Spiritual beliefs***

For Samoan students whose spiritual beliefs were 'very important', the age of first sex was later compared to Samoan students who reported spiritual beliefs were 'not important' [OR 7.840, 95% CI (2.287-26.877)].

For Samoan students who reported that spiritual beliefs were 'somewhat important', the age of first sex was later compared to Samoan students who reported spiritual beliefs are 'not important' [OR 3.783, 95% CI (1.142-12.535)].

### **NZ Europeans**

Neither church attendance (p-value 0.20) nor importance of spiritual beliefs (p-value 0.45) was significantly associated with the age of first sexual intercourse for NZ European students.

### ***Discussion***

The findings are quite remarkable. Samoan students who rated their spiritual beliefs as 'important' have their sexual intercourse debut later than Samoan students who rate their beliefs as 'not important'. This finding supports the general theory that spiritual engagement (as measured by importance of spiritual beliefs) protects a young person from early sexual activity. However, an inverse relationship appears for church attendance. Students who attended church 'often' are more likely to debut earlier compared with Samoan students who 'never' attended church. These findings are in contrast with international literatures that suggest that church attendance is a protective factor for young people as it delays sexual health activity.

For NZ European students, the fact that neither church attendance nor spiritual beliefs are significantly associated do not support the theory that high spiritual engagement is associated with delaying sexual intercourse. These findings raised are unusual - why does attending church and having a spiritual belief feature differently for Samoan students and not for NZ European students? This question is discussed in the following section.

## 2) Use of a condom at first sexual intercourse

Students in the survey were asked ‘When you first had sex did you use a condom?’ Ninety-five percent of sexually active<sup>90</sup> Samoan students and 98.9 percent of sexually active NZ European students responded to this question. This equates to approximately 28 percent of all Samoan students and 25 percent of all NZ European students in the total survey.

Figure 7 shows whether a condom was used during first sexual intercourse. Over half (55.3%) of sexually active Samoan students and three-quarters (77.1%) of sexually active NZ European students used a condom at first sex.

Figure 7: Use of a condom at first sex

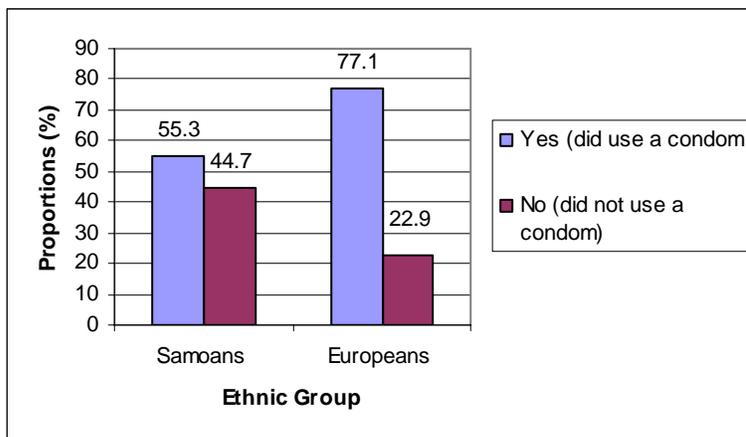


Table 24: Use of a condom at first sexual intercourse

Ethnicity		Yes (did use a condom)	No (did not use a condom)
Samoans	Percentage	55.3	44.7
	Frequency	100	82
NZ Europeans	Percentage	77.1	22.9
	Frequency	1025	306

An outline of the gender and ethnic breakdown for the students who reported using a condom and for those who did not use a condom at first sexual intercourse is provided.

<sup>90</sup> For the purposes of this discussion, the term ‘sexually active’ refers to the group of students who have reported sexual activity.

### Those who did use a condom at first sexual intercourse

As shown in Figure 8, there were gender differences for those that did use a condom at first sex. Approximately two thirds (63%) of Samoan males reported using a condom compared with only 44% of European males.

Figure 8: Did use a condom at first sex as explored by ethnicity and sex (gender)

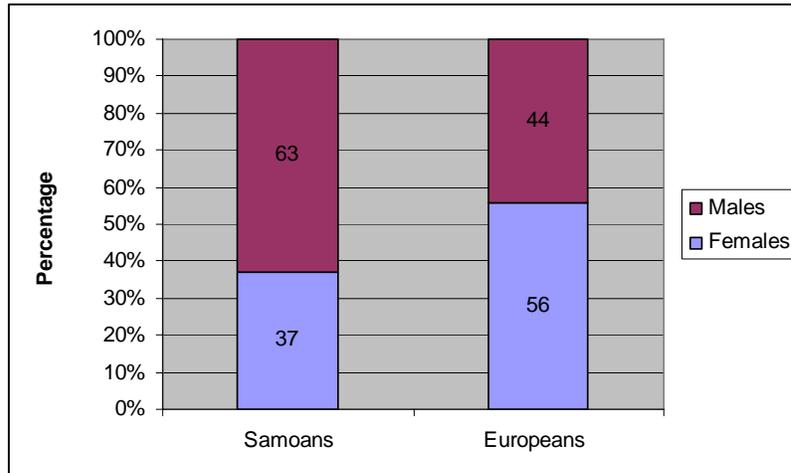


Table 25: Use of a condom at first sex - Gender Breakdown

Gender		Ethnicity	
		Samoan	NZ European
Females	Percentage	37%	56%
	Frequency	37	577
Males	Percentage	63%	44%
	Frequency	63	448

**Those who do not use a condom at first sex**

A higher proportion of Samoan females (60%) reported that they did not using a condom at first sex. For NZ Europeans, the rates are similar between males and females, 50 percent of males and 50 percent of females reported not using a condom as shown in Figure 9.

Figure 9: Proportion of Students who did not use a condom at first sex by sex (gender)

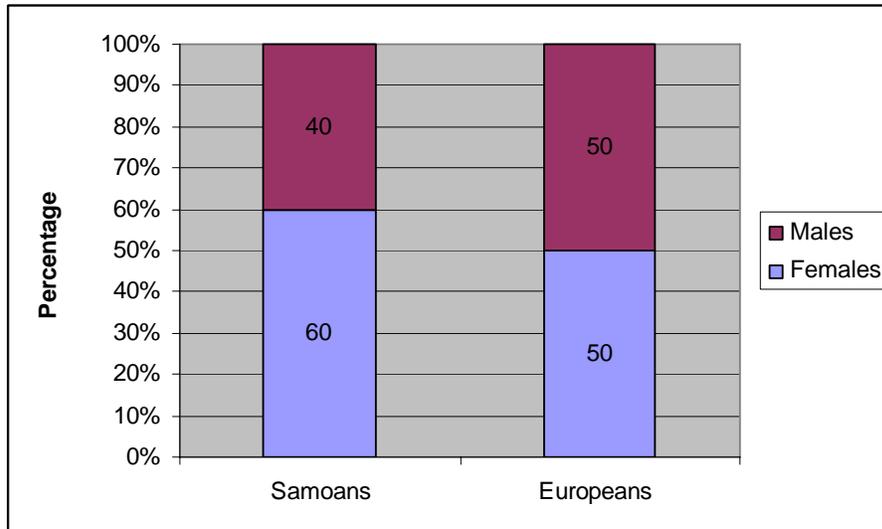


Table 26: Proportion of students who reported ‘not using a condom at first sex’ as explored by sex (gender) and ethnicity

Gender		Ethnicity	
		Samoan	NZ European
Females	Percentage	60%	50%
	Frequency	49	155
Males	Percentage	40%	50%
	Frequency	33	151

### ***What factors are associated with the use of condom at first sex?***

Studies have found that high spiritual engagement is associated with less frequent condom and contraception use after coitarche (first sexual (genitogenital) intercourse) (Sheftel et al., 2007). An examination was undertaken to determine whether spiritual engagement is associated with the use of condoms at first sex.

#### **Samoans & Europeans**

For Samoans and Europeans, both the interactions between church attendance and ethnicity (p-value 0.13), and between spiritual beliefs and ethnicity were not found to be significant (p-value 0.95).

#### **Samoans**

For Samoan students, only sex (gender) was found to be significantly associated with the use of condoms at first sex (p-value 0.0249). Church attendance (p-value 0.21), importance of spiritual beliefs (p-value 0.40) and age (p-value 0.143) were not found to be associated.

#### ***Sex (Gender)***

Samoan females were 60 percent less likely to use a condom at first sex than Samoan males (OR=0.403, CI=0.182; 0.892).

#### **NZ Europeans**

Neither church attendance (p-value 0.3008) nor the importance of spiritual beliefs (p-value 0.2766) was significantly associated with the use of condoms at first sex.

#### ***Discussion***

Findings reveal that neither church attendance nor importance of spiritual beliefs is significantly associated with the use of condoms at first sex for both Samoan and NZ European students. However, interestingly is the finding that Samoan females are less likely to use condoms at first sex than males. Further investigation into the reasons why this may be would be of benefit and will be discussed in the following chapter.

### 3) Use of contraception during sex

Students in the survey were asked ‘How often do you or your partner use contraception? (by this we mean protection against pregnancy)’. Ninety eight percent of sexually active Samoan students and 99.4 percent of sexually active NZ European students answered this question. This equates to 29 percent of Samoan students and 26 percent of all NZ European students of the total sample.

A higher proportion of sexually active NZ European students (65%) reported always using contraception compared to Samoan students (44.1%). As illustrated in Figure 10 Samoan students did not use contraception as frequently as their NZ European peers.

Figure 10: Use of contraception when having sex

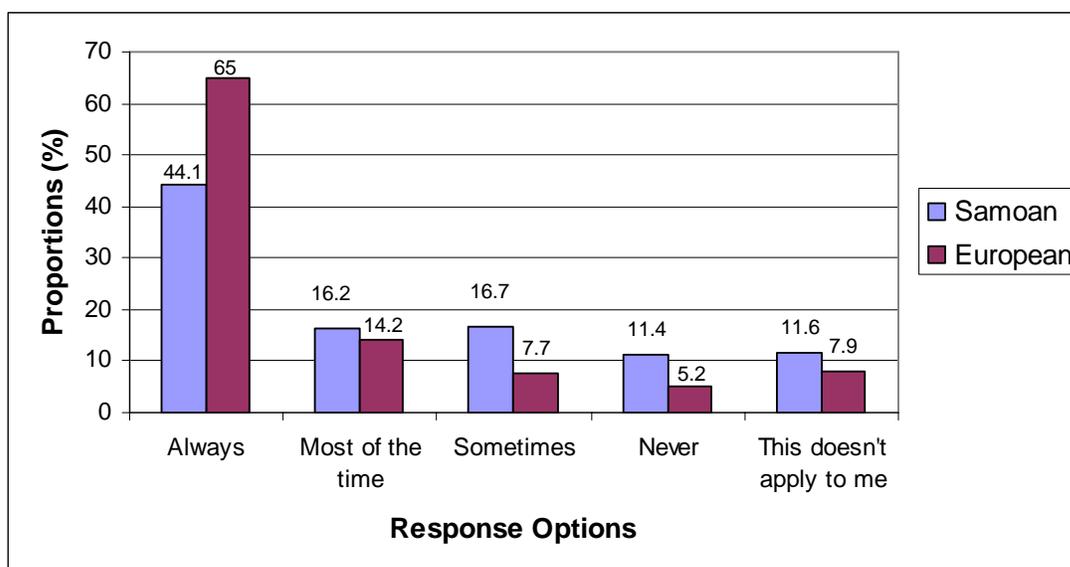


Table 27: Use of contraception when having sex

		Always	Most of the time	Sometimes	Never	This doesn't apply to me
Samoans	Percentage %	44.1	16.2	16.7	11.4	11.6
	Frequency	81	31	31	22	22
NZ European	Percentage %	65.0	14.2	7.7	5.2	7.9
	Frequency	873	189	101	70	106

### ***What factors are associated with the pattern of use of contraception?***

Studies have found that high spiritual engagement is associated with less frequent condom and contraception use after coitarche (first sexual (genitogenital) intercourse) (Sheftel et al., 2007). In the examination of whether spiritual engagement is associated with the pattern of use of contraception, the variables were redefined in this statistical test. Of the possible responses to question of how often contraception is used, students could either respond with: 'always', 'most of the time', 'sometimes', 'never' and 'this doesn't apply to me'. For the purposes of this analysis, the data relating to those responding 'this doesn't apply to me' were removed from analysis, as this response option could not be explained and classified for meaningful analyses.

#### **Samoans & NZ Europeans**

For Samoan and NZ European students, the interaction between church attendance and ethnicity (p-value 0.31), and spiritual beliefs and ethnicity (p-value 0.22) were not found to be statistically significant.

#### **Samoans**

For Samoan students, sex (gender) (p-value <.0001) was found to be significantly associated with how often contraception was used. However, church attendance (p-value 0.61), importance of spiritual beliefs (p-value 0.95) and age (p-value 0.19) were not found to be associated.

##### ***Sex (gender)***

Samoan females were 74 percent less likely to always use contraception compared to males (OR=0.259, CI=0.134, 0.503).

#### **NZ Europeans**

For NZ European students neither church attendance (p-value 0.1028) nor the rated importance of spiritual beliefs (p-value 0.80) was significantly associated with the use of contraception.

#### ***Discussion***

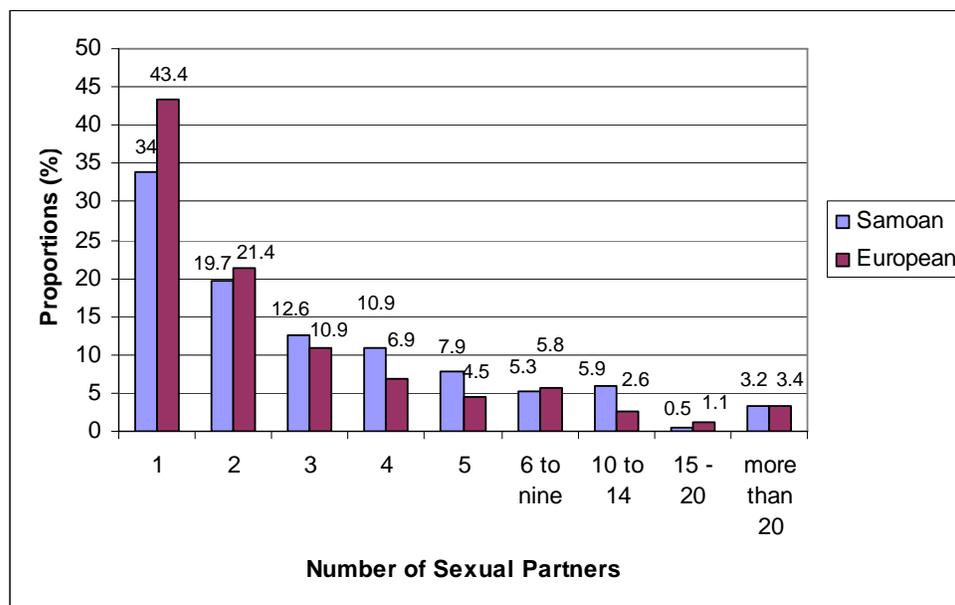
For Samoan students, only sex (gender) was significantly associated with the often use of contraception, with Samoan females less likely to use contraception compared to their male peers. Of particular interest is that neither of the spiritual engagement variables (church attendance and importance of spiritual beliefs) was associated with the use of contraception. These findings do not confirm the theory that spiritual engagement is associated with the use of contraception.

#### 4) Number of sexual partners

Students in the survey were asked, 'During your life about how many people have you had sex with?'. Students were able to report either: 1, 2, 3, 4, 5, 6-9, 10-14, 15-20 and more than 20 sexual partners. Ninety one percent of sexually active Samoan students and 98 percent of sexually active NZ European students answered this question. This equates to approximately 27 percent of all Samoan students and 25 percent of all NZ European in the total survey.

Figure 11 illustrates the number of sexual partners as reported by sexually active Samoan and NZ European students. The general pattern shows that the proportions of students' decreases as the number of sexual partners increase. For example, 34 percent of Samoan students report one sexual partner. However this decreases to 19.7 percent for those students who report two sexual partners, with only 3.2 percent of Samoans reporting more than 20 partners.

Figure 11: Reported number of sexual partners



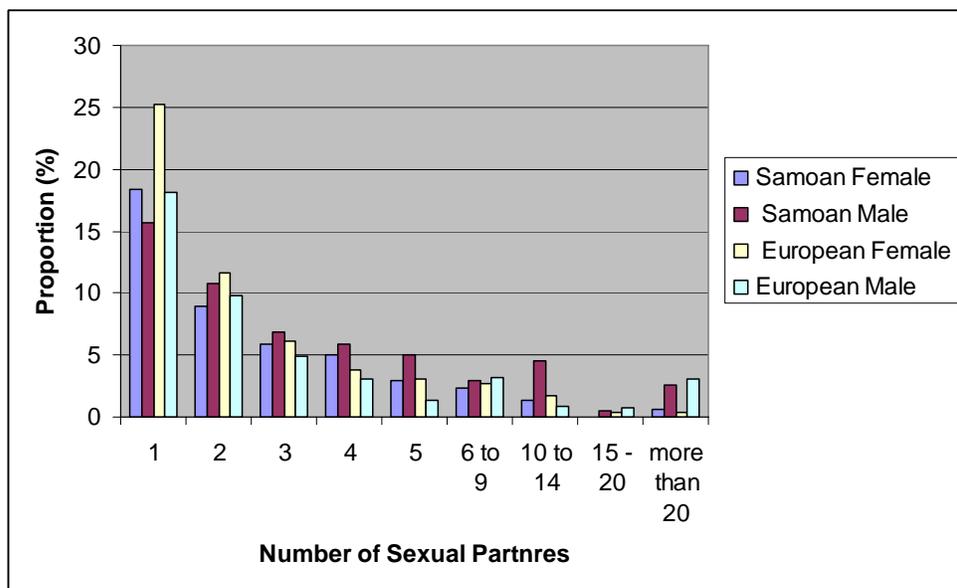
A large proportion of sexually active students (53.7 % Samoan & 64.8% NZ European students), reported having between 1 and 2 sexual partners as outlined in Table 28.

Table 28: Number of sexual partners

		1-2	3 - More than 20
<b>Samoans</b>	%	53.7%	46.3%
	F	95	80
<b>NZ European</b>	%	64.8%	35.2%
	f	849	466

When explored by gender, 18 percent of Samoan females reported having one sexual partner (as depicted in Figure 12). On the other end of the continuum, a smaller proportion of Samoan females reported having more than 20 partners. It appears that gender may have an influence on reporting rates. As noted in Table 29, five of the six Samoan students who reported having more than 20 partners were males. A similar pattern was found with Europeans. Of the 46 European respondents who reported having more than 20 sexual partners, 41 of these respondents were males.<sup>91</sup> Having more than 20 sexual partners is an alarming and high-risk behaviour, especially due to the risk of contracting and passing on sexually transmitted infections as well as becoming pregnant (or causing a pregnancy).

Figure 12: Proportions of the number of sexual partners by ethnicity and gender



<sup>91</sup> Issues relating to gender responses are discussed in Chapter 6.

Table 29: Number of sexual partners as explored by sex (gender)

		1	2	3	4	5	6-9	10-14	15-20	More than 20
<b>Samoans</b>	Percentage	34.0	19.7	12.6	10.9	7.9	5.3	5.9	0.5	3.2
	Frequency	61	34	23	19	12	9	10	1	6
<i>Females</i>	Percentage	18.4	8.9	5.8	5.0	2.9	2.4	1.3		0.6
	Frequency	33	15	11	8	5	4	2	0	1
<i>Males</i>	Percentage	15.7	10.8	6.8	5.9	5.0	2.9	4.6	0.5	2.6
	Frequency	28	19	12	11	7	5	8	1	5
<b>NZ European</b>	Percentage	43.4	21.4	10.9	6.9	4.5	5.8	2.6	1.1	3.4
	Frequency	569	280	142	91	59	77	36	15	46
<i>Females</i>	Percentage	25.2	11.6	6.1	3.8	3.1	2.7	1.7	0.4	0.4
	Frequency	334	152	80	51	40	36	24	5	5
<i>Males</i>	Percentage	18.1	9.8	4.8	3.1	1.4	3.2	0.9	0.7	3.0
	Frequency	235	128	62	40	19	41	12	10	41

### ***What factors are associated with the number of sexual partners?***

Studies have suggested that having a religious belief or high spiritual engagement influences the number of sexual partners. Association tests were undertaken to explore whether spiritual engagement was associated with the number of sexual partners. The variables were redefined in this statistical test, partly because of smaller numbers. Respondents were categorised into two groups: those who reported one or two sexual partners; and those who reported between three and more than 20 sexual partners.

#### **Samoans & Europeans**

For Samoans and Europeans, both the interactions between church attendance and ethnicity (p-value 0.0013) and spiritual beliefs and ethnicity (p-value 0.0154) were found to be statistically significant.

#### **Samoans**

For Samoan students, church attendance (p-value 0.0231), importance of spiritual beliefs (p-value 0.0067) and sex (gender) (p-value 0.0015) were found to be significantly associated with the number of sexual partners. However, age was not found to be associated (p-value 0.8090)

#### ***Church attendance***

Samoan students who reported 'often' attending church attendance were more likely to have three or more sexual partners, compared to those who reported 'never' attending

church [OR 7.798, 95% CI (1.372-44.326)]. A similar pattern was found for Samoan students who reported 'sometimes' attending church. These students who 'sometimes' attended were more likely to have three or more sexual partners, compared to those who reported 'never' attending church [OR 6.605, 95% CI (1.558-27.998)].

The analysis showed that the association is similar for those Samoan students who reported 'hardly ever' attending church as it for those who 'never' attend church [OR 1.574, 95% CI (0.322-7.693)]

### ***Spiritual beliefs***

Samoan students who reported spiritual beliefs as 'very important' were less likely to have 3 or more sexual partners, compared with those who reported that their spiritual beliefs were 'not important' [OR 0.132, 95% CI (0.035-0.494)].

The analysis showed that the association was similar for those who reported that their spiritual beliefs are 'somewhat important' as it was for those who reported that spiritual beliefs are 'not important' [OR 0.579, 95% CI (0.181-1.857)].

### ***Sex (Gender)***

Samoan females were less likely to have 3 or more sexual partners compared to Samoan males [OR 0.286, 95% CI (0.132-0.678)].

### **NZ Europeans**

Neither church attendance (p-value 0.07) nor importance of spiritual beliefs (p-value 0.48) was significantly associated with the number of sexual partners.

### ***Discussion***

These are noteworthy findings. Samoan students who rated their spiritual beliefs as 'important' are less likely to have three or more sexual partners compared to Samoan students who rate their beliefs as 'not important'. This finding supports the general theory that spiritual engagement (as measured by importance of spiritual beliefs) is a protective factor for Samoan youth.

However, an inverse relationship appears for church attendance. Students who attended church 'often' are more likely to have three or more sexual partners compared with Samoan students who 'never' attended church. These findings are in contrast with international

literatures that suggest that church attendance is a protective factor for young people as it may lessen the likelihood of having multiple sexual partners.

For NZ European students, the fact that neither church attendance nor spiritual beliefs were found to be significantly associated do not support the theory that high spiritual engagement is associated with reducing the number of sexual partners.

Given that the findings suggest that Samoan females were less likely to have three or more sexual partners compared to Samoan males is encouraging. However, this raises the spotlight on Samoan males and the number of sexual partners they have. When combined with the findings of low levels of contraceptive use, this is an area that has potentially significant consequences for public health and certainly requires further investigation.

## 5) Number of pregnancies

Students in the survey were asked 'How many times have you been pregnant or got someone pregnant?'. Some 19 percent of sexually active Samoan students and 8 percent of NZ European students reported they have been pregnant (or gotten someone pregnant). This equates to approximately 5 percent of all Samoan students and 2 percent of all NZ European students in the total survey.

A small proportion of sexually active Samoan students (11.5%) and NZ European students (5.4%) reported having had one pregnancy. The proportions as shown in Figure 13 display the sum total of responses to this question. As noted in Table 30, thirty-two (32) Samoan students reported having been pregnant or gotten someone pregnant in comparison to 110 NZ European students.

Figure 13: Number of Pregnancies

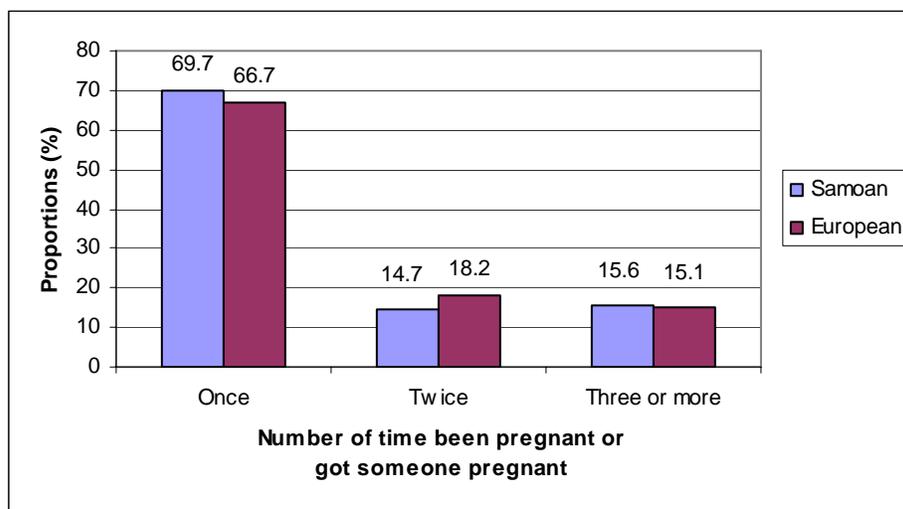


Table 30: Number of Pregnancies

		Once	Twice	Three or more	Total
<b>Samoans</b>	Percentages %	69.7	14.7	15.6	100%
	Frequency	22	5	5	32
<b>NZ European</b>	Percentages %	66.7	18.2	15.1	100%
	Frequency	73	20	17	110

**What factors are associated with pregnancy rates?**

Pregnancy is primarily affected by the initiation of sex, the frequency of sex, and the use of contraception (Kirby et al 2005). Studies have found that high levels of spiritual engagement are associated with delays in sexual activity (Sheftel et al., 2007). Due to the small response numbers, an examination of the associations between spiritual engagement and pregnancy rates could not be undertaken. However, the responses to the question regarding the number of pregnancies and reported rates of spiritual engagement are outlined in Table 31 and Table 32.

A higher proportion of Samoan students that reported ‘sometimes’ attending church, when compared with the other attendance options, reported one pregnancy (30.2%). This was followed by those students who reported ‘hardly ever’ attending church (27.1%) as noted in Table 31. A larger proportion of Samoan students who report that their spiritual beliefs were ‘very important’ to them reported having one pregnancy (36%). It is important to reiterate that these findings refer to the small group of students who have had sexual intercourse. This analysis also excludes students who stated that sexual intercourse was unwanted.

Table 31: Proportions of Samoan pregnancies and patterns of Spiritual Engagement

		Number of Pregnancies					
		1		2		3 or more	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
<b>Spiritual Engagement</b>							
<b>Church Attendance</b>							
1	Often	5	20.7	2	8.7	0	.
2	Sometimes	6	30.2	1	4.0	0	.
3	Hardly Ever	6	27.1	0	.	0	.
4	Never	1	4.5	0	.	1	4.8
	Totals	18	82.5	3	12.7		4.8
<b>Spiritual Beliefs</b>							
1	Very Important	7	36.0	1	5.3	0	.
2	Somewhat Important	5	27.1	1	4.8	0	.
3	Not Important	3	16.4	1	4.7	1	5.6
	Totals	15	79.5	3	14.8	1	5.6

In contrast, a higher proportion of NZ European students that reported that they ‘never’ attended church reported one pregnancy (42.8%) (as depicted in Table 32). Findings also reveal that 10.3 percent of NZ European students who have had three or more sexual partners never attended church. A larger proportion of NZ European students who report that their spiritual beliefs are ‘not important’ to them (29%) reported having one pregnancy.

Table 32: Number of NZ European pregnancies explored by spiritual engagement responses

		Number of Pregnancies					
		1		2		3 or more	
		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
<b>Spiritual Engagement</b>							
<b>Church Attendance</b>							
1	Often	6	6.4	3	3.2	0	.
2	Sometimes	3	3.0	1	1.1	1	0.9
3	Hardly Ever	14	15.3	4	4.5	2	2.0
4	Never	40	42.8	10	10.6	10	10.3
	Totals	63	67.5	18	19.4	13	13.1
<b>Spiritual Beliefs</b>							
1	Very Important	14	14.7	6	6.7	1	1.3
2	Somewhat Important	22	25.1	5	5.7	2	2.0
3	Not Important	26	29.0	6	6.7	9	8.9
	Totals	62	68.8	17	19.0	12	12.2

## 6) Sexually Transmitted Infections

Students were asked ‘have you ever had a sexually transmitted disease or infection?’. Students were able to respond with either a: ‘Yes’, ‘No’ or ‘Not sure’. Nearly all the sexually active Samoan students (98.9%) and 98.4 percent of sexually active NZ European answered this question. This equates to approximately 29 percent of all Samoan students and 26 percent of all NZ European students answered this question.

Of sexually active students, a high proportion of Samoan students (85.6%) and NZ European students (88.7) reported not having any STIs. However, over twice the proportion of sexually active Samoan students (7%) compared to NZ European students (3.3%) reported that they had contracted a sexually transmitted disease or infection. A similar proportion of Samoan and NZ European students reported not being sure if they had or had not contracted a sexually transmitted disease or infection (7.4% and 8.0 respectively). These proportions are depicted in Figure 14.

Figure 14: Reported proportions of having a Sexually Transmitted Infection

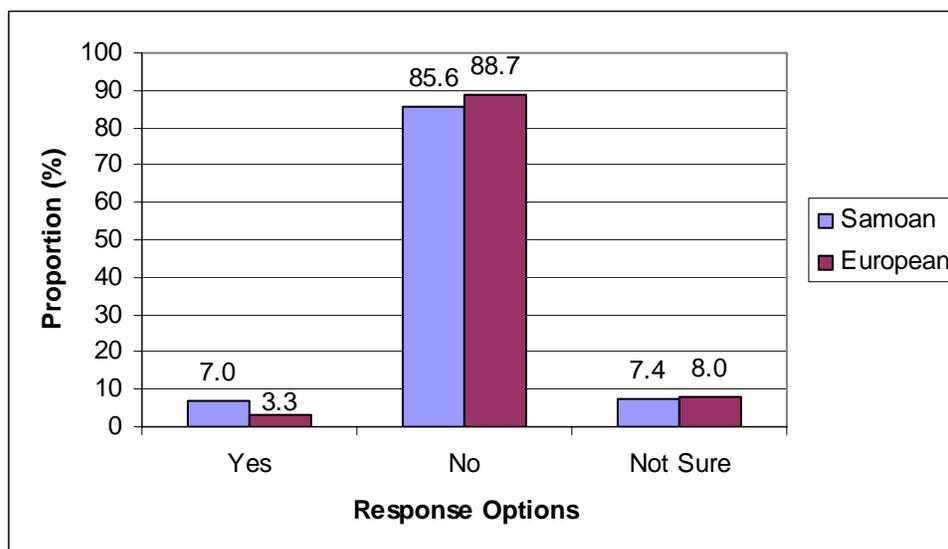


Table 33: Reported proportions of having a Sexually Transmitted Infection

Ethnic Group		Response Options		
		Yes	No	Not sure
<b>Samoans</b>	Percentage	7.0	85.6	7.4
	Frequency	12	164	13
<b>NZ European</b>	Percentage	3.3	88.7	8.0
	Frequency	46	1184	108

### ***What factors are associated with STI rates?***

The transmission of STIs is primarily affected by the initiation of sex, the frequency of sex, the number of sexual partners, and the use of condoms (Kirby et al, 2005). Unfortunately, due to a small number of responses to this question, an analysis of the associations between spiritual engagement and STI rates between Samoan and NZ European students could not be carried out. However, the responses to the questions regarding STIs and reported rates of spiritual engagement are outlined in Table 34 and Table 35.

As depicted in Table 34, a small proportion of Samoan students that reported ‘often’ attending church reported having an STI (1.3%). Similarly, a very small proportion of Samoan students who reported that their spiritual beliefs were ‘very important’ to them reported having an STI (3%). It is important to reiterate that these findings refer to the small group of students who have had sexual intercourse. This analysis also excludes students who stated that sexual intercourse was unwanted.

Table 34: Proportions of STIs and patterns of Spiritual Engagement as reported by sexually active Samoan students

		Sexually Transmitted Infections					
		Response Options					
		Yes		No		Not Sure	
Spiritual Engagement							
Church Attendance		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1	Often	2	1.3	55	34.1	5	3.5
2	Sometimes	4	3.0	40	23.4	4	2.7
3	Hardly Ever	2	1.2	20	12.1	1	0.7
4	Never	1	0.7	27	16.8	1	0.6
	Totals	9	6.1	142	86.3	11	7.5
Spiritual Beliefs							
1	Very Important	4	3.0	81	51.9	7	5.2
2	Somewhat Important	3	2.1	30	20.4	4	2.9
3	Not Important	0	.	22	14.6	0	.
	Totals	7	5.1	133	86.8	11	8.1

As depicted in Table 35, a small proportion of NZ European students that reported 'often' attending church report having an STI (0.3%). Similarly, a very small proportion of NZ European students that reported that their spiritual beliefs were 'very important' to them reported having an STI (1%).

Table 35: Proportions of STIs and patterns of Spiritual Engagement as reported by sexually active NZ European students

		<b>Sexually Transmitted Infections</b>					
		<b>Response Options</b>					
		<b>Yes</b>		<b>No</b>		<b>Not Sure</b>	
<b>Spiritual Engagement</b>							
<b>Church Attendance</b>		Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
1	Often	4	0.3	71	5.8	12	0.9
2	Sometimes	5	0.4	113	8.9	7	0.6
3	Hardly Ever	10	0.7	242	19.4	29	2.3
4	Never	22	1.7	678	54.7	54	4.3
	Totals	41	3.1	1104	88.8	102	8.1
<b>Spiritual Beliefs</b>							
1	Very Important	12	1.0	242	20.0	20	1.6
2	Somewhat Important	12	0.9	412	33.6	38	3.0
3	Not Important	15	1.1	433	35.1	44	3.7
	Totals	39	3.0	1087	88.7	102	8.3

## Summary of Results

The results of this study are summarised here and draw attention to the key issues which will guide the discussion in the following chapter. A summary on the results of association tests between spiritual engagement and pre-coital activities (kissing, touching, and ever had sexual intercourse) is presented in Table 36 on page 123. The results of association tests that explored the relationship between spiritual engagement and post-coital activities: students who have had sexual intercourse; use of condom at first sex; use of contraception; and the number of sexual partners are presented in Table 37 on page 124.<sup>92</sup>

In addition, the findings from this study indicate that:

- For Samoan students, the rates of church attendance and rated importance of spiritual beliefs are quite high when compared with NZ European students.
- Approximately two-thirds of Samoan students and approximately three-quarters of NZ European students have not had sexual intercourse.
- The average age of first kissing experience for Samoan students was 12 years and the average age of first sexual touching experience was between 12 and 13 years.
- Just under a third of Samoan students (32.1%) and approximately a quarter of NZ European students (25.2%) have had sexual intercourse. The average age of first sexual intercourse was between 13 and 15 years for these students.
- Over half (55.3%) of sexually active Samoan students and 77.1% of sexually active NZ European students reported using a condom at first sex.
- A lower proportion of sexually active Samoan students (44.1%) compared with NZ European students (65%) reported always using contraception.
- Over half (53.7%) of sexually active Samoan students and almost two-thirds (64.8%) of NZ European students reported having sex with 1-2 sexual partners.
- A smaller proportion of sexually active Samoan students (11.5%) and NZ European students (5.4%) reported having had one pregnancy.
- High proportions of sexually active Samoan students (85.6%) and NZ European students (88.7) reported not having an STI.

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<sup>92</sup> Due to small response rates the researcher was prevented in testing associations for pregnancy rates and STIs.

Table 36: Spiritual engagement and its associations with pre-coital activities for Samoan and NZ European secondary school students

	Ethnicity					
	Samoan			NZ European		
	Church Attendance	Importance of Spiritual Beliefs	Sex (Gender)	Age	Church Attendance	Importance of Spiritual Beliefs
<b>First Kissing</b>	N/A	N/A	+ Females debut later than males	N/I	+ Students who attend church debut later compared to students who do not attend	N/A
<b>Age of First Sexual Touching</b>	N/A	+ Students who reported spiritual beliefs very important debut later.	+ Females debut later than males	N/I	N/A	N/A
<b>Ever had Sex</b>	N/A	+ Less likely to ever have sex if spiritual beliefs very important	+ Females less likely to ever have sex compared to males	N/A	+ Students who go to church less likely to ever have sex compared to students who do not attend	N/A

Key	
+	Association Found. Variable has a protective effect
-	Association Found. Variable has a risk effect
N/A	No association found
N/I	Variable not included in the analysis

Table 37: Spiritual engagement and its associations with sexual health activities for Samoan and NZ European Secondary students who have had sexual intercourse

	Ethnicity					
	Samoan				NZ European	
	Church Attendance	Importance of Spiritual Beliefs	Sex (Gender)	Age	Church Attendance	Importance of Spiritual Beliefs
<b>Age of first sex</b>	- Students who attend church debut earlier than students who do not attend church	+ Students who reported spiritual beliefs very important debut later.	N/A	N/I	N/A	N/A
<b>Use of condom at first sex</b>	N/A	N/A	- Females less likely to use a condom at first sex	N/A	N/A	N/A
<b>Use of contraception</b>	N/A	N/A	- Females less likely to use contraception	N/A	N/A	N/A
<b>No of Sexual Partners</b>	- Students who attend church more likely to have 3 or more sexual partners	+ Students who reported spiritual beliefs very important are less likely to have 3 or more sexual partners	+ Females less likely to have 3 or more sexual partners	N/A	N/A	N/A

Key	
+	Association Found. Variable has a protective effect
-	Association Found. Variable has a risk effect
N/A	No association found
N/I	Variable not included in the analysis

## **Chapter 6: DISCUSSION**

### **Overview**

This thesis set out to explore whether spiritual engagement, defined by church attendance and importance of spiritual beliefs, are associated with the sexual health activities for Samoan youth in New Zealand.

Sexual activity is a natural human behaviour. We are all human beings with sexual drives. At some stage in our lives we will make choices regarding sexual intercourse, number of sexual partners, use of contraception and childbearing. However, any activity, such as engaging in sexual intercourse has an element of risk. This risk is heightened for adolescents, as it is during this period where there is greater risk-taking (Bensen et al, 2005; Ministry of Youth Affairs 2002). During adolescence (from age 12 to 24 inclusive) there are rapid physiological changes occurring. These years are a critical time for human development. It is during this period that young people build on their experiences from childhood and develop the foundational skills necessary for adulthood (Ministry of Youth Affairs, 2002).

Many adults, policy makers and communities are concerned about adolescent sex. This concern stems from the negative outcomes arising from early transition to sexual behaviour (Ministry of Health, 2001; Miller et al, 2006). Evidence suggests that teenagers are having sex at an earlier age, the age of marriage has increased and there is an increase in the number of sexual partners for this age group (Ministry of Health, 2003; Paul et al., 2000b). These factors contribute to the high rates of unprotected sex therefore increasing the risk of pregnancy and contracting sexually transmitted infections. Further negative outcomes include but are not limited to: interrupted education; poor health and economic status for the adolescent; poor health and poor social development for children born to an adolescent parent (Ministry of Health, 2003; Kirby et al., 2005; Paul et al., 2000a). These outcomes are serious and in some cases, are potentially life-threatening. What is most concerning is that these negative outcomes can be prevented.

Although there have been advances in the status of Pacific peoples living in New Zealand, literature suggests that this population continues to face a number of social and economic disparities (Mental Health Commission, 2001; Ministry of Pacific Island Affairs & Statistics New Zealand, 2002). The sexual health status of Pacific youth is concerning, especially given the high teenage birth rates, high abortion rates for Pacific women and low birth control methods

utilised (Ministry of Health, 2002a; Paterson J et al., 2003). A further challenge in attempting to address these issues is that in many Pacific communities, (such as Samoan communities), the discussion of sex is seen as taboo (Ministry of Health, 2008; Paterson et al., 2004; Tiatia, 1998). Furthermore, some Pacific cultures endorse the cultural and religious values that engaging in sexual activity is to be confined within the boundaries of the traditional institution of marriage (Tiatia, 1998).

Governments and communities actively seek ways to help young people negotiate through the challenging period of adolescence. They try to assist young people to sift through the complex and contradictory messages they get about sex in order for them to make better informed decisions (Bearman & Bruckner, 2001; Ministry of Health, 2003). There is increasing interest in public health about the potential role that 'spirituality' and 'church attendance' play in improving health outcomes. Studies have reported that religious affiliations, practices, and beliefs have an influence the sexual attitudes and activities of adolescents (Wilcox et al., 2001; Kirby 2005).

## **Research Questions**

This research set out to answer the following questions using the Youth 2000 data. It is important to note that the total number of Samoan respondents (n=646) in the Youth 2000 survey, and the even smaller numbers of sexually active Samoans (n=176), may have an effect on the generalisability of the final results.

### ***1. What is the pattern of spiritual engagement in Samoan youth that attend New Zealand secondary schools?***

In this study, a high proportion of Samoan youth often attended church (46.5%) and reported that their spiritual beliefs are 'very important' to them (65.4%). These findings are generally consistent with findings from previous research that show high levels of religious participation amongst the Pacific populations (Statistics New Zealand, 2008c; Ministry of Pacific Island Affairs 2003; Ministry of Social Development 2005).

What is most interesting are the findings that 16 percent of Samoan secondary school students reported 'never' going to church and 8.6 percent reported that spiritual beliefs were 'not important' to them. These findings are similar to those found in the New Zealand 2006 national census where 14 percent of Pacific peoples stated that they had no religion (34,833) (Statistics New Zealand 2008c). Defining features of the non-religious Pacific group was that most were New Zealand-born and were concentrated in the younger age groups (Statistics New Zealand 2008c). There are several possible explanations that may account for these rates, such as the influence of mixed-marriages and changing values and beliefs of Pacific peoples. Literature indicates that Pacific parents have a strong influence with their children's attendance at church (Tiatia, 1998). However, as noted in western literatures, it is during adolescence that young people become more independent (Wilcox et al., 2001) and begin to question their participation and association with various activities, including church attendance (Ministry of Health 2008). This may well be the case for Pacific youth born in New Zealand as Pacific literature suggests that some New Zealand-born young people are leaving the traditional mainstream churches of their parents and joining charismatic churches (Tiatia, 1998). It would be interesting to learn what types of sexual health messages are being promoted at these churches. Future research into this area would be useful given: the current strategies with Pacific churches; the youthful New-Zealand population structure; and the subsequent influence this may have on future church attendance rates.

## ***2. What are the patterns of sexual health status and behaviours of Samoan youth that attend New Zealand secondary schools?***

### ***Not had sexual intercourse***

It is encouraging to note that a significant proportion (67.9%) of Samoan young people had not had sexual intercourse. As noted by Paul, et al., (2000) there may be a number of reasons for remaining a virgin: moral or religious beliefs; fear of pregnancy; not being ready; and not being in love enough. Findings from this thesis study suggest the influence of social, cultural and spiritual values upon the decision to not have sex. The most common reasons reported by Samoan students were that they wanted to wait until they were older, did not want to get pregnant and would rather wait until marriage. There is the likelihood that parental and societal expectations that girls should wait for marriage (Paul et al., 2000b) may influence the sexual health decisions of Samoan youth, especially given the high expectations of upholding the family honour (Anae et al., 2000; Tupuola, 2000). Furthermore, literatures support the idea that young people may choose not to have sexual intercourse outside of marriage or outside of an important emotional relationship (Jenson et al 1994 as cited in Paul et al.. 2000, p. 2).

### ***Kissing and Sexual Touching***

Findings from this study indicate that the average ages as reported for the first experience of kissing and sexual touching for Samoan students was 12 years. International literatures suggest that there is a progression in the order of sexual activities, which start from kissing, then sexual touching (petting) and finally on to sexual intercourse (Brook et al, 1994; Davis & Lay-Yee 1999). The changing social and personal experiences for young people in society today may account for the lower ages being reported. However, it is important to interpret these findings with caution. There is the likelihood that older students may have found it difficult to recall their first age for kissing, touching and sexual intercourse.

### ***Have had sexual intercourse***

Nearly a third (32.1%) of Samoan students reported an experience of sexual intercourse. These findings are similar with those found in other New Zealand studies (Paul et al, 2000a, b; Adolescent Health Research Group, 2003a). Studies suggest that in Western countries, such as New Zealand, young people are becoming sexually active at an earlier age. For the sexually active Samoan secondary school students, the average age of first sexual intercourse was 14 years of age. Given that the legal age of consent for sex is sixteen years (Paul et al., 2000), these figures are cause for alarm and need to be explored. This is especially important as studies show the negative impact of early sexual intercourse. These impacts include: increased

risk of contracting STIs; increased risk of cervical cancer; pelvic inflammatory disease; comprised future fertility; unwanted pregnancy; low educational attainment; greater social isolation; and compromised economic future (Lammers et al., 2000).

### ***Contraception Use***

Findings from this study indicate that just under half (44.7%) of sexually active Samoan youth did not use a condom at their first experience of sex and 56% were less likely to always use contraception when having sex. Most concerning is the fact that Samoan females were 74 percent less likely to always use contraception as well as 60 percent less likely use a condom at first sex compared to Samoan males.

Findings from this study align with reports that document the low rates of contraception use by Pacific youth (Ministry of Health, 2003). These findings confirm that the rates of contraception use for Samoan youth were lower than those reported by the national secondary school population (Adolescent Health Research Group, 2003b). Although these findings are not new, they are cause for action.

The low rates of Pacific young people accessing health care services have been well documented (Ministry of Health, 2002b, 2004). A significant amount of resources have been directed into youth and school-based health clinics (Ministry of Health, 2004, 2008). Sexual and reproductive health visits to local general practitioners are free and contraception is heavily subsidised by the Government. Yet despite these interventions, literature identifies that Pacific young people are or not using contraceptive services that are available to them. Any sexual health intervention needs to take into account the cultural and social contexts of young Pacific peoples (Ministry of Health, 2004).

One study identifies a dilemma faced by young Samoan young people that may account for why there were not prepared with contraception. If one were to carrying around contraception, than this means that they were prepared to have sex (Anae et al., 2000). Therefore if sexual intercourse was not planned for, yet eventuated, these young people would not have contraception immediately available to them (Anae et al., 2000; Wilcox et al., 2001). Furthermore, there may be the fear of the repercussions if parents and siblings were to find contraception either in the home or on the Pacific young person.

The findings that Pacific males were more likely to use contraception and a condom at first sex (in comparison to their female counterparts) is in contrast with the findings reported in a Samoan sexual and reproductive study. As noted by Anae et al., (2000) contraceptive

responsibility was largely undertaken by the Samoan women. Given that the study undertaken by Anae had no participants under the age of 17, these findings are important as they draw on the sexual experiences of young Samoans and suggest areas for exploration.

### ***Number of sexual partners, STIs & pregnancy rates***

Findings indicate that almost half of sexually active Samoan students reported having three or more sexual partners; seven percent of sexually active Samoan students report having contracted a STI; and similarly 7.4 percent report not being sure if they had contracted an STI. Although a high proportion (86.5%) reported not having an STI, it is important to bear in mind that students may not be aware that they have an STI. Many STIs do not have physical symptoms, and unless a young person has had a STI health check this can be left undiagnosed for a significant period (Ministry of Health, 2003).

The large number of sexual partners as reported by Samoan students is concerning as having a greater number of partners contributes to likelihood of contracting and spreading STIs. The negative health effects of STIs have been documented (Ministry of Health, 2008). In addition, the increased number of sexual partners, decreased use of contraception also heightens the risk of pregnancy. Findings from this study indicate that almost a fifth (19%) of sexually active Samoan students have been pregnant once or got someone pregnant. These pregnancy findings warrant further exploration especially as literatures document the negative effects with becoming a teenage parent (Kirby et al., 2005; Ministry of Health). Unfortunately this study did not explore how these pregnancies eventuated.<sup>93</sup> However, recent census figures suggest that Pacific women have high abortion rates (Statistics New Zealand, 2008e). The high abortion rates appear to conflict with Pacific literatures that suggest that although a pregnancy may be unplanned, that the child is viewed as God's gift (Anae et al., 2000).

These findings signal that although a smaller proportion of Samoan students at secondary school are sexually active (32.1%), these reported rates of sexual health activities are at the higher end of the risk continuum.

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<sup>93</sup> For example: live births, abortions or miscarriage.

### **3) Is there an association between patterns of spiritual engagement and sexual health activities for Samoan youth attending New Zealand secondary schools?**

It is important to caution the reader that the findings from this study illustrate patterns of associations and therefore these findings *do not* demonstrate that spiritual engagement<sup>94</sup> *causes* a change in sexual health activity. The findings suggest that the two measures of spiritual engagement: church attendance and importance of spiritual beliefs, operate differently for the various sexual health activities explored.

#### **Church attendance**

For Samoan students, church attendance was not found to be significantly associated with: the age of first kissing experience, age of first sexual touching experience, or ever having sex. For sexually active Samoan students, church attendance was not found to be significantly associated with the use of a condom at first sex and use of contraception. These findings suggest that church is not protective for these sexual activities and interestingly, the results differ with studies previously undertaken. A study by McCabe & Collins (1983) identified that non-regular church attendees reported more kissing and petting compared with regular church attendees (McCabe & Collins, 1983 cited in Wilcox et al., 2001, p.71). The non association between patterns of contraception use and spiritual engagement are reported in other international studies (Bearman and Bruckner, 2001). However, it is interesting to note that the findings from this study did not concur with international studies that found that those who were more religious were less likely to use contraception at first sex (Thomson 1982 cited in Wilcox et al., 2001 p.73).

One of the most interesting findings was the negative effect of church attendance on the age of first sex and number of sexual partners. The findings from this study suggest that church attendance increases the risk of certain sexual activities for Samoan secondary students. Compared with Samoan students who never attended church; those that had attended were more likely to have reported an earlier age of sexual intercourse and also more likely to have three or more sexual partners. These findings are in contrast with international literatures that indicate that students who attended church were likely to debut later compared to those that did not attend (Wilcox et al., 2001; Bingham, Miller & Adams 1990).

However, adolescent spiritual engagement discourse may shed some light on this phenomenon. Youth development literatures stress the importance of young people having connections either to caring adults or the faith communities they are part of (Hardy & Raffaelli,

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<sup>94</sup> As measured by church attendance and importance of spiritual beliefs.

2003; Ministry of Health, 2002). Pacific literatures suggest young people may be strongly encouraged to attend church by parental pressures and cultural persuasions; these can have either a positive or negative effect on the young person. There may be a significant difference between young people, parents and their faith community's understandings of 'church attendance' and how this may influence how one should live their life. A young person may be purely attending church due to these social pressures and desire to conform to the expectations of others (Bersamin et al., 2005), but have no personal understanding of why their faith communities have established moral guidelines on sexual activity. In terms of the large proportion of sexual partners reported, it may well be the case that attending church opens up opportunities for social networking and access to potential sexual partners.

### ***Spiritual engagement***

In contrast it appears that the importance of spiritual beliefs plays a protective role in terms of certain sexual health activities. Importance of spiritual beliefs was found to be significantly associated with: the age of first sexual touching experience and for students who had not had sex. For sexually active students, the importance of spiritual beliefs was significantly associated with the age of first sex and the number of sexual partners. Compared to Samoan students who reported that their spiritual beliefs were 'not important', Samoan students who reported that spiritual beliefs were very important to them were: less likely to ever have sex, their debut of sexual touching and sexual activity occurred later; and they were less likely to have three or more sexual partners. However, the importance of spiritual beliefs was not found to be significantly associated with age of first kissing, use of condom at first sex or the use of contraception. For these sexual health activities, it was not protective.

The findings from this study indicate that spiritual beliefs,<sup>95</sup> has a protective (in that it decreases the risk) effect on certain sexual health activities for Samoan secondary students. Literatures shed light on this trend. It has been noted that the rated importance of spiritual beliefs, as reported by the young person themselves, is intrinsically motivated; this response gives a more accurate reflection of their personal attitudes, beliefs and intentions regarding sexual activities (Bersamin et al, 2005; Hill & Pargament, 2003). Whitehead (2001) suggests that spiritual beliefs are fostered within communities that have a moral and religious framework. Young people growing in religious households may accept and adopt the values that sexual behaviour should be confined within the bonds of a marital relationship.

The finding that the two spiritual engagement variables: church attendance and spiritual beliefs operated differently for Samoan students is intriguing. It is important to note that the results of

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<sup>95</sup> By those who view spiritual beliefs as important

the spiritual engagement associations must be carefully interpreted and reported. Literature suggests that church attendance and the importance of spiritual beliefs should not be interpreted separately as these are inter-related constructs for Pacific peoples (Lui, 2007). In responding to the question ‘What influences the spiritual beliefs of young Samoan secondary school students?’, it may well be likely that for Samoan youth, attending a church and being surrounded in an environment that has strong messages about God influences spiritual beliefs and thus in turn influences their sexual health decisions and activities. However, because the ‘Youth 2000’ study did not ask the students this question, we cannot empirically test this hypothesis.

### ***Gender***

The study findings also identify gender differences in terms of sexual health activities. Samoan females were more likely to report a later age of kissing and sexual touching debut and were also less likely to ever have sex compared to Samoan males. However, sexually active Samoan females were less likely to always use contraception, less likely to use a condom at first sex and were also more likely to have three or more sexual partners. These findings are indicative of the social contexts of Pacific youth and indicate the need to explore these areas further.

### ***4) Do Samoan and NZ European patterns of spiritual engagement and sexual health risk-taking behaviour differ, and, if so, how?***

#### ***Spiritual Engagement***

When compared to NZ European students, the findings reveal that Samoan youth have higher rates of church attendance and a larger proportion report that their spiritual beliefs are ‘very important’. These findings are generally consistent with previous research that shows a trend for high levels of religious participation amongst the Pacific populations compared to other ethnic groups in New Zealand (Statistics New Zealand, 2008c; Ministry of Pacific Island Affairs 2003; Ministry of Social Development 2005).

#### ***Sexual health activities***

When compared to NZ European students, findings from this study reveal that Samoan students poorer health outcomes. It is important to note that these findings document the reported rates and did not test for statistical significance between the two ethnic groups. However, these findings align with existing New Zealand literature that suggest that Pacific youth face more challenges to achieving good health than most other young New Zealanders (Ministry of Health, 2008).

### ***Reasons for not having sex***

Interestingly, the reasons most commonly cited by Samoan students for not having sex differed per se from those offered by NZ European. The common reasons given by NZ European students were that they had not met anyone to do it with, wanted to wait until they were older, and had not had the opportunity to do it. These findings are similar with those reported in other studies that suggests the different cultural boundaries in terms of sexual activity (Tupuola, 2004). Some groups of young people are open to having sex if there was the opportunity (Jenson et al 1994 as cited Paul et al., 2000b p. 2; Tupuola, 2004).

### ***Association between spiritual engagement and sexual health activities***

It is important to caution the reader that the findings from this study reveal associations, and do not demonstrate causality. The findings suggest that the two measures of spiritual engagement, church attendance and importance of spiritual beliefs, operate differently for different sexual health activities across the two ethnic groups. The previous discussion explored the spiritual engagement variables that were associated with sexual health activities for Samoans.

For the NZ European students, church attendance did play a protective role for pre-coital activities. Those who attended church were more likely to report their kissing debut later and were less likely to ever have sexual intercourse. These findings support the theory that church attendance is a protective factor for this population. This is in complete contrast to the findings of Samoan students which revealed that church attendance was associated and in some cases heightened the risk of sexual activity.

For NZ European students, the importance of spiritual beliefs youth was not associated with any of the sexual health activities: age of first kissing; age of first sexual touching; ever having sex; age of first sexual intercourse; use of condoms at first sex; use of contraception and number of sexual partners. This finding is also in contrast with the Samoan student findings, where the importance of spiritual beliefs was found to be protective.

It is intriguing that the spiritual engagement variables for NZ European youth operated in a total opposite way than it did for Samoan youth. As far as the researcher is aware, there is no comparable discussion that explains why these findings differ between the two ethnic groups. International literatures have indicated differences amongst ethnic groups, but do not enter into detailed discussion as to why these findings may occur (Wilcox et al, 2001). There may be cultural factors that influence these results however without data that directly addresses this issue, this must remain a question for future research.

## Policy Implications

Governments and communities desire that its members have good health and wellbeing. As noted by the Ministry of Health in its Sexual and Reproductive Health Strategy, there is a desire for,

*“A society where individuals have the knowledge, skills and confidence to enjoy their sexuality, to choose when or if to have children, and to keep themselves safe from harm”* (Ministry of Health, 2003, p.vi).

There is also an expressed commitment by various Government Ministries<sup>96</sup> to improve the health, social and economic outcomes for Pacific peoples, especially for Pacific youth:

*“Pacific youth face more challenges to achieving and maintaining good health and wellbeing than most other New Zealanders. The majority demonstrate considerable resiliency and where possible the health system should be looking to support and strengthen protective factors for all young Pacific people. Continuing to address risk factors and develop effective interventions for Pacific youth at risk of poor health outcomes needs to be considered a worthwhile investment in the future of the nation”* (Ministry of Health, 2008, p. vii).

Policy agents<sup>97</sup> are challenged with the difficult task of allocating scarce resources to combat the wide area of sexual and reproductive health issues. In New Zealand, the current sexual health priority is to reduce the rates of teenage pregnancy and reduce the rates of STIs (Ministry of Health, 2003). International literatures identify that it is these high risk-behaviours with observable negative consequences: teenage pregnancy; abortion and sexually transmitted infections (STIS); drinking; smoking; and substance use that are the most common focus for public health officials (Bearman & Bruckner, 2001).

Can public policy decrease the rates of teenage pregnancy and the spread of STIs? In answering this question, it is important to recognise that sexual and reproductive health is a topic that is highly value-laden and controversial. Any discussions on this issue needs to recognise the associated tensions and debates. Literature indicates that for lasting and effective change, interventions are required at all levels and requires changing multiple risk and protective factors. This is consistent with contemporary ideas that suggest that young people’s experience of multiple environments such as family, school and community can increase, or decrease their risk (Kirby et al, 2005; Fleming, 2001).

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<sup>96</sup> For example: Ministry of Health (2002a, 2002b, 2003, 2008), Ministry of Youth Affairs (1998) and Ministry of Pacific Island Affairs (2003).

<sup>97</sup> This term covers Public policy officials, Public health officials and others who hold roles in public office.

Findings from this thesis study show that a high proportion of Samoan young people have not had sex. These findings add weight to the fact that most New Zealand secondary school students (including Pacific) are healthy and do not engage in multiple risky behaviours (Adolescent Health Research Group, 2003b; Ministry of Health, 2008). This is encouraging, as literatures suggest that delaying sexual intercourse until a later age is conducive to health outcomes (Davis & Lay-Yee, 1999).<sup>98</sup> Of interest are the findings from a New Zealand study (Paul et al, 2000b) that identified that being first born and persistently involved in religious activities showed the strongest relationship with sexual abstinence at age 21 years. Findings from studies such as these can shed light on influences for young people and how they can resist societal pressures for early sexual intercourse.

However, there are a small proportion of Samoan young people who are engaging in sexual health activities. These sexual activities rate high on the risk continuum. These findings are consistent with national literatures that suggest that while most secondary school students are healthy, there is a small but alarming proportion of secondary school students who are involved in activities that have high-risk outcomes (Adolescent Health Research Group 2003b). These figures highlight an area that public health officials may wish to explore further.

Literatures indicate that in order to reduce rates of teenage pregnancy or STD transmission for young people there are five practical implications for policy agents (Kirby et al, 2005; Miller, 2006). Public health interventions and programmes must either:

- 1) increase abstinence;
- 2) reduce the frequency of sex, and/or;
- 3) reduce the number of sexual partners;
- 4) increase the use of condoms and other contraception;
- 5) and increase the testing/treatment for STDS

(Kirby et al., 2005, p. 19).

Each of these interventions requires their own unique strategies. A central component of any sexual and reproductive intervention aimed at Pacific youth requires their involvement and an understanding of their cultural contexts (Ministry of Health, 2003; Tupuola, 2000). Individuals are strongly influenced by their value system, knowledge and cultural environment, and for

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<sup>98</sup> Those engaging in early pre-intercourse sexual experiences, despite also reporting early and rapid progress to a long-term sexual partnership, are much more likely to report a greater number of partners, same-gender sex, anal sex and STDs in later life (Davis & Lay-Yee, 1994, p.143).

Samoan youth, sometimes it may not be appropriate to say 'just put on a condom'. As noted in a Ministry of Health report,

*"It is recognised that the issues affect and impact on different communities and at different periods in people's lives and that any successful sexual health strategy must focus on population-specific actions...one model does not fit all"* (Ministry of Health, 2001, p.2).

Furthermore,

*"These changing social characteristics mean that we must continue to update our approaches to sexual and reproductive health. Because behavioural and environmental factors change throughout the life cycle and are interrelated"* (Ministry of Health, 2001, p.9).

Findings from this study show that for Samoan students, the importance of spiritual beliefs is a protective factor for certain sexual health activities. This may be an area that policy agents may want to explore in partnership with faith communities. Given the spirituality features in the holistic view of health for Pacific peoples, some authors (Lui, 2007; Sheftel et al., 2007) contend that clinicians, who provide reproductive care for adolescents, should ask patients about their religious beliefs since these may influence their sexual health decisions.

Although the findings from this study did not support the theory that attending church is protective for Samoan youth; these findings should not be used to rule out the role of faith communities in addressing sexual health issues. Literature suggests that for lasting and effective change, interventions are required at all levels, this includes faith communities. Although faith communities have had a long history of undertaking social justice work in communities (Caritas, 2008), Pacific churches have recently been engaged to enter into partnerships with Government agencies to deliver a range of health and social services (Ministry of Health, 2007; Counties Manukau District Health Board, 2008). Policy agents have recognised that many Samoan peoples identify with Christian churches and the influence of the church is strong in many Samoan and Pacific families (Ministry of Pacific Island Affairs, 2003).

Although the findings from this study were contrary to expectations that attending church would lower the risk of sexual health activity, authors note the potential for churches (faith based communities) to encourage youth to be more involved in their faith communities and to learn the values of those communities, especially about sexuality (Kirby et al, 2005).

*"Most pregnancy and STD prevention programmes cannot strive to increase involvement in religious organisations. However, faith communities can implement youth programmes or initiatives that may increase youth's involvement and faith communities can implement*

*programmes to help youth better understand their religious' values about sexuality* (Kirby et al., 2005, p. 34).

Authors have also advocated that faith communities should be included in discussions related to sexual health policy and sexual health interventions at policy level (National Campaign to Prevent Teen Pregnancy, 2001; Whitehead, 2001). This is particularly important if Governments are committed to reducing rates of teenage pregnancy or STD transmission for young people, as faith communities can assist in some of the five practical policy implications listed.

Literatures also suggest that faith communities provide forums for positive youth development. Belonging and being actively involved in church communities can: assist young people to develop relationships with caring adults; provide opportunities where young people can positively contribute to society; keep young people busy and active; and increase their knowledge and social skills.

## Future Research

In some ways, this study raises as many questions as it answers.

This study has responded to calls for ethnic specific research; bringing new information on a topic area that was not otherwise known. This study supports the goals set out in the Pacific Health and Disability Action Plan (Ministry of Health, 2002b) and the Youth Health Action Plan (Ministry of Health, 2002c) which emphasises the need for timely and relevant information. This study also supplements the Pacific 'Youth 2000' report. As well, these findings also support the goals set in the Sexual and Reproductive Health Strategy:

- *Focus on the determinants of sexual and reproductive health including societal issues, structural issues (social, environmental, educational, cultural, emotional and spiritual) and power imbalances in relationships,*
- *Examine these issues with reference to the specific age, ethnicity, disability and population group cultural norms (Ministry of Health, 2001, p.8).*

In order to develop effective sexual health policies and interventions, policy officials require good quality, timely, relevant information that sheds light on the key health behaviours (and their related risk and protective factors) specific to New Zealand youth. Policy officials need to know and understand the issues facing young New Zealanders, including the vast group of Pacific youth (Ministry of Health, 2001; Ministry of Youth Development, 2002; Mila-Schaaf et al, 2008).

Given that this research found that the importance of spiritual beliefs was protective for certain sexual health activities,<sup>99</sup> future research may want to explore what is it about spiritual beliefs of young Samoans that may influence their sexual health decisions? Where and in what circumstances are the spiritual beliefs of Samoans developed and fostered? Could it be when an individual student attends church, or are spiritual beliefs developed and fostered in another setting?

Further research could also explore why church attendance may not feature as a protective factor against the selected sexual health activities for Samoan youth. The findings from this study are counter-intuitive and is in contrast to international findings that suggest that church attendance is protective (Kirby et al., 2005).

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<sup>99</sup> These activities are: the age of first sexual touching; ever having sex; age of first sex and number of sexual partners.

A large proportion of Samoan students have not had sexual intercourse. It would be interesting to explore the characteristics of these students and what factors directly affected teenagers' intent to not have sex. Research that explores the characteristics of this group might throw light on ways for young people to resist societal pressures for sexual intercourse (Paul et al., 2000b).

It would be worthwhile to undertake a wider scale survey with more Samoan and Pacific students who are older (17-24 years) and are at the higher end of engaging in risk-taking activities. This thesis study explored students who were enrolled in a New Zealand secondary school, excluding a large number of Pacific young people who have left school. This study was also limited by the smaller number of Samoan respondents who responded that they had not had sex. A survey with this older age group may be valuable to explore the way in which spiritual beliefs and church attendance are understood and how they may impact on sexual health decisions.

Research into the following areas may also shed light on sexual health risk and protective factors for Samoan youth:

- Explore denominational affiliation of Samoan students and whether there is an association between denominational affiliation and sexual health activities;
- Investigate the declining rates of church attendance for Pacific (especially for the young New Zealand-born generation);
- Examine the factors that directly influence Samoan teenagers intent to not use condoms or other contraceptives, including access issues;
- Explore initiatives that are being undertaken in Pacific faith communities to address issues of teenage pregnancy and sexual health;
- Undertake a current survey to explore whether there have been changes in the reported sexual health activities and patterns of spiritual engagement of Samoan youth. The follow up Youth '07 survey has been completed and this material is publicly available for analysis.

We live in a rapidly changing society and there is a need for current information to keep track of trends, especially as the Pacific group is a fast growing population. It is important to note that any research into the area of sexual health is challenging. Although there have been marked changes and advances in research techniques, it will be interesting to see if a quote by Asayama (1975) still holds true, *“the general conventional sex practices still prevail widely. In other words, many people still believe that sex is a disgusting thing which should be hidden from view or that an individual should have a special sense of shame about sex. These features make research into individual sexual experiences difficult. These various interrelated conditions produce problems not normally encountered in statistical analyses and add to the difficulty of understanding the actual over-all situation regarding sexual experience and behaviour”*(1975: p.91).

Understandably, many schools and Pacific communities are stating that they are tired of being researched. Therefore, there is the need to be smarter and align resources with studies that are already being undertaken. In other words, there is the opportunity to explore potential research questions (stated above) in studies such as the ‘Youth ‘07’ study, the ‘Pacific Island Families study’ (PIFs) study, and the ‘Growing up in New Zealand’ longitudinal study. These measures will prevent the likelihood of duplicating research. It would be advantageous to collaborate with key stakeholders, such as faith communities and government departments, in the pursuit of addressing the essential areas of sexual and reproductive health and spiritual engagement.

## Conclusion

This study presented the opportunity to consider the effect of spiritual engagement on selected sexual health activities for Samoan secondary school students. Sexual and reproductive health is an important health issue for New Zealand youth. It is useful to note that young people live and exist in a social context and that there are various factors that influence their sexual behaviour.

This study reinforces the centrality of spiritual engagement in the lives of many Samoan students. The results show that the two spiritual engagement variables: church attendance and importance of spiritual beliefs had differing associations with the sexual health activities explored. The title of this thesis raised the question, *What's God got to do with sex?* It appears for young Samoans, this is all dependent; God, whether viewed and understood through church attendance or directing ones spiritual beliefs, may either have a lot, or nothing at all, to do with sex.

This research has responded to the calls for ethnic-specific local research. It would be advantageous for the findings of this study to inform and promote discussions and debates amongst policy makers, communities and young people themselves about the role of spiritual engagement in sexual activities with the ultimate aim in improving the health and social wellbeing of Pacific youth.

# APPENDICES

## Appendix 1: Key Search Terms used in Literature Review

The terms and phrases used in the literature search are:

- Pacific
- Pasifika
- Pacific health
- Pacific youth health
- Samoan
- Adolescence
- Minority groups
- Culture and health
- At risk populations
- young people
- youth
- religion
- wellbeing
- resiliency
- sex
- sexual health
- teenage pregnancy

## **Appendix 2: Family Types**

A 'traditional family' is characterized by adhering to their particular Pacific Island nation's culturally defined style of living. A 'bicultural family' appears to have adopted many aspects of Western lifestyle while maintaining their traditional values and links. 'Assimilated families' have adopted Palagi (NZ European) styles of living and are isolated from their Pacific Islands community. Finally a 'Generation gap family' is characterised by traditional parents and assimilated New Zealand-born children. This creates a generation gap between the two which makes it difficult as parents may believe that their traditional cultural values are the norms in New Zealand society. Their children, however, having assimilated to their place of birth, New Zealand, resist and resent their parents' values being forced on them as a means of control

Source: Children Young Persons and their Families Service, 1997, p.64

### Appendix 3: Youth 2000 Ethnicity questions

	AHS question	Possible responses
	<b>Ethnicity</b>	
Ethn1_4	Which of the following ethnic groups do you most identify with?	NZ Maori / NZ European (ethn1_2 data 14) / other European / Samoan (Ethn1_4 data16) / Cook Islands Maori (ethn1_5 data17) / Tongan (Ethn1_6 data18) / Niuean (Ethn1_7 data19) / Chinese / Indian / other / Tokelauan (ethn2_1 data23))/ Fijian (Ethn2_2 data24) / Other Pacific Island Group (Ethn2_3 data25) / Filipino / Khmer / Vietnamese / Other southeast Asian groups / Sri Lankan / Japanese / Other Asian groups / Middle Eastern / Latin American Hispanic / African-African origins / other / I don t know
Intro3	What country were you born in?	New Zealand / Australia / Samoa / Cook Islands / Fiji / Tonga / Niue / Solomon Islands / PNG / Kiribati / Tokelau / Tuvalu / Vanuatu / China / Hong Kong / Taiwan / India / Sri Lankan / Malaysia....
Intro4	What age were you when you first came to New Zealand?	Less than one year old / 1 / 2 / 3 /4 /5 /6/ 7 / 8 / 9 / 10 / 11/ 12 / 13 / 14 / 15 / 16 / 17 / 18
Intro5	In what country was your father born?	New Zealand / Australia / Samoa / Cook Islands / Fiji / Tonga / Niue / Solomon Islands / PNG / Kiribati / Tokelau / Tuvalu / Vanuatu / China / Hong Kong / Taiwan / India / Sri Lankan / Malaysia....
Intro6	In what country was your mother born?	New Zealand / Australia / Samoa / Cook Islands / Fiji / Tonga / Niue / Solomon Islands / PNG / Kiribati / Tokelau / Tuvalu / Vanuatu / China / Hong Kong / Taiwan / India / Sri Lankan / Malaysia....

Source: Adolescent Health Research Group, 2008

#### Appendix 4: Youth 2000 Spirituality Questions

	AHS question	Possible responses
Spirit1	What faith or religion are you	None / Christian / Anglican / catholic / Presbyterian / Baptist/ EFKS / PIC / Seventh day Adventist / Latter Day Saints / Muslim / Hindu / Singh / AOG / Methodist / Ringatu / Ratana / Baha'i / Jewish / I have my own personal beliefs / Other
Spirit2	How often do you attend a church/mosque/shrine or other place of worship	Never / hardly ever / sometimes / often
Spirit3	How many days in the last week have you been to a church, mosque or shrine (or place of worship)	0 / 1 / 2 / 3 / 4 / 5 / 6 / 7
Spirit6	How important is it to you to go to church	Very important / somewhat important / not important
Spirit8	How important are your spiritual beliefs to you	Very important / somewhat important / not important

Source: Adolescent Health Research Group, 2008

## Appendix 5: First Experience of Kissing

### Average age of first kiss

	N	Mean	Std Error of Mean	95% CL for Mean	
Samoan Females	204	12.2	0.15	11.86	12.50
Samoan Males	187	11.6	0.10	11.38	11.81
NZ European Females	2066	12.4	0.037	12.34	12.49
NZ European Males	1806	11.9	0.045	11.90	12.08

### Analysis of Effects

	Pr > ChiSq
Church Attendance*Ethnicity	0.17
Importance of Spiritual Beliefs*Ethnicity	0.12

### Odds Ratios (Samoan Students)

Effect	Point Estimate	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	1.213	0.524	2.812	0.3117
Church attendance 2 vs. 4	1.577	0.799	3.112	0.3117
Church attendance 3 vs. 4	1.893	0.777	4.614	0.3117
Spiritual Beliefs 1 vs. 2	1.466	0.836	2.572	0.1820
sex F vs. M	1.883	1.215	2.919	0.0046

### Odds Ratios (NZ European)

Effect	Point Estimate	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	1.702	1.362	2.127	<.0001
Church attendance 2 vs. 4	1.371	1.129	1.666	<.0001
Church attendance 3 vs. 4	1.176	1.030	1.343	<.0001
Spiritual Beliefs 1 vs. 2	0.959	0.812	1.134	0.6263

Note:

Church attendance 1 = Often attend

Church attendance 2 = Sometimes attend

Church attendance 3 = Hardly ever attend

Church attendance 4 = Never attend

Spiritual Beliefs 1= Very Important

Spiritual Beliefs 2= Somewhat Important + Not Important

## Appendix 6: First Sexual Touching Experience

### Average age of first sexual touching experience

	N	Mean	Std Error of Mean	95% CL for Mean	
Samoan Females	151	12.64	0.25	12.12	13.15
Samoan Males	166	11.94	0.18	11.57	12.31
NZ European Females	1589	12.58	0.05	12.48	12.69
NZ European Males	1429	12.22	0.06	12.10	12.35

#### Analysis of Effects

Effect	Pr > ChiSq
Church Attendance*Ethnicity	0.2837
Importance of Spiritual Beliefs*Ethnicity	0.0048

#### Odds Ratios (Samoan)

Effect	Point Estimate Samoans	95% Wald Confidence Limits Samoans		Pr > ChiSq
Church attendance 1 vs. 4	0.506	0.159	1.608	0.7072
Church attendance 2 vs. 4	0.766	0.284	2.063	0.7072
Church attendance 3 vs. 4	0.624	0.190	2.046	0.7072
Spiritual Beliefs 1 vs. 3	5.066	1.423	18.038	0.0072
Spiritual Beliefs 2 vs. 3	2.397	0.572	10.042	0.0072
sex F vs. M	2.709	1.063	6.903	0.0368

#### Odds Ratios (NZ European)

Effect	Point Estimate Samoans	95% Wald Confidence Limits Samoans		Pr > ChiSq
Church attendance 1 vs. 4	1.438	0.983	2.103	0.2963
Church attendance 2 vs. 4	1.097	0.793	1.516	0.2963
Church attendance 3 vs. 4	0.992	0.805	1.222	0.2963
Spiritual Beliefs 1 vs. 3	1.016	0.762	1.355	0.7607
Spiritual Beliefs 2 vs. 3	1.076	0.872	1.328	0.7607

Note: Church attendance 1 = Often attend  
 Church attendance 2 = Sometimes attend  
 Church attendance 3 = Hardly ever attend  
 Church attendance 4 = Never attend  
 Spiritual Beliefs 1= Very Important  
 Spiritual Beliefs 2= Somewhat Important  
 Spiritual Beliefs 3 = Not Important

## Appendix 7: Ever had sex

### Analysis of Effects

Effect	
Church Attendance*Ethnicity	0.0557
Importance of Spiritual Beliefs*Ethnicity	0.0173

### Odds Ratios (Samoan)

Effect	Point Estimate Samoans	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	0.991	0.484	2.029	0.3388
Church attendance 2 vs. 4	1.440	0.715	2.899	0.3388
Church attendance 3 vs. 4	0.907	0.433	1.903	0.3388
Spiritual Beliefs 1 vs. 3	0.347	0.159	0.759	0.0133
Spiritual Beliefs 2 vs. 3	0.363	0.182	0.723	0.0133
sex F vs. M	0.599	0.367	0.979	0.0407
age 13 vs. 17	0.517	0.264	1.013	0.0692
age 14 vs. 17	0.691	0.329	1.451	0.0692
age 15 vs. 17	0.983	0.516	1.875	0.0692
age 16 vs. 17	1.171	0.561	2.444	0.0692

### Odds Ratios (NZ European)

Effect	Point Estimate NZ Europeans	95% Wald Confidence Limits NZ Europeans		Pr > ChiSq
Church attendance 1 vs. 4	0.298	0.214	0.415	<.0001
Church attendance 2 vs. 4	0.590	0.454	0.767	<.0001
Church attendance 3 vs. 4	0.837	0.704	0.995	<.0001
Spiritual Beliefs 1 vs. 3	0.895	0.723	1.109	0.5830
Spiritual Beliefs 2 vs. 3	0.950	0.817	1.105	0.5830

*Note:*

*Church attendance 1 = Often attend*

*Church attendance 2 = Sometimes attend*

*Church attendance 3 = Hardly ever attend*

*Church attendance 4 = Never attend*

*Spiritual Beliefs 1= Very Important*

*Spiritual Beliefs 2= Somewhat Important*

*Spiritual Beliefs 3 = Not Important*

## Appendix 8: Students who have had sex

Average age of first experience of Sex

	Number Frequency	Mean	Std Error of Mean	95% CL for Mean	
<b>Samoan Females</b>	80	13.99	0.16	13.65	14.32
<b>Samoan Males</b>	96	13.32	0.20	12.91	13.73
<b>NZ European Females</b>	668	14.67	0.068	14.54	14.81
<b>NZ European Males</b>	587	14.31	0.068	14.17	

### Analysis of Effects

Effect	
<b>Church Attendance*Ethnicity</b>	0.0008
<b>Importance of Spiritual Beliefs*Ethnicity</b>	0.0040

### Odds Ratios (Samoan)

Effect	Point Estimate	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	0.157	0.043	0.577	0.0038
Church attendance 2 vs. 4	0.187	0.049	0.710	0.0038
Church attendance 3 vs. 4	0.954	0.324	2.807	0.0038
Spiritual Beliefs 1 vs. 3	7.840	2.287	26.877	0.0037
Spiritual Beliefs 2 vs. 3	3.783	1.142	12.535	0.0037
sex F vs. M	1.672	0.810	3.450	0.1641

### Odds Ratios (NZ European)

Effect	Point Estimate	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	1.010	0.589	1.732	0.2018
Church attendance 2 vs. 4	1.496	1.033	2.166	0.2018
Church attendance 3 vs. 4	1.060	0.774	1.451	0.2018
Spiritual Beliefs 1 vs. 3	1.056	0.775	1.440	0.4557
Spiritual Beliefs 2 vs. 3	1.188	0.902	1.564	0.4557

*Note:*

*Church attendance 1 = Often attend*

*Church attendance 2 = Sometimes attend*

*Church attendance 3 = Hardly ever attend*

*Church attendance 4 = Never attend*

*Spiritual Beliefs 1= Very Important*

*Spiritual Beliefs 2= Somewhat Important*

*Spiritual Beliefs 3 = Not Important*

## Appendix 9: Use of Condom at first sex

### Analysis of Effects

Effect	
Church Attendance*Ethnicity	0.1332
Importance of Spiritual Beliefs*Ethnicity	0.9565

### Odds Ratios (Samoan)

Effect	Point Estimate	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	2.837	0.640	12.571	0.2173
Church attendance 2 vs. 4	1.196	0.316	4.526	0.2173
Church attendance 3 vs. 4	0.765	0.230	2.542	0.2173
Spiritual Beliefs 1 vs. 3	1.632	0.362	7.355	0.4071
Spiritual Beliefs 2 vs. 3	2.068	0.693	6.175	0.4071
sex F vs. M	0.403	0.182	0.892	0.0249
age 13 vs. 17	7.724	1.320	45.181	0.1430
age 14 vs. 17	2.996	0.863	10.394	0.1430
age 15 vs. 17	3.603	1.229	10.561	0.1430
age 16 vs. 17	2.606	0.862	7.880	0.1430

### Odds Ratios (NZ European)

Effect	Point Estimate	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	0.560	0.279	1.126	0.3008
Church attendance 2 vs. 4	1.033	0.573	1.862	0.3008
Church attendance 3 vs. 4	0.853	0.613	1.186	0.3008
Spiritual Beliefs 1 vs. 3	1.025	0.741	1.419	0.2766
Spiritual Beliefs 2 vs. 3	1.281	0.946	1.734	0.2766

*Note:*

*Church attendance 1 = Often attend*

*Church attendance 2 = Sometimes attend*

*Church attendance 3 = Hardly ever attend*

*Church attendance 4 = Never attend*

*Spiritual Beliefs 1= Very Important*

*Spiritual Beliefs 2= Somewhat Important*

*Spiritual Beliefs 3 = Not Important*

## Appendix 10: Contraception use

### Analysis of Effects

Effect	
Church Attendance*Ethnicity	0.3105
Importance of Spiritual Beliefs*Ethnicity	0.2208

### Exploring Church Attendance and Spiritual Beliefs – Contraception Use Odds Ratios (Samoan)

Effect	Point Estimate	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	1.194	0.387	3.677	0.6154
Church attendance 2 vs. 4	0.745	0.235	2.361	0.6154
Church attendance 3 vs. 4	1.489	0.303	7.326	0.6154
Spiritual Beliefs 1 vs. 3	0.848	0.252	2.852	0.9553
Spiritual Beliefs 2 vs. 3	0.924	0.284	3.004	0.9553
sex F vs. M	0.259	0.134	0.503	<.0001
age 13 vs. 17	6.440	1.301	31.888	0.1902
age 14 vs. 17	2.258	0.641	7.953	0.1902
age 15 vs. 17	1.953	0.754	5.062	0.1902
age 16 vs. 17	1.113	0.461	2.684	0.1902

### Odds Ratios (NZ European)

Effect	Point Estimate	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	0.825	0.460	1.482	0.1028
Church attendance 2 vs. 4	1.393	0.862	2.250	0.1028
Church attendance 3 vs. 4	1.434	0.987	2.084	0.1028
Spiritual Beliefs 1 vs. 3	1.106	0.763	1.603	0.8010
Spiritual Beliefs 2 vs. 3	1.097	0.796	1.512	0.8010

*Note:*

*Church attendance 1 = Often attend*

*Church attendance 2 = Sometimes attend*

*Church attendance 3 = Hardly ever attend*

*Church attendance 4 = Never attend*

*Spiritual Beliefs 1= Very Important*

*Spiritual Beliefs 2= Somewhat Important*

*Spiritual Beliefs 3 = Not Important*

## Appendix 11: Number of Sexual partners

### Analysis of Effects

Effect	
Church Attendance*Ethnicity	0.0013
Importance of Spiritual Beliefs*Ethnicity	0.0154

### Odds Ratios (Samoan)

Effect	Point Estimate	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	7.798	1.372	44.326	0.0231
Church attendance 2 vs. 4	6.605	1.558	27.998	0.0231
Church attendance 3 vs. 4	1.574	0.322	7.693	0.0231
Spiritual Beliefs 1 vs. 3	0.132	0.035	0.494	0.0067
Spiritual Beliefs 2 vs. 3	0.579	0.181	1.857	0.0067
sex F vs. M	0.286	0.132	0.619	0.0015
age 13 vs. 17	0.523	0.105	2.600	0.8090
age 14 vs. 17	0.615	0.184	2.059	0.8090
age 15 vs. 17	0.470	0.112	1.970	0.8090
age 16 vs. 17	0.756	0.150	3.808	0.8090

### Odds Ratios (NZ European)

Effect	Point Estimate	95% Wald Confidence Limits		Pr > ChiSq
Church attendance 1 vs. 4	0.962	0.537	1.725	0.0764
Church attendance 2 vs. 4	0.549	0.341	0.884	0.0764
Church attendance 3 vs. 4	0.733	0.515	1.043	0.0764
Spiritual Beliefs 1 vs. 3	0.849	0.588	1.227	0.4879
Spiritual Beliefs 2 vs. 3	1.054	0.799	1.391	0.4879

Note:

*Church attendance 1 = Often attend*

*Church attendance 2 = Sometimes attend*

*Church attendance 3 = Hardly ever attend*

*Church attendance 4 = Never attend*

*Spiritual Beliefs 1= Very Important*

*Spiritual Beliefs 2= Somewhat Important*

*Spiritual Beliefs 3 = Not Important*

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