

Do Aspects of Personality Determine Sexually Responsible
Behaviour And Contraceptive Self-Efficacy Among
Adolescent Females?

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Abstract

The purpose of this study was to examine the relationship between personality characteristics (Five-factor model; Costa & McCrae, 1992), contraceptive self-efficacy (CSE; Levinson, 1986) and sociosexual orientation (SOI; Simpson & Gangestad, 1991b). Questionnaires were administered to 131 adolescent females aged between 16-18 years in secondary school classrooms. The questionnaires were used to identify individuals' personality characteristics, attitudes, alcohol use and demographic variables and their relationship with adolescents' perceived efficacy within sexual situations. Contraceptive self-efficacy was highly correlated with conscientiousness and neuroticism. The results showed those that are highly conscientious perceive that they can and should be responsible for their sexual behaviour and act in accordance to these beliefs. Whereas, those with high level of neuroticism feel less in control of their sexual behaviour and are at high risk of unplanned pregnancies and sexually transmitted infections. Alcohol use was found to be highly predictive of sexual behaviour, CSE, SOI and personality characteristics. Contraceptive self-efficacy appears to be an important predictor of contraception use, personality and alcohol use. Implications for sexual education programs are discussed in terms of the results of this research

Introduction

The sexual attitudes and behaviours of adolescents today are of great concern. New Zealand now has the second highest teenage pregnancy rate in the western world, behind the United States. Approximately 7% of teenage girls between 15-19 years of age in New Zealand become pregnant each year (Dickson, Sporle, Rimene & Paul, 2000; cited in Ellis, Bates, Dodge, Fergusson, Horwood, Pettit, & Woodward, 2001). Dickson (1998) estimated that by the age of 15, 32% of New Zealand females and 28% of males have had sexual intercourse. Although women are now living in a day and age where it is possible to have complete control over their fertility, unplanned pregnancy continues to be a significant problem (Gerrard, 1987). This suggests that adolescents do not make adequate use of widely available contraceptive information and technology. Sexually active teenage women who have never used contraception have a 60% chance of getting pregnant, whereas those who regularly use contraception only have about a 6% chance of pregnancy (Oskamp & Mindick, 1983). Why then are adolescent females not using contraception more often and more effectively?. Unplanned pregnancy rates among teenagers remains high, it is critical to determine those factors that influence teenage women's decisions regarding contraception use. Further, an examination of factors that influence the decision to make use of contraception technology might also help with the design of intervention and education programs.

Having a child during adolescence can have profound health and social effects on a young female. There is extensive literature of these effects, Hayes (1987; cited in Steven-Simons & McAnarney, 1996) reviewed the literature and concluded that young females who become pregnant and choose to have the baby are at greater risk of being economically and socially disadvantaged throughout their lives compared to those who have their first child in their twenties. They are less likely to finish their education, gain employment, earn a high salary and be happily married and are likely to remain on welfare. These provide countless reasons as to why it is important to reduce the adolescent pregnancy rate within New Zealand and other westernised countries.

It is important to recognise that those who have sex more frequently and with more partners put themselves at a greater risk of contracting a sexually transmitted infection. In New Zealand sexually transmitted infections (STI) among adolescent females is relatively high. The Ministry of Health (2001) published statistics on New Zealand's STI rates, by using information provided by sexual health clinics. It was reported that in 2000 there were 8084 new STI cases, 11.1% of the 73,175 patients. Genital warts were the most common with 3198 patients diagnosed, 3% more than the year before. They found a significant increase of chlamydia and gonorrhoea cases. Chlamydia rates have risen from 1579 in 1995 to 2871 in 2000. Cases of gonorrhoea have increased since 1996 by about a third to 384 cases. With the rate of STI's on the rise, it is important that adolescents are educated about the prevention and problems associated with unprotected sexual encounters. It has been suggested that early sexual intercourse and those with multiple sexual partners have a higher chance of contracting sexual diseases (Kagan & Gall, 1997; Small & Luster, 1994). Therefore, if this study can establish factors that predict multiple partners, ineffective contraception use and early sexual experience then education programs could be improved to help those that are at greater risk of pregnancy and sexually transmitted infections.

Last year for BA honours, Aitken (2001) conducted a research project that focused on a retrospective study of the female adult perceptions of the relationship between adolescence contraceptive self-efficacy and their personality traits, as well as identity status. The results of this study were of interest but definitely required further research. The findings showed that personality traits were found to be predictive of their perceived feelings of control when having sexual relations as an adolescent. Of the personality traits, extroversion and conscientiousness were of greatest interest because they were the best predictors of contraception use and contraceptive self-efficacy. By expanding on these findings, it may help to identify those who are at greatest risk of unplanned pregnancies due to lack of contraception use.

This study will attempt to investigate, adolescent females' between the ages of 16-18 years, their personality traits (known as the Big Five), their levels of contraceptive self-efficacy, their sociosexual orientation and their level of responsibility associated with alcohol use, in order to identify those psychological factors that might contribute to the decision to use contraception. It is thought that an examination of these

characteristics might allow for a determination of the psychological factors that influence an adolescent woman's conscious effort to have sexual intercourse, take responsibility for the consequences of her sexual behaviour, and avoid pregnancy. Knowledge of a woman's psychological characteristics have been shown to be useful in determining factors that lead to the decision to make use of sexual counselling services, such as Family Planning centres and abortion clinics (Carver & Scheier, 2000). Therefore, it could be the case that if personality traits can predict low contraceptive self-efficacy, then through sex education it could enhance those adolescent females' feelings of self-efficacy in order to reduce unwanted pregnancy. Another objective of this study is to establish differences between those that have had sexual intercourse and those that have abstained by assessing the variation in their personality traits, alcohol use and demographics. It is thought that individuals that misuse alcohol put themselves in risky sexual situations and maybe less likely to use contraception while under the influence.

Throughout this study, adolescents that have sexual intercourse without contraception are considered sexual risk-takers and it has been termed as risk-taking behaviour. Gullone and Moore (2000) defined reckless risk-taking behaviour as those that through thrill seeking cause themselves to have a higher chance of negative social or health related outcomes then is usually considered acceptable in the adult population. These included having unprotected sex, driving while over the limit and taking drugs.

1.1 Adolescent development and Sexual Decision Making

The role of sexual behaviour as a feature of adulthood has changed. Until the 1960s, social norms restricted sexual intercourse to marriage. In the 60's premarital intercourse started to become socially acceptable thus decreasing the average age of first intercourse. Since then attitudes and behaviours have changed remarkably, causing an increase in research associated with adolescent sexual behaviour and its effect on adolescent development (Graber, Brooks-Gunn & Galen, 1998). Forming a sexual identity and gaining an understanding of your emotional and physical challenges of sexual behaviour are now part of a series of events that occur during the transitional period of adolescent development.

Adolescence can be defined as a period of development that begins at the onset of puberty and ends at the attainment of physiological or psychological maturity (Reber, 1995). It is a developmental period of turmoil and stress characterised by rapid physical, psychological, social, cultural and cognitive changes (DiClemente, Wingood, Crosby & Sionean, 2001). Changes during adolescence are defined by an individual's social context, her roles and expectations, and her identification and membership in a social group. An adolescent's choice about sexual behaviour is also influenced by these factors. These events in adolescent development have the potential to alter behaviour, affect cognition and context, all of which can have a life long influence. As adolescents develop sexual identities they experiment, and often these behaviours do not match the ideals and experiences of parents and adults. (Graber et al., 1998)

Many health related behaviours can have permanent effects on an adolescent's future and development; they are primarily related to risk behaviours such as alcohol and substance abuse, risky sexual behaviour and violence and are therefore preventable. The sexual decision-making process during adolescence is complicated, adolescent females have to make many decisions when they become sexually active. A female must choose whether to have sexual intercourse in the first place and if she does, whether to remain sexually active; whether to use contraception and, if so, what method to use; and if pregnancy occurs, whether to seek an abortion or carry the baby

to term. With increase awareness about sexually transmitted infections and Aids, an adolescent must also decide whether to use a condom for prevention in each sexual encounter (Gage, 1998). If an adolescent female makes the wrong decisions, they can have detrimental effects such as unplanned pregnancy, sexually transmitted infections and put themselves at risk of contracting AIDS.

Most aspects of early adolescent sexual behaviour are concealed by adolescents, especially females, and therefore not truly understood by the general population, most especially parents. There are many theories as to why some females do not use contraception (Baumrind, 1991; Donovan, Jessor, & Costa, 1991; Elkind, 1967; Levinson, 1986). Some adolescent females do not consciously choose to have sexual intercourse and justify their behaviour by stating, "It just happened" which allows them to deny responsibility for their sexual behaviour. The guilt that can be associated with first sexual experiences makes it easier for them to deny their reproductive and contraceptive knowledge than to make use of it (Levinson, 1986).

Many other factors can influence an adolescents' decision to have sexual intercourse. Research has found that teenagers who come from two-parent households are more likely to have better health outcomes. They postpone having sexual intercourse and tend to have fewer sexual partners (Brewster, 1994). Further, early father absence in adolescent life was found to be strongly associated with early sexual activity and teen pregnancy (Ellis, Bates, Dodge, Fergusson, Horwood, Pettit, & Woodward, 2001). It has been argued that two-parent families tend to have greater economic resources, spend more time with their children and live in higher socioeconomic neighbourhoods than single-parent families (Ramirez-Valles, Zimmerman, & Newcombe, 1998; Wolfgang, 1998). Living in low socioeconomic neighbourhoods is associated with risky sexual behaviour and teen pregnancy (Brewster, 1994). These findings suggest that poorer youth start having sexual intercourse earlier, do not use contraception and therefore get pregnant at earlier ages. This has been attributed to lack of economic resources and socialisation processes (Ku, Sonenstein, & Pleck, 1993).

Furthermore, parents' occupational and educational levels are positively associated with a higher level of safe sex practices, especially mothers' educational level (Brewster, 1994). Parental education indicates access to financial resources and higher aspirations and motivation by parents for their children, they tend to have attitudes that are more liberal and maybe more open with their children about sexual intercourse. It has even been argued that educated parents are more likely to have children that have high academic and career aspirations and therefore postpone sexual intercourse or choose to use contraception in order to avoid pregnancy (Cooksey, Rindfuss, & Guilkey, 1996).

A Christchurch study conducted by Lynskey & Fergusson (1993), found that Māori, Pacific Islanders and those from socioeconomically disadvantaged families, are more likely to have sexual intercourse at a young age than Pākehā and socioeconomically advantaged adolescents. Another New Zealand study by Lungley, Paulin and Gray (1993) found that Māori students were also less likely to use contraception. Similar findings from the United States found that, African-American youth report earlier age of first sexual experience, higher levels of sexual activity, less contraceptive use, and have a higher chance of teen pregnancy (Brewster, 1994; Cooksey et al., 1996).

In this study, alcohol use will be used as a measure of responsibility and risk-taking, it is thought that those who consume and misuse alcohol will be at risk of teen pregnancy and sexually transmitted infections. Studies have showed that alcohol use is linked with sexual behaviour in two ways, the probability of being sexually active, and the probability of having sexual intercourse without contraception (Fergusson & Lynskey, 1996; Rees, Argys & Averett, 2001). Fergusson & Lynskey (1996) further found that those adolescents who use alcohol were much more likely to have had sexual intercourse before the age of 16 years, have had unprotected intercourse, and multiple partners.

It is important to highlight other factors that predict early sexual behaviour and contraception use; this study will focus mainly on aspects of personality including personality traits, self-efficacy, and attitudes. The sociodemographic questions will measure some of the above factors that have been mentioned. These factors include

ethnicity, religion, socioeconomic status, father absence, and responsibility associated with alcohol use.

There are several theories that examine adolescent risk-taking behaviour associated with risky sexual behaviour (Lavery, Siegel, Cousins & Rubovits, 1993). The clinical view looks at personality as a predictor of risk-taking behaviour, termed the “problem”-behaviour perspective (Donovan, Jessor, & Costa, 1991). Baumrind (1991) regards risk-taking as normal and adaptive and argued that it is an important and expected part of adolescent development. Baumrind’s research found that parents who allowed for some self-exploration was associated with healthier, more competent adolescents. The adolescent egocentrism perspective (Elkind, 1967) is another developmental view that argued that adolescents believe that they are invulnerable and unique. This unrealistic self-appraisal causes adolescents to maintain unrealistic attitudes (“It can’t happen to me” point of view) for the consequences of their risk-taking behaviour.

The problem behaviour perspective on risk-taking (Donovan, Jessor, & Costa, 1991) can be linked to this research. They termed adolescent risk-taking as any behaviour that deviates from societal norms and gets a social control response from adults. Those adolescents that engage in risk-taking behaviours such as risky sexual practices are thought to have a particular set of attitudes, values and perceptions. They tend to place less value on academic achievement, and greater value on independence, they have higher tolerance for deviance and lower religiosity and look to peer for decision-making. Lavery et al., (1993) examined adolescent risk-taking from a problem-behaviour perspective and found that a high level of adolescent risk-involvement was associated with personality factors. This study will attempt to discover exactly which personality traits are involved in sexual decision-making and if personality characteristics are associated with an adolescent females’ attitude towards sexual intercourse (sociosexuality) and her level of self-efficacy.

An adolescent female’s level of self-efficacy is thought to measure contraceptive use. Self-efficacy explores her sense of control over sexual situations and her belief about her ability to use contraception. Unlike demographic factors that are unchangeable, self-efficacy is situation specific and interventions can be used to increase an

individual's level of self-efficacy (Heinrich, 1993). Sociosexuality is also thought to play a role in sexual decision-making, it examines an individual's willingness to engage in uncommitted sexual relationships. Sociosexual orientation refers to an individual's attitude towards permissive sexual activity, with an individual's position being measured on a restricted to unrestricted "sociosexuality" continuum. Restricted individuals require commitment and love before they can engage in sexual relations, whereas unrestricted individuals have permissive attitudes towards sexual intercourse (Simpson & Gangestad, 1991b; Wright & Reise, 1997). These factors in association with personality characteristics maybe used to recognise those females that are at greater risk of having unprotected sexual intercourse.

Figure 1 provides a pathway diagram of the expected relationship between the variables in this study. The pathways are dictated by the hypotheses, which are discussed at the end of this chapter.

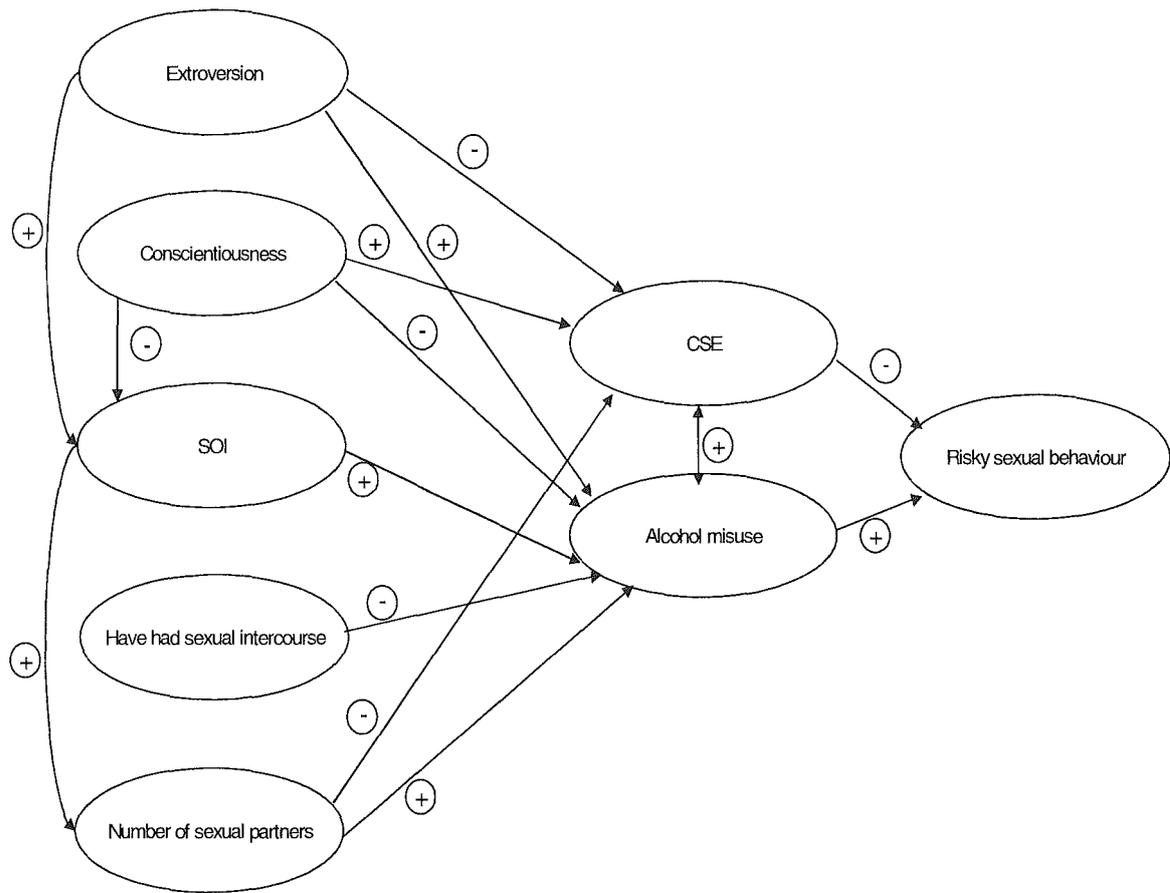


Figure 1: Path diagram of the predicted relationship between the main variables.

1.2 Personality Traits

This section will talk about five major personality characteristics that will be used to measure individual differences among adolescent females and its influence on a females' decision to have sexual intercourse and her consequent decision to use contraception.

1.2.1 Definition

Personality traits are defined as any enduring characteristic of a person that can serve as an explanatory role for the observed regularities and consistencies in his/her behaviour. Trait theory assumes that an individual's personality is comprised of traits or characteristic ways of behaving, thinking, feeling, reacting, etc (Reber, 1995).

Sigmund Freud began formulating the theory that there is a relationship between personality and sexuality. Freud proposed that individual differences in personality stem from underlying processes related to sexuality. He argued that these individual differences were from a biologically based sex drive in conjunction with early individual experiences and/or an individual's sexual learning history (Miller & Benson, 1999; Simpson & Gangestad, 1991). Presumably then, a woman's personality will influence her decision to use contraception. Therefore, this study will seek to assess the personality of adolescent women who use contraception in order to determine personality traits that influence the decision to prevent pregnancy.

1.2.2 The five factor model of personality

Currently there are five factors ("The Big Five") used by many researchers to characterise peoples personality (Costa, McCrae & Busch, 1986; Costa & McCrae, 1987, 1990, 1992, 1993, 2000; Goldberg, 1993; Gullon & Moore, 2000). The five factor model has achieved great prominence. Costa & McCrae (1993) have argued that "the five factor model has provided a unified framework for trait research; it is the Christmas tree on which the findings of stability, heritability, consensual

validation, cross cultural variance and predictive utility are hung like ornaments". Research has shown that the five factor model of personality has received strong support because it has been validated by both self-reports and observer ratings (Goldberg, 1993; Parker & Stumpf, 1998). Costa & McCrae (1987) further argued that self-reports, spouse-ratings and peer-ratings support the five-factor model. They argued that if the model is a reasonable representation of personality, it should be recoverable from questionnaires, observer ratings and self-reports, and their research has supported this. This highlights why this personality theory is one of the most recognised and used in psychological research.

These five traits are hierarchically organised in terms of five dimensions or domains. The five factors are extroversion, conscientiousness, openness, agreeableness and neuroticism; they are described in greater detail in the following section.

1.2.2.1 Extroversion/Introversion

Extroversion refers to individuals' preferences for social interactions and tendencies to be assertive, active and talkative (Costa & McCrae 1990, 1992). Goldberg (1993) argued that extroverts are characterised by their excitement seeking, and gregariousness. Furthermore, they are assertive, active, talkative, and prefer to be surrounded by many people and desire to be the centre of attention. There are thought to be many facets of the extroversion trait (Costa & McCrae, 1990, 1992), which could support and predict contraceptive self-efficacy (a women's perceived level of control in sexual situations).

The first facet is warmth, which is related to interpersonal intimacy. Extroverts are often affectionate and friendly, they genuinely like people and easily form close friendships. It could be argued that because these individuals enjoy meeting, socialising and being affectionate with new people, they are more likely to seek out potential sexual partners and have sexual intercourse that is not pre-determined, as they desire intimate relationships and may not be prepared for all their sexual encounters.

A second facet of extroversion is gregariousness, which is a person who genuinely prefers other people's company to being alone. This trait could lead individuals to have greater potential for meeting and having sexual intercourse compared to those that avoid social situations.

Extroverted individuals also tend to be assertive (third facet), so this could lead them to take control and have sexual partners from a young age because they are able to confidently meet and make friends quickly. Eysenck's (1971, 1973) research showed that extroverts have sex earlier, more frequently and with more partners than do introverts, in order to raise their level of cortical arousal to an optimal level. Other research has supported this finding (Barnes, Cheek, & Malamuth, 1984; Pfrang, & Schank, 1986).

Another aspect of extroversion that could be associated with low CSE is excitement seeking these individuals crave excitement and stimulation. They prefer to seek out risk taking behaviours that stimulate and excite them, such as risky sexual relationships. It has been found that adolescents characterised as having high levels of sensation seeking (associated with excitement seeking) and impulsivity appear to be more vulnerable to engaging in reckless behaviour (Moore & Rosenthal, 1993; Zuckerman, 1979). Zuckerman (1979) argued that individuals high in sensation seeking engage in risky sexual behaviour to raise their normally suppressed arousal level. These theories provide evidence for the link between personality and individual sexual behaviour.

Overall, extroverted individuals can be described as being very warm and affectionate towards others and they enjoy being in large and noisy crowds or parties. They are often very assertive, have high energy levels, and prefer a fast passed life-style. Excitement, stimulation and thrills have great appeal to them and they tend to be cheerful and optimistic (Costa & McCrae, 1992).

A study by Gullone and Moore (2000) attempted to link the five-factor model of personality with risky-taking behaviour, such as having unprotected sexual intercourse, driving while under the influence of alcohol and taking drugs. Furthermore, their research showed that those adolescents who had high levels of the

extroversion trait were less likely to judge behaviours as risky (these include thrill seeking, antisocial behaviours and reckless behaviours, such as drug taking, unprotected sex, drunk driving, etc.). Adolescent risk judgements have been shown to be significantly predictive of risk behaviours (Gullone & Moore, 2000). Therefore, extroverts are more likely to misuse alcohol and are more likely to conduct risky behaviours such as not using contraception.

Overall, those that have higher levels of the extroversion trait are probably less likely to use contraception because they are less likely to think of their behaviour as risky or judge this kind of behaviour negatively, so presumably would have a lower level of contraceptive self-efficacy (refer to Figure 1). Extroverts are also more likely to seek excitement (i.e. high sensation seeking (Zuckerman, 1979)) hence, engage in thrill seeking behaviour like risky sexual practices. Further, research has shown that extroverts frequently have sex and individuals who engage in frequent sexual relations tend to have positive attitudes toward impersonal sexual encounters and sexual permissiveness (Wilson, 1981). Therefore, they should have a higher level of sociosexual orientation and have an unrestricted view on sexual intercourse.

1.2.2.2 Conscientiousness

Conscientiousness is related to individual differences in organisation and achievement (Costa & McCrae, 1990). Goldberg (1993) incorporated self-discipline, deliberation, competence, and compliance to this trait. Costa and McCrae (1990) argued that those who are highly conscientious are ambitious and hardworking and can be described as “workaholics” (pp. 42). Those that are low in conscientiousness are considered easy going and less exacting with themselves and others and often lack self-control.

Costa and McCrae (1992) defined a conscientious individual as purposeful, strong-willed, and determined, they reasoned that few great musicians and athletes would get to a world-class level without a reasonably high level of this trait. Conscientious individuals have been associated with academic and occupational achievement, they appear to have a high motivation to achieve, so they are not going to jeopardise their future by performing risky behaviours. Costa and McCrae (1992) further argued that

those with a lower level are not necessarily lacking moral beliefs but that they are just less exacting in applying them. This further supports the idea that those who have low levels of this trait are less likely to consistently use contraception, they may want to use contraception but lack the knowledge and ability to prepare themselves before sexual encounters. Costa, McCrae & Busch (1986) found some evidence that those who are low in conscientiousness show more of an interest in sex. Therefore, those that are high in conscientiousness are less likely to be interested in sexual intercourse because they are concentrating on their goals and future and consequently are not likely to get into unplanned sexual encounters.

There are several facets of this trait that could be associated with high levels of contraceptive self-efficacy (Costa and McCrae, 1992). Conscientious individuals have high feeling of competence. This refers to a sense that one is capable, sensible, prudent and effective and therefore would behave in a sensible, informed way when making decisions about contraception and sexual intercourse.

Those with high levels of this trait often feel they are well prepared to deal with life, and those with lower levels may have a lower opinion of their abilities and often admit to being ill prepared and inept for situations (Costa & McCrae, 1992). From a contraceptive point of view it could be argued that these individuals will be prepared in advance if they are going to be having sexual intercourse and are more likely to have vast contraceptive knowledge before starting a sexual relationship.

Another facet of this trait is dutifulness, conscientious individuals often adhere to their ethical principals, they scrupulously fulfil their moral obligations, and are often religious (Costa & McCrae, 1992). They are more likely to have strong convictions about sexual intercourse before marriage and are likely to have chosen to abstain from sexual intercourse because of their moral or religious belief, therefore, it could be thought that those who have not had sexual intercourse may have high levels of this facet and trait. They are likely to hold strong moral beliefs about sexual intercourse and therefore are likely to desire commitment and love before they engage in sexual intercourse (restricted sociosexual orientation).

Further, conscientious individuals are achievement striving, that is, they have high aspirations and work hard to achieve their goals and have a sense of direction in their lives (Costa & McCrae, 1992). It has been shown that those with a greater perceived self-efficacy have higher goals and have stronger commitment and perseverance in reaching their goals (Mischel, 1999). Conscientious individuals are achievement seeking and set high goals and therefore should have greater levels of self-efficacy. It is unlikely that they would want to jeopardise their chances of achieving their goals by undertaking risk-taking behaviours associated with sexual intercourse and alcohol consumption.

Another facet that supports contraception use is self-discipline, these individuals have high self-control, and it could be argued that they will be able to discontinue sexual encounters even when they are sexually aroused, if they do not have contraception. Those with low self-discipline are easily confused by impulsiveness; highly impulsive people cannot resist doing what they do not want themselves to do (Costa & McCrae, 1992). For example, they may not have wanted to have sexual intercourse without contraception, but when they were put in a high-pressure situation, they did not have enough conviction to stop. Finally, the last facet of conscientiousness is deliberation or the tendency to think carefully before acting (Costa & McCrae, 1992). They are cautious and deliberate and are likely to think about the negative consequences of unprotected intercourse before they get into any sexual situations.

Overall, highly conscientious individuals can be described as being rational, prudent, practical, resourceful, and well prepared. They tend to be very neat, punctual, and well organised and adhere strictly to their ethical principles. They have high aspirations and strive for excellence in everything they do. They are determined, persistent, and able to force and motivate themselves to do what is necessary. They are cautious and deliberate and think very carefully before acting. (Costa & McCrae, 1992)

Research has shown that adolescents with high levels of this trait were likely to judge all types of risk behaviours as riskier than their less conscientious peers (Gullone & Moore, 2000). Therefore, those women who seek out and use contraception should

have higher levels of conscientiousness because they are hardworking, ambitious, and energetic individuals who tend to run with society rather than against it. They are likely to have high contraceptive self-efficacy as they are more likely to seek out and use contraception because they do not want to be negatively viewed by society and therefore form strong moral attitudes towards sexual intercourse (restricted sociosexual orientation) (refer to Figure 1).

The final three traits that are measured by the NEO-FFI are discussed below, but they will be reviewed in lesser detail because they are thought to be less predictive of sexually responsible behaviour. Sexual behaviour is on a continuum, one end is risky sexual behaviour and at the other end responsible sexual behaviour (effective contraceptive user or abstainers). Extroversion and conscientiousness can be applied to either side of this continuum, with each trait predicting the opposite sexual behaviour that is why these have been the main traits for study in this research. The other three traits are presumably predictive of sexual behaviour, but to a lesser extent.

1.2.2.3 Neuroticism

Neuroticism refers to being anxious rather than calm, insecure rather than secure, and self-pitying rather than self-satisfied (Santrock, 1999). Furthermore, Goldberg (1993) has argued that it incorporates anxiety, anger/hostility, impulsiveness and vulnerability. Anxiety is at the heart of this trait and appears to play an important role in decision-making. Neurotic individuals are prone to having irrational negative thoughts and have problems coping with stress (Costa & McCrae, 1992).

These individuals tend to be prone to anxiety, worry and are generally apprehensive. They are moody, over sensitive and are dissatisfied with many aspects of their lives. They are generally low in self-esteem and may have unrealistic ideas and expectations about themselves and others. Others might describe them as nervous, high-strung and vulnerable compared to the average person. Neurotic individuals may have difficulty controlling their impulses and desires, and may become very distressed in stressful situations. (Costa & McCrae, 1992)

Research by Gullone and Moore (2000) found that those adolescents with high levels of this trait were found to be less likely to engage in anti-social risks. But aspects of this trait may lead these individuals to have sexual relations without contraception. Another correlate of neuroticism is sexual problems such as nervousness, guilt and inhibition (Eysenck, 1971). These females due to their low self-esteem and their impulsiveness may have difficulty controlling sexual encounters. They may want to use contraception but have difficulty in asking their partner to stop because they desire to please them.

Because many aspects of this personality trait are negative (moody, anxious, over sensitive etc.), these individuals are probably less likely to be sociable and therefore are less likely to get into sexual situations or meet potential partners so may not have had sexual intercourse at all. Also due to the anxiety and guilt intercourse provokes makes them less likely to have had sexual intercourse and could have negative, moralistic attitudes towards sexual intercourse. This would suggest that these females would be less likely to use contraception and have a restricted sociosexual orientation.

1.2.2.4 Openness

Openness to experience refers to individuals who value intellectual matters, are rebellious and non-conforming, have unusual thought processes and tend to be introspective rather than moralistic (Costa & McCrae, 1990). Costa and McCrae (1992) argued that this trait is related to individuals who are open to new experiences and that there are several facets to it. One facet of this trait is fantasy it describes an individual as having a vivid imagination and an active fantasy life. They are daydreamers and therefore might be easily influenced into having sex without contraception because they are trying to live a fantasy that they have created about intimate relationships. Another facet is openness to feelings, these individuals tend to experience deeper and more differentiated emotional states (Costa & McCrae, 1992), this could lead them to become overly attached within their intimate relationships and maybe easily talked into having unprotected intercourse in order to please their sexual partners.

Overall, those that have high levels of this trait tend to have a strong interest in experience for its own sake. They seek out novelty and variety and have a great curiosity for complexity. They have a greater perception and awareness of their own and others feelings and emotions. They are very responsive toward art, music and poetry and may adopt unconventional attitudes. Others view them as imaginative, daring, independent and creative (Costa & McCrae, 1992).

Costa & McCrae (1990) described those that have higher levels of this trait as daring and tolerant of uncertainty (Gullone & Moore, 2000). It could be argued that they are less likely to use contraception because they are more likely to try new things, which may include risky sexual behaviours. They may have permissive attitudes towards sexual intercourse, as they are open to trying new things and therefore are less likely to judge sexual behaviours as risky and are likely to have more liberal attitudes towards sexual intercourse.

1.2.2.5 Agreeableness

Agreeableness refers to individuals who are sympathetic, considerate, warm and compassionate rather than hostile, critical and sceptical (Costa & McCrae, 1990). These individuals are characterised by their straight forwardness and compliance (Goldberg, 1993). In general, these individuals easily trust others and assume the best in everyone they meet. They tend to put the needs of others in front of their own, they tend to avoid conflict and forgive and forget easier than the average person and would find it difficult to deceive or manipulate others. They tend to avoid conflict and have difficulty in fighting for what they believe.

Previous research showed that adolescents with high levels of agreeableness were less likely to judge behaviours as risky (Gullone & Moore, 2000). It could further be argued that these individuals are usually very trusting of their partners and perhaps more susceptible to peer pressure and additionally conform to others ideas about both their decision to have early sexual experiences and to use contraception (Costa & McCrae, 1990). Therefore, these individuals should have low levels of self-efficacy within sexual situations, as they appear to follow what their partner desires in their sexual relationship, if their partner does not want to use contraception then they are

less likely to voice their opinion. They are unsure of their attitudes towards sexual intercourse so are likely to follow those around them and conduct in risky sexual behaviour because they are unsure of their sexual identity.

In conclusion, Gullone and Moore (2000) have shown that the five-factor model of personality, in conjunction with risk judgments, is useful for making predictions about adolescent risk behaviours. Goldberg (1993) described these five broad domains and incorporated hundreds of traits in each one. He further argued that the five-factor model provides a highly structured categorisation for the personality variables and they should be incorporated within psychology as a measure of individual differences. This research will focus mainly on two of these traits, extroversion and conscientiousness, as they appear to measure sexual behaviour on each end of the scale those that have permissive attitudes and conduct risky sexual behaviours (extroverts) and those that have strong sexual morals (conscientiousness).

1.2.3 NEO five-factor inventory

In this present study the five traits will be measured using the revised NEO five factor inventory (NEO-FFI), devised from the NEO PI-R which consists of the 60 best NEO-Personality Inventory items as indicated by item and factor analyses (see Costa & McCrae, 1992). Although the scale is slightly less reliable and valid than the full NEO PI-R, it does provide a brief, comprehensive measure that is easily administered and more convenient for this study due to time constraints.

Tokar, Fischer, Snell and Harik-Williams, (1999) found that there is some empirical justification for using the NEO-FFI to assess research participants' core personality traits, as represented by the five-factor model. Consistent with Costa & McCrae (1992), they recommend the NEO-FFI as a structurally valid, less time-consuming (than the longer NEO-PI-R) tool for those who wish to assess the "Big Five" in research. Further research (Parker & Stumpf, 1998) has linked NEO-FFI use with adolescents they found that the NEO-FFI could be completed by gifted 12 year olds and therefore supports its use with older adolescents (Costa & McCrae, 2000).

1.3 Contraceptive Self-efficacy

1.3.1 Self-Efficacy

Although personality is considered a major influence on an individual's decisions regarding sexuality, other personality factors have also been shown to influence decision making, such as self-efficacy. Self-efficacy can be defined as an individual's sense of their ability and their capacity to deal with particular conditions or situations that life puts before them, in this case sexual situations (Reber & Reber, 2001).

Bandura (1977, 1997) argued that people want to be in control of events that are happening in their lives. Self-efficacy theory argued that all processes related to psychological and behavioural change operate through the modification of an individual's sense of personal mastery or self-efficacy (Maddux, 1995). The more in control someone feels in their life the better able they are to predict outcomes. Bandura stated, "Predictability fosters adaptive preparedness" (pp. 2). An individual's inability to predict outcomes in their life leads to feelings of anxiety, apathy or despair; if individuals can prepare themselves for a life event then they are less likely to feel anxious about it. When someone feels secure about desired outcomes and can prevent undesired ones they develop a sense of control, which is a powerful incentive. Unless an individual truly believes they can produce a desired effect by their actions, they have little incentive to act, such as not using contraception because they want to please their partner. Therefore, perceived self-efficacy refers to one's belief that they are capable of organising and executing the courses of action required to produce given attainments (Bandura, 1997).

Low feelings of perceived self-efficacy can have diverse effects on individuals. It can affect what action people take, how much effort they submit, and how much effort they will put in when problems and obstacles arise. It can influence their level of stress and anxiety when trying to cope with events and the level of accomplishment they experience (Bandura, 1997).

Self-efficacy has been used interchangeably with self-esteem but Bandura (1997) argued that they are different. Research has shown that self-esteem can play a crucial role in sexual behaviour (Kowaleski-Jones & Mott, 1998). It is important to discuss the differences so as not to cause confusion. Self-esteem is related to an individual's feeling of self-worth, whereas self-efficacy is concerned with one's own judgement of their personal ability. Someone can feel they are completely inefficacious in a given activity but not suffer any loss of self-esteem (Bandura, 1997). So, when studying these two factors and their relationship with responsible sexual behaviour, it is important to remember that an individual may have low self-esteem but still feel in control of their sexual behaviour by using contraception effectively and consistently.

Self-efficacy beliefs are thought to influence behaviour through three mediating processes. Firstly, goal setting and persistence, individuals with a strong sense of self-efficacy are more likely to challenge their personal goals and persist with their goals even in the face of adversity. People who have confidence in their abilities set their sights higher, whereas those with self-doubt settle for much less (Maddux & Lewis, 1995). Therefore, those who prepare themselves before sexual intercourse with contraception are more likely to persist in unexpected situations if they have high goals and self-efficacy expectancies.

Secondly, those with higher self-efficacy have greater cognitive efficiency. Those that have confidence in their abilities to solve problems use their cognitive skills more effectively, than those who doubt their cognitive abilities. Those that have high self-efficacy are better able to negotiate events in their daily life (Maddux & Lewis, 1995). If they get into sexual situations, they are more likely to consider the consequences of continuing and are more likely to seek out contraception before they get further into a sexual encounter. Those that have unprotected sexual intercourse may doubt their cognitive skills and contraceptive knowledge they have and therefore not force their partner to use contraception if their partner refuses or continue knowing they are at risk of pregnancy.

Thirdly, adaptive emotional states can be influenced by an individual's belief of her personal competence and abilities. Personal inefficacy produces distressing emotional states, which can lead to further cognitive and behavioural inefficiencies. Those with low self-efficacy are likely to explain negative life events in ways that lead to feelings of hopelessness and inaction. These negative emotions can lead to excessive apprehension and despondency, which can lead to cognitive confusion, inefficiency, disorganisation and they may not try to change their behaviours (Maddux & Lewis, 1995). Therefore, having unprotected sexual intercourse because they feel they are unable to control their sexual encounters will lead to feelings of inadequacies, guilt and anxiety because of the negative consequences associated with unprotected intercourse (Gerrard, 1987). This can increase their low feelings of self-efficacy and they may not try to change their negative behaviours so may require intervention programs to increase their feelings of control when they are in sexual situations.

1.3.2 Determinants of self-efficacy beliefs

In self-efficacy theory, there are four main sources that influence and form self-efficacy beliefs and information. These are performance experience (the mastery of actual performance), vicarious experience (observing others performing), verbal persuasion (communicating), physiological and effective states (the use of fear and anxiety-producing methods) (Bandura, 1997; Maddux, 1995; Van den Bossche & Rubinson, 1998). Performance experience and vicarious experience are the most important source of efficacy information they will be discussed in relation to sexual behaviour and contraceptive use.

1.3.2.1 Performance experience

Performance experience (or enactive mastery of experience) is important for self-efficacy because it provides the majority of evidence for whether an individual can succeed. When an individual experiences successes, it provides her with feelings of self-efficacy. Failure of course, undermines these feelings and reinforces already low feelings of personal efficacy (Bandura, 1997). If an adolescent female gets herself into

a sexual situation for which she is not prepared and has sexual intercourse without contraception, the negative feelings associated with this lack of control can reinforce her risky behaviour as she may begin to doubt her ability to control future sexual experiences. Perceptions of failure diminish self-efficacy expectancy (Maddux, 1995).

Performance attainment is partly determined by how hard one works at a given pursuit. For example, if adolescent females work hard to gain knowledge and to use contraception when having sexual intercourse, they are more likely to perform a sexual situation with contraceptive success. Those who are not successful at using contraception need to have their level of self-efficacy improved this is best achieved through guided mastery experience. Educators should provide knowledge and skills required to exercise adequate control over sexual relations. Success in managing sexual situations will increase adolescent's beliefs of their capabilities that will reinforce their future behaviour (Bandura, 1997).

1.3.2.2 Vicarious experience

Vicarious experience (observational learning, modelling, and imitation) can play a role in influencing self-efficacy expectancy. Through the observation of those around us, individuals can gain information that they can use to form expectancies about their own behaviours (Bandura, 1997; Maddux, 1995). Research has shown that there are many social factors that can influence adolescents' choices and sexual behaviour, such as parental influences (Huerta-Franco, Diaz de Leon, & Malacara, 1996). Adolescents can learn risk-taking behaviours by observing their parents behaviour (Irwin & Igra, 1996). Adolescents are less likely to initiate early sexual activity if parents provide them with emotional support and acceptance and have a close relationship with their child (Turner, Irwin, Tschan & Millstein, 1993; cited in Igra & Irwin, 1996).

Most young people find talking about sexuality with parents and adult family members uncomfortable or impossible. Peers often act as the information provider, transmitting information about sexual activity and birth control and they tend to share similar sexual attitudes and age at first sexual intercourse (Barker & Rich, 1992; Berglund, Liljestrang, Marin, Salgado, & Zelaya., 1997; Shah & Zelnick, 1981).

Furthermore, one study found that adolescent females who had teenage sisters and peers with children were more likely to have permissive sexual attitudes and greater intentions for future sexual behaviour and had an elevated risk of child bearing themselves (East, Felice & Morgan, 1993). It could be argued that these girls provide negative role models and could affect an individual's perceived efficacy.

1.3.3 Adolescents and self-efficacy

Adolescence is an important growth stage of development that presents a host of new challenges. It is an important time as adolescent must start thinking about adulthood and assume greater responsibilities. Bandura (1997) emphasised that the way in which an adolescent develops and exercises her self-efficacy can play a crucial role in her future life course. Peers become much more important, they tend to choose others like themselves with similar values, and behavioural norms. The strength of an adolescent's self-efficacy will help her succeed through the transitions of adolescence. Self-efficacy can play a crucial role in many areas of adolescent development, but in this research it main focus will be on contraception use and an adolescents feeling of control over her sexual experiences.

Certain changes during adolescence can become crucial for development, such as learning how to deal with pubertal changes, emotionally invested partnerships and sexuality. The accelerated rate of physical development during this time can lead to unrealistic feelings and heightened concerns of their body and physique that can have social ramifications. Physical and biological changes can affect physical prowess and social status amongst peers', which can contribute to the development of self-efficacy (Bandura, 1997). Adolescence is a time of change and growth, an individual's feelings of control can drop because physical changes are inevitable and unpredictable. For females early pubertal changes can have a profound effect on them, socially and emotionally it can play an important role on their development. These adolescents may initiate sexual activity before they are cognitively mature enough to make an informed decision and understand the full consequences of their behaviour because they feel and appear physically mature (Steven-Simon & McAnarney, 1996).

Magnusson, Stattin, & Allen (1985) found that early maturation can lead to early sexual and drinking behaviours because they appear physically older than others of the same age so attract older peers as friends. Several other lines of research support the influence of pubertal development on adolescent sexual behaviour (Brooks-Gunn, 1987; Phinney, Jensen, Olsen, & Cundick, 1990). Early maturing girls tend to have older friends, more freedom from their parents and begin to date and have sexual relations earlier than their less developed peers (Brooks-Gunn, 1987).

Early developers must learn how to manage their sexuality long before they are ready, but this lack of preparedness does not prevent them from sexual ventures. Informing adolescent females about contraception and dangers of early irresponsible sexual behaviour is often not enough to ensure responsibility. Using the knowledge that they received through peers, the media and sexual education classes and applying it to their sexual behaviour requires social and self-regulation skills and a sense of self-efficacy to exercise control over sexual situations (Bandura, 1997).

In managing sexuality, people have to exercise control and influence over themselves and others. This requires self-regulation, which operates through internal standards, evaluative reaction to one's behaviour, use of self-motivation incentives and other cognitive skills. These self-regulation skills can be crucial for the development of adolescent sexual management. They determine the social situations adolescents get themselves into, how well they work through them and how effectively they can resist social advances to risky sexual behaviours. It is easier to control preliminary choice behaviours that could lead to social problems than to make an appropriate decision when in a sexual situation. Making decisions about sexual intercourse and contraception before you are in a sexual situation (the antecedent phase) mainly involves anticipatory choices and motivators that allows for a sense of control. Whereas when you are in a sexual situation (the entanglement phase) there are strong social incentives to engage in unprotected sexual intercourse, which are much harder to manage when you are an adolescent. This lack of management can lead to unprotected sexual intercourse and put them at high risk of teenage pregnancy (Bandura, 1997).

Adolescents need to be equipped with the skills that will enable them to put their sexual knowledge into practice consistently even in the face of social influences. Interpersonal pressure such as curiosity, desire for social acceptance and social pressure and the fear of rejection and embarrassment can effect an individual's judgement. The weaker an adolescent's self-efficacy to exercise control over their sexual behaviour, combined with social and affective factors, the greater the likelihood of early or risky sexual behaviour (Bandura, 1997).

A study by Kasen, Vaughan & Walters (1992) revealed that adolescents were uncertain of their ability to refuse sex under pressure or after using alcohol/drugs. Further, Kasen et al., (1992) assessed university students' level of self-efficacy and discovered that students with lower self-efficacy were twice as likely to have had sex and five times less likely to use condoms consistently. Other research has supported these findings and shown that self-efficacy influences risky sexual behaviours (Christ, Raszka & Dillon, 1998; Lauby, Seeman, O'Connell, Person, & Vogel, 2001; Strecher, DeVellis, Becker, & Rosenstock, 1986; Taris & Semin, 1998). Such research highlights that perceived control over sexual behaviour is associated with more effective use of contraceptives.

Overall, self-efficacy theory has been used by Bandura to explain motivations behind risky and dysfunctional behaviours that persist even when an individual has a desire to change. Research has shown that those who are more effective at using contraception have perceived self-efficacy to manage sexual encounters. Heinrich (1993) found that women who are sexually experienced, knowledgeable about contraception and highly motivated to prevent pregnancy failed to use contraception effectively and consistently if they lack self-efficacy. Basen-Engquist & Parcel (1992) concluded that favourable attitudes towards contraception indicate that adolescents are more likely to use them but self-efficacy determines whether this intention will be put into practice.

In self-efficacy interventions, behavioural situations and role plays have been used to diagnose and treat those behaviours, skill deficits, cognitive thoughts, which interfere with an individual's ability to perform a particular behavioural task, such as preparing for and using contraception for every sexual moment (Levinson, 1986). This study

will attempt to measure sexually active adolescent females level of self-efficacy by using the contraceptive self-efficacy questionnaire (CSE; Levinson, 1986). It is thought that certain personality constructs maybe predictive of contraception use in relation to their level of self-efficacy. It has been suggested that contraception use is related to a female's perceived control within sexual situations and will determine if she uses contraception (Levinson, 1998). The next section will concentrate on contraceptive self-efficacy and the construct used to measure it.

1.3.4 Contraceptive Self-efficacy

According to Levinson (1986, 1995) the self-efficacy construct is the expectation of a person as to whether she/he can and should exercise behaviour that will determine initiation and persistence in achieving a desired goal. Some sexually active adolescent females do not use contraception even when they do not want to get pregnant, and is thought to be similar to other types of phobic behaviours. Levinson (1998) argued that if self-efficacy could be used to explain aspects of phobias, it could be applied to other behavioural domains, such as contraception use.

Levinson (1986, 1998) has incorporated contraceptive use as a special behavioural domain of self-efficacy. Levinson extended self-efficacy theory to encompass adolescent contraceptive behaviour by developing the contraceptive self-efficacy questionnaire (CSE) in order to assess contraceptive use among sexually active adolescent women. This scale assesses the motivational barriers that affect an adolescent's decision to use contraception. It considers the strength of a sexually active teenage woman's conviction that she should and can control both sexual and contraceptive encounters to achieve positive outcomes of her sexual behaviour and responsible patterns of sexual activities (Levinson, 1986, 1998; Levinson, Wan & Beamer, 1998).

The CSE uses 18 situational items, which participants rate on a 5-point Likert scale of how true it is of them. Levinson derived the behavioural situations from Family Planning, psychology and social psychology literature that distinguished successful

and unsuccessful contraceptive users based on personal, interpersonal and environmental variables. Some of the behavioural situations on the measure replicate the kind of conditions in which adolescent females have reported not using contraception. An example of one of these situational questions is “If my boyfriend and I are getting “turned on” sexually and I don’t really want to have sexual intercourse, I can easily stop things so that we don’t have to have intercourse”.

Other behavioural situations looked at adolescent females’ acceptance of her sexual emotions, initiative and assertiveness, an example is “If there was a man to whom I was very attracted physically and emotionally, I could feel comfortable telling him that I wanted to have sex with him”. Finally, some of the situations determine the extent to which a female believes she can execute successful contraceptive behaviours, an example of a statement is “It would be hard for me to go to the chemist or Family Planning and ask for contraception without feeling embarrassed”. These stressful situations are meant to manipulate social, psychological, emotional, physical and practical stressors (Levinson, 1986; Levinson et al., 1998).

Adolescent females are likely to be more successful in using contraception if they are assertive in using protection, competent about using and attaining protection, can communicate about their contraceptive and sexual behaviours, and can accept their sexuality and plan for their sexual encounters (Levinson, 1986). If they feel more in control of their sexual encounters then they will execute the appropriate behaviours. It is thought that through education classes and counselling a young female could be taught the appropriate skills to help her resist sexual advances and become an effective contraceptive user for every sexual encounter.

Previous research has demonstrated that self-efficacy is related to successful adjustment to a negative life event like pregnancy and abortion (Bandura, 1977; Schiaffino & Revenson, 1992). Other research has shown that contraceptive self-efficacy is a good predictor of contraceptive behaviour for adolescent and university students even with effects from other variables (e.g. age, sexual experience, education) were taken into account. Respondents with high levels of contraceptive self-efficacy were found to be highly motivated to seek out and use contraception (Heinrich, 1993; Levinson, 1986, 1995; Levinson et al., 1998).

Findings associated with CSE may have relevancy for the prevention of both adolescent pregnancy and sexually transmitted infections because research has shown that health behaviours can be improved when self-efficacy is enhanced (Levinson, 1986; 1995). Therefore, it is thought that adolescent woman who use contraception will have higher levels of CSE because they should feel like they can control sexual and contraceptive situations, so are less likely to have unprotected sexual relations. Those that have unprotected sexual intercourse, abortions, or are younger, will typically score lower on the CSE scale (Heinrich, 1993).

Bandura (1977) argued that behaviour therapy can be used to increase self-efficacy and it leads people to believe in themselves and feel they are able to control difficult situations, such as times when decisions need to be made about contraception use. By assessing which personality traits are linked with low contraceptive self-efficacy, it can then be applied to reducing the risk of unplanned pregnancy and increasing contraceptive use. By improving perceived self-efficacy it can free the individual to perform actions that previously were not possible such as controlling their intimate relationships.

Self-efficacy has been used in the clinical aspects of psychology, and research has shown that individuals' perceived efficacy could be increased through therapy. Health behaviour theories aim at changing behaviours, in particular at the causal mechanisms that either help maintain a specific behaviour (such as abstinence from sexual intercourse) or help shape an intention to change an individual's behaviour (start being an effective contraceptive user) (Schwarzer, 1992). Increasing an adolescent females' perceived efficacy may motivate her to resist sexual advances and to consistently use contraception to avoid pregnancy.

Gilchrist and Schinke (1983) used modelling and role-plays that dealt with contraceptive and other sexual matters, they found that this approach significantly raised perceived efficacy. In this study the CSE will be used to gain an understanding of an individual's contraceptive use in relation to her personality traits, alcohol use and demographic variables. By understanding more about those that engage in risky sexual behaviours and relating it to self-efficacy, it is possible to gain a better understanding of individuals so we can provide more successful

programs/interventions for at risk females. Those females with low CSE could receive therapy that increases their level of self-efficacy, so they can feel in control of every sexual encounter.

1.4 Sociosexuality

1.4.1 Definition

Sociosexuality can be defined as differences between individuals in their willingness to engage in uncommitted sexual relations (Simpson & Gangestad, 1991a). Individual beliefs and motivation also plays an important role in sexual decisions and behaviour. Sexuality develops in the context of personality characteristics, including temperament, attitudes, abilities, and fears; as well as socio-cultural forces like family values and societal norms (Wright, 1999). Past research has shown that individuals vary on several sociosexual variables, including number of sexual partners, number of sexual partners individuals' assume they will have in the future, number of one-night stands and attitudes towards having sexual intercourse outside of a committed, emotionally attached relationship (Eysenck, 1976; cited in Simpson & Gangestad 1991a).

Individual differences in a person's willingness to engage in uncommitted sexual relationships, is based on an individual's personal experiences and beliefs, these differences play an important role in deciding whether to have unprotected sexual intercourse (Simpson & Gangestad, 1991b, Simpson, 1998). When considering all these variables together these individual differences reflect sociosexual orientation.

1.4.2 Sociosexual Orientation Inventory

Simpson and Gangestad (1991a, 1991b) formulated a self-report measure that assesses these dimensions termed the sociosexual orientation inventory (SOI). The SOI consists of five components. Firstly, it examines individuals past sexual behaviour and experiences by looking at the number of sexual partners and number of one-night stands they have encountered. Secondly, it looks at their future sexual behaviour by enquiring how many sexual partners they foresee having in the next five years.

Thirdly, it determines their current sexual thoughts by measuring the frequency in which they fantasise about individuals other than their current sexual partner. Sexual fantasies are based on making mental images of potential partners who fulfil a perceived need, often what the current partner is lacking. These kind of sexual images become linked with emotional qualities. If adolescents are fantasising about someone other than their current partner on a regular basis then it could be assumed that they lack commitment (Miller & Benson, 1999). Finally, the SOI establishes an individual's current attitude towards casual, uncommitted sexual intercourse (Simpson & Gangestad, 1991a).

Simpson and Gangestad (1991b) used the sociosexual orientation inventory to assess the possible stability, origins and motivational bases underlying individual differences in sexual behaviour. They found that individuals with low levels on the inventory possess a restricted sociosexual orientation; they found that these individuals typically want closeness and commitment before they will engage in sexual intercourse with a potential partner. They have had fewer sexual relations, they anticipate having fewer sexual partners in the next five years and have rarely (if ever) had sex with a partner on one and only one occasion (one-night stand). They infrequently fantasise about having sexual intercourse with someone other than their current or most recent sexual partner and they have less permissive attitudes about uncommitted sexual intercourse.

Those on the other end of the scale exhibit an unrestricted sociosexual orientation, they tend to be comfortable about having sexual relations without closeness and commitment. They report having several different sexual partners in the past year, they feel they could enjoy sex without commitment and have sex at a much earlier point in their relationships. They typically have had one-night stands at least once, they frequently fantasise about having sexual intercourse with someone other than their current sexual partner and have permissive attitudes about sexual intercourse in general (Gangestad and Simpson, 1991a,b).

It has been found that personality correlates with sociosexual orientation. Eysenck (1973) found that sociosexual behaviour is predictive of extroversion. Extroverts relative to introverts, typically have sexual intercourse at a younger age, they engage in sexual intercourse more frequently and with multiple partners and possess more permissive attitudes towards sexual intercourse. Therefore, these sociosexual behaviours should predict an individual's sociosexual orientation. Simpson and Gangestad (1991a) found that extroversion correlated very highly with the sociosexual inventory. Other research supports the findings that extroverts tend to have unrestricted sociosexual orientations (Simpson & Gangestad, 1993; Wright & Reise, 1997).

Further, research has found that unrestricted individuals are more likely to choose potential partners that are socially visible and attractive, whereas restricted individuals had more responsible, faithful and affectionate partners (Simpson & Gangestad, 1992). This highlights the differences in attitudes between restricted and unrestricted individuals' romantic relationships. Research has also highlighted gender differences, males are reported have more permissive attitudes and greater unrestricted sociosexual behaviour patterns than females (Januszewski, 1997).

Gangestad and Simpson (1991a) proposed that strong evolutionary pressures drive individuals' differences on sociosexuality. They have recently developed an evolutionary based model of mating propensities (for a detailed discussion of the model see Simpson & Gangestad, 1991a). This study does not make any contributions towards the social evolutionary theory of sexual selection.

It could be assumed that those who have more emotional feelings and motivation to follow their beliefs about sexual intercourse (restricted sociosexual) will have high levels of CSE (refer to Figure 1). Research found that motivation was significantly linked with SOI and that unrestricted individuals showed less commitment and motivation within sexual relationships (Simpson & Gangestad, 1991b). Restricted individuals were more motivated within their sexual relationships. Presumably, they will have more motivation to take control and responsibility for sexual intercourse and its consequence. Restricted individuals will be prepared for any sexual relations and are motivated to withdraw from sexual intercourse until they are prepared as they are looking for closeness and commitment, therefore, are more likely to be able to discuss contraception use with their partner.

Those that can engage in sexual relations for purely physical reasons (unrestricted sociosexual) are likely to have low level of CSE because they are more likely to get themselves into unplanned sexual encounters and continue even when they do not have contraception. Research has found that although unrestricted individuals had greater knowledge about safe sex, they were more likely to engage in unprotected sexual intercourse (Seal & Agostinelli, 1994).

Further, it has been found that individuals with high levels of extroversion tend to possess attitudes that are more permissive about uncommitted sexual intercourse and are more inclined to engage in unrestricted sexual behaviour compared to those with low levels (refer to Figure 1). These individuals are often less religious and politically conservative, therefore, their sexual beliefs and morals are likely to be more liberal compared to those with strong religious and moral convictions. (Simpson & Gangestad, 1991). Seal and Agostinelli (1994) further found that unrestricted individuals reported being more impulsive, situationally responsive and risk-takers (which can be associated with aspects of the extraversion trait) compared with restricted individuals.

Those that are highly conscientious are presumably more likely to have a restricted sociosexual orientation, due to their level of motivation and the personal goals they aspire to achieve. They will make a decision early in adolescence about their sexual beliefs and morals and will not want to jeopardise these goals with risky sexual

behaviour. Therefore, due to their convictions and motivation to follow their beliefs they will feel like they are in control of any sexual encounters and score highly on the CSE questionnaire (refer to Figure 1).

1.5 Alcohol use in Adolescence

An adolescent's level of responsibility is considered to be an important characteristic in decision making during the turmoil times of adolescence. Ortman (1988) reported that adolescent's level of responsibility was strongly related with their level of control (self-efficacy) and well-being. Kasen et al., (1992) found that drugs and alcohol lower perceived self-efficacy to adhere to safe sexual practices. What characterises the conception of adulthood during adolescence is accepting responsibility for ones self and making independent decisions (Whiting, 1998). Several studies have shown an association between risk-taking behaviours and inconsistent contraception use (Brewster, 1994; Christ, Raszka & Dillon, 1998; Cooksey et al., 1996; Gullone & Moore, 2000; Small & Luster, 1994). Adolescents that accept and act responsibly will presumably use contraception or choose not to have sexual intercourse at all.

This study will use alcohol misuse to identify an individual's level of responsibility and risk-taking and its relationship with sexual behaviour. Alcohol is the most commonly used and abused substance by adolescents (Sells & Blum, 1996). Sexual activity is strongly associated with alcohol consumption, using marijuana, having peers who drink and having substance use problems (Kowaleski-Jones & Mott, 1998). Small and Luster (1994) found that alcohol consumption was a significant predictor of sexual risk-taking.

Alcohol use is considered to make social situation more relaxing and reduces levels of anxiety, this can provide adolescence with the confidence to embark on sexual activities. A number of authors have reported that sexually active teenagers report higher rates of alcohol use and misuse than teenagers who are not sexually active (Fergusson & Lynskey, 1996; Rees, Argys & Averett, 2001; Small & Luster, 1994). Fergusson and Lynskey (1996) in a New Zealand study found that there are gender

differences in the relationships between alcohol misuse and sexual conduct. They found a higher association for females between alcohol misuse and early onset of sexual activity. Boys, however, were less likely to use contraception when misusing alcohol.

It has been argued that alcohol is linked with increase chances of conducting risky sexual behaviour and other risk-taking behaviours as a result of the disinhibiting effects of alcohol. The alternative explanation is that the correlations between teenage sexual behaviours and alcohol use arise because the risk factors and life pathways that encourage sexual risk-taking behaviours may overlap with the risk factors and life pathways that encourage the development of alcohol use and misuse. This may encourage sexual experimentation and may lead to risk-taking behaviours. These risk factors include social disadvantages, family problems, individual behavioural tendencies, personality, and peer pressure (Fergusson & Lynskey, 1996).

This study will attempt to identify the role alcohol plays in sexual risk-taking, it has been argued that individuals who have unprotected sexual intercourse will consume more alcohol and conduct more risk taking behaviours associated with alcohol misuse. These behaviours include driving while under the influence, experiencing loss of memory, having hangovers, having sexual intercourse without contraception and if they have been taken advantage of sexually while under the influence of alcohol. Further, alcohol misuse has been hypothesised to be linked with whether an individual has had sexual intercourse or whether they have abstained (Refer to Figure 1).

1.6 Implications for sexual education

If an adolescent female has low CSE then she is at greater risk of getting pregnant and contracting and STI, interventions designed to improve CSE may motivate females to use contraception or abstain from having sexual intercourse until they are prepared. According to Bandura (1990; cited in Kvaem & Traeen, 2000), knowledge on how one must protect themselves needs to be combined with the perception of being able to exercise control over sexual situations and social skills. Interventions need to help adolescent females to convey the belief that they can exercise control and responsibility for their sexual and contraceptive behaviour. Levinson (1986) reasoned, “The goal of CSE training would be to teach young women how they can be responsible for the events in their lives so that they can act in a way that is sexually responsible” (pp. 366).

Levinson (1998) has recommended that the CSE scale should be used prior to interventions in order to provide the appropriate intervention for those with a greater risk of unprotected sexual intercourse and to examine the scores on each item of the CSE scale to get an understanding of which sexual situations they fail to use contraception. Levinson (1995) has argued that by providing adolescents with contraceptive knowledge does not necessarily mean they alter their contraceptive and sexual behaviours.

On examination of past successful sexual education program, Levinson (1995) found they focused on motivational factors that may affect adolescents initiation into sexual behaviour and contraceptive use. Skills’ training has also been successful when they have utilised a reproductive and contraceptive knowledge base from an emotional and behavioural perspective. The training focuses on the implications and consequences of unprotected sexual intercourse (emotional) and by practising domain specific skills training (behavioural). It has been suggested that these programs are successful because they are presented in a social-psychological context rather than just a cognitive perspective. Graber et al., (1998) support these ideas and argued that a successful sexual education programs have included teaching adolescents’ feelings and emotions about sexuality, decision-making skills on how to manage and negotiate risky situations. These combined in counselling and education programs may benefit

both those that have had sexual intercourse, to use contraception and those that have not to help them abstain in pressure situations.

Overall, Levinson (1986, 1995) stated that adolescents need to be taught about sexual decision-making and contraception by relating them to the different kinds of feelings, needs, pressures and situations that they may experience as they develop sexually. At a cognitive level, the thoughts that influence sexual self-acceptance, sexual assertiveness, communication and sexual and contraceptive behaviour need to be acknowledged, identified to the adolescent and labelled. This would allow adolescent females to gain a greater understanding of the positive and negative influences their thoughts play on their decision-making (Levinson et al., 1998).

If adolescent females are more prepared emotionally and behaviourally for sexual encounter they will feel more empowered to take responsibility for their sexual behaviour. By gaining a better understanding of adolescents and their sexual behaviour education programs can be improved with the emphasis on decreasing risky sexual behaviours by using contraception or by abstaining from sexual intercourse until an individual is more prepared.

1.7 Hypotheses

Based on the literature reviewed the present study predicted the following hypotheses for establishing individual differences between those who are sexually active but don't use contraception and those that are effective contraceptive users or have abstained from sexual intercourse. The hypotheses proposed for this study are:

Hypothesis 1: Extroversion will have a negative association with Contraceptive Self-Efficacy

Hypothesis 1: Those females with higher levels of the extroversion trait would be less likely to use contraception, therefore are likely to have low levels of CSE. These individuals are likely to get themselves into unplanned sexual encounters that therefore put them at greater risk for not using contraception.

Hypothesis 2: Extroversion will be positively associated with Unrestricted Sociosexual Orientations.

Hypothesis 2: Individuals that are highly extroverted will score higher on the sociosexual orientation inventory and have unrestricted sociosexual orientation. They are less likely to judge their sexual behaviour as risky and therefore more likely to score higher on the sociosexual variables because they do not believe that having unprotected sexual encounters and multiple partners is risky.

Hypothesis 3: Extroverts have higher levels of both sexual risk-taking and alcohol misuse.

Hypothesis 3: Individuals with high levels of the extroversion trait are more likely to have had sexual intercourse, to be involved in risk-taking behaviour associated with alcohol misuse, had multiple sexual partners and had sexual intercourse at a young age. Those that have high levels of extroversion probably do not think deeply about sexual intercourse and contraception or of their sexual values because they prefer to take chances and live for the moment without thinking of the consequences. They are likely to socialise more and therefore have easier access to alcohol.

Hypothesis 4: Conscientiousness will have a positive association with Contraceptive Self-Efficacy.

Hypothesis 4: Those females with high levels of the conscientiousness trait will score higher on the CSE questionnaire and therefore are more likely to use contraception and feel in control of sexual situations. These individuals are likely to be prepared and organised for any sexual encounter by having and using contraception.

Hypothesis 5: Conscientious individuals have lower levels of risk-taking behaviour associated with alcohol use.

Hypothesis 5: Conscientious females are likely to have fewer sexual partners or have abstained from sexual intercourse and are less likely to be involved in risk-taking behaviours associated with alcohol. Those that are highly conscientious know what they want out of life and when you are an adolescent a child is probably not one of their immediate desires. They are more open and honest because they know where they are going and what they need to do to achieve their goals, so they are more likely to think in advance about protection if they are planning to have sexual intercourse or not be sexually active at all.

Hypothesis 6: Conscientiousness will be negatively associated with sociosexual orientation.

Hypothesis 6: Higher levels of conscientiousness will be negatively associated with the sociosexual inventory and are more likely to have restricted sociosexual orientations. They are more likely to develop early beliefs about sexual intercourse and due to the risk involved with certain aspects of intercourse would be more likely to hold strong moral beliefs, such as only having sex in a committed relationship and therefore with fewer sexual partners.

Hypothesis 7: Alcohol misuse will be associated with sexual behaviour in adolescent females.

Hypothesis 7: Those that consume greater amount of alcohol are more likely to have had sexual intercourse and more likely to engage in risk-taking behaviours related to sexual intercourse and other risky behaviours. It is also assumed that these individuals will have lower levels of CSE because alcohol can inhibit adolescents' decision-making and put them at greater risk of having unprotected sexual intercourse.

1.8 Summary

In New Zealand, there has been limited research in the area of adolescent sexual behaviour and personality. Most studies that examine the links between personality and sexual behaviour are based on American students who have the highest rate of teen pregnancies and STI's in the Western world (Cheesbrough, Ingham & Massey, 1999; cited in Ellis, Bates, Dodge, Fergusson, Horwood, Pettit, & Woodward, 2001). In order to gain a better understanding of New Zealand adolescents this study will attempt to identify those who are at greater risk of performing risky sexual behaviours, by recognising those who do not use contraception and what aspects of their personality effect their decision-making processes from those who are effective contraceptive users and abstainers. New Zealand still has one of the highest teenage pregnancy rates and therefore it is important that risk factors are recognised within our own society so we can educate at risk adolescents (Dickson, Sporle, Rimene & Paul, 2000; cited in Ellis et al., 2001). These factors include examining the relationship between aspects of an individual's personality, their perceived efficacy of sexual encounters, their attitudes towards sexual intercourse, responsibility associated with alcohol use and demographic variables, such as age, socioeconomic status, parental relationships etc. Adolescence is an important time for development into adulthood, events that occur during this time can have a life long effect not only on the individual but also on those around them.

2.0 Method

2.1 Participants

Letters were sent out to all the secondary schools within the Christchurch district (presented in Appendix 1). One hundred and thirty participants from three female single sex schools were recruited, two were private girls' schools (n=88) and the other was a public girls' school (n=42).

The mean age of the participants was 16.9 years (sd=0.69; range=16-18 years of age). The majority of the participants were white, with mid-high socioeconomic status (m=2.74). Two out of the 71 participants that reported being sexually active had been pregnant in the last 12 months and no participants reported having had a sexually transmitted infection.

2.2 Materials and Procedure

Participants were approached in life-skills classes and study classes, with 15-35 females within each group. Of the 131 questionnaires handed back, only one was considered not valid as it failed to answer several of the items and there were inconsistencies in their answers. The participants were assured of complete confidentiality and anonymity, it was explained that the questionnaires would not be shown to anyone but the investigator. The researcher emphasised the importance of answering the questionnaire honestly and independently.

The participants were given three questionnaires to answer and a set of demographic questions to complete. On the front of the handout was a covering letter that discussed briefly the outline of the project and a consent form that required their name, signature and date (only if they wanted to go into the draw to win a prize) which is presented in Appendix 2. The instruments are discussed in greater detail below.

2.2.1 Demographic Variables

Respondents provided information on contraception use, sexual experiences, and demographic variables. All participants were asked to provide answers to questions about their religion, age, ethnicity, and parents' primary occupations. Some of the demographic questions required participants to tick the box that corresponds with their answer. Questions that were only to be answered by those who have had sexual intercourse focused on contraception use, number of sexual partners, whether they have been pregnant or had a sexually transmitted infection. Answers were indicated by ticking the appropriate box and by a written response. See Appendix 3 for a copy of the demographic variables.

Parental relationships were measured by asking if they were born into a two parent or one parent household by ticking the corresponding box. The subjects were then asked to indicate if their parents were still together by ticking the yes or no box. Finally, for those whose parents were separated or divorced the respondents were asked to indicate whom they primarily lived with, their mother or father, by ticking the appropriate box.

The final questions focused on alcohol use, firstly participants were asked to indicate how often in the past 6 months they had consumed alcohol. Participants were asked to tick the box that corresponds with their answer, the following format was used:

<input type="checkbox"/>	Never
<input type="checkbox"/>	Very occasionally (once or twice)
<input type="checkbox"/>	Less than once a month
<input type="checkbox"/>	At least once a month
<input type="checkbox"/>	At least once a week
<input type="checkbox"/>	Almost everyday

The second question focused on how much the participant typically drinks on any occasion. Participants were asked indicate by ticking the appropriate box, the answers ranged from:

<input type="checkbox"/>	I don't drink
<input type="checkbox"/>	1-2 glasses
<input type="checkbox"/>	3-4 glasses
<input type="checkbox"/>	5-6 glasses
<input type="checkbox"/>	7-8 glasses
<input type="checkbox"/>	9-10 glasses
<input type="checkbox"/>	10+ glasses

Further, participants were asked to estimate at what age they first started consuming alcohol, by writing their answer in the space provided. .

The final questions respondents were required to write the corresponding number associated with how often they had experienced the following due excess alcohol consumption. These included hangovers, loss of memory, whether they have been sexually taken advantage of, had sexual intercourse without contraception and driven whilst under the influence. It was assumed that those who experienced these more often were more likely to misuse alcohol. It was measured on a 6-point Likert scale:

- (1) Never
- (2) Once
- (3) Twice
- (4) 3-6 times
- (5) 8-9 times
- (6) 10+ times

Certain questions did not need to be answered by those that had not had sexual intercourse, as they were associated with individuals' contraception use, this was indicated by stating the next question they needed to skip forward to. Total time required for this section was about five minutes for those that have had sexual intercourse; a lesser amount of time was expected for those that had not had sexual intercourse.

2.2.2 Contraceptive Self-Efficacy Questionnaire

The self-administered contraceptive self-efficacy instrument (CSE presented in Appendix 5) assesses motivational obstacles to contraceptive use among sexually active adolescent females (Levinson, 1998). The statements in this measure evaluate the respondents' perception that they can and should take responsibility for sexual and contraceptive behaviours across a variety of situations. CSE contains 18 items, which individuals respond to on a 5-point Likert scale ranging from:

- (1) Not at all true of me
- (2) Slightly true of me
- (3) Somewhat true of me
- (4) Mostly true of me and
- (5) Completely true of me.

The following is an example of a statement in the CSE questionnaire, "When I think about what having sex means, I can't have sex so easily". Individuals then respond by circling the number that best corresponds to how true or not true the statement is for them (Levinson, 1998; Levinson, Wan, & Beamer, 1998). Those participants who were currently sexually active and those who have had sexual intercourse completed the questionnaire. The raw score was calculated with the higher scores representing a high level of contraceptive self-efficacy. The total amount of time needed on this questionnaire was about 5 minutes.

The reliability of this measure showed that CSE is internally consistent with an acceptable reliability co-efficient (Cronbach alpha = .73) (Levinson, 1998). Levinson (1998) has stated that the CSE items were individually examined and pre-tested with different populations during construction in order to establish face and content validity.

2.2.3 Sociosexual orientation inventory

The sociosexual orientation inventory (SOI; presented in Appendix 6) was developed to measure an individual's willingness to engage in casual, uncommitted sexual relationships (Gangestad & Simpson, 1991; Simpson, 1998). The SOI consists of seven items, the first two items asks individuals to respond to questions about their past sexual relationships, for example the number of sexual and casual partners they have had. The respondents are required to write down the specific number of sexual partners they have had. The next item assesses their future sexual behaviour by asking them to estimate the number of sexual partners they will have in the next five years. Question 4 inquires about sexual fantasies, by questioning how often the respondent fantasises about having sexual intercourse with someone other than their current (or most recent) sexual partner, using a Likert 8-point scale ranging from:

- (1) Never
- (2) Once every two or three months
- (3) Once a month
- (4) Once every two weeks
- (5) Once a week
- (6) A few times a week
- (7) Nearly every day
- (8) Everyday.

The final three items inquires about respondents attitudes towards casual sexual relations, the questions include "Sex without love is okay", "I can imagine being comfortable having sex with a casual partner" and "I would have to be closely attached to someone before I have sexual relations with them". Participants indicate by circling the number they associate with their attitude and beliefs using a 5-point Likert scale:

- (1) Strongly disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly agree.

Individuals with a restricted sociosexual orientation report having fewer partners in the past five years, they anticipate having few in the future and they are less likely to have had “one night stands”. They rarely fantasise about having sex with someone else and believe you should only have sex when you feel love and commitment (Wright & Reise, 1997).

Unrestricted individuals’ report having a larger number of sexual partners, they anticipate having more sexual partners’ in the future and have engaged in “one night stands”. Further, they have fantasised about having sex with others besides their current or most recent partner, and they believe it is acceptable to have sex without commitment and love (Wright & Reise, 1997).

When scoring the attitudinal component of the SOI an overall raw score is calculated. Due to question 2 requiring a written response to ensure that it does not have a disproportionate influence the maximum number for item 2 (number of sexual partners you foresee having in the next five years) should be limited to 30. Total time required on this questionnaire was under 5 minutes.

Simpson and Gangestad (1991b) have demonstrated validity and reliability for this scale and also found high test-retest reliability. Simpson and Gangestad (1991b) demonstrated convergent validity by showing that higher scores on the SOI were associated with earlier sexual relations, the greater likelihood of having more than one sexual partner at a time, and high quality sexual relationships. They demonstrated discriminant validity by showing that scores on SOI were unrelated to measures of other but unrelated sexuality constructs (e.g., sex drive) (Sprecher, Regan, McKeney, Maxwell & Wazienski, 1997).

2.2.4 NEO Personality Inventory

The NEO Five-Factor Inventory (NEO-FFI Form S; Costa & McCrae, 1992) provides a brief, comprehensive measure of the five major dimensions of personality (presented in Appendix 4). NEO-FFI (Costa & McCrae, 1992) is a 60-item self-report questionnaire that produces subscale scores for each of the five major dimensions of normal personality: extroversion (E), conscientiousness (C), neuroticism (N), openness (O), and agreeableness (A).

The NEO-FFI was developed as a short version of the NEO-PI by selecting from the longer inventory the 12 items with the highest positive or negative factor loadings on each of the five corresponding domains (Tokar, Fischer, Snell & Harik-Williams, 1999). Eight extra items were added to the 60-item version of the NEO-FFI from the original NEO PI-R five-factor inventory. These extra items were measures of extroversion and conscientiousness as they were central to the hypotheses of this study, the extra items are indicated by a * on the questionnaire in Appendix 4.

The NEO-FFI was specifically designed to assess the Five-Factor Model of personality, and analysis's factors into distinct facets (E, C, N, A, O). Individuals respond on a 5-point Likert scale with the following format:

- (1) Strongly disagree
- (2) Disagree
- (3) Neutral
- (4) Agree
- (5) Strongly agree

Respondents read the statements, "When I make a commitment, I can always be counted on to follow through" (conscientiousness), then indicate whether they agree or disagree by circling the appropriate number that corresponds with their answer. Other items include "I like to have a lot of people around me" (extroversion), "Sometimes I feel completely worthless" (neuroticism), "I would rather co-operate

with others than compete with them” (agreeableness). The amount of time spent on this questionnaire varied from 10 to 15 minutes.

Scoring involved the use of a computer program that computes the raw scores for each domain and uses them to generate the participants’ interpretive profile. If the respondent has not provided a response to ten or more items then the test should be considered invalid. Any blank items should be scored as if the neutral response option was selected. When subjects answered items with two responses, the answer closest to the neutral was used or neutral if that was one of the two selected (Costa and McCrae, 1992 pp. 13).

The psychometric properties reported for the NEO-FFI is positive, but it is less strongly supported than the NEO PR-R. The internal consistency for the NEO-FFI, as measured using co-efficient alpha, had acceptable reliability for each trait. As a subset of the NEO PI-R scale, the NEO-FFI carries with it some portion of the validity from the full scale. Inter-correlations have been found between self-reports, spouse-ratings, peer-ratings and the NEO-FFI (Costa & McCrae, 1992; Gullone & Moore, 2000). These correlations provide good support for the convergent and divergent validity of the NEO-FFI. Like with most abbreviated scales precision has been traded for speed and convenience due to given time restraints.

When the participants had handed back the completed questionnaire they were given an information sheet outlining the reasoning and expected findings of the study (displayed in Appendix 7) and a list of places that adolescents can gain advice about sexual intercourse and contraception (presented in Appendix 8).

3.0 Results

3.1 Introduction

The analyses in this study are organised into five sections. Section one presents a series of pie graphs depicting the percentage of responses by demographic variables. Further analyses displays the frequency of participants in each age group based on when they first had sexual intercourse and the frequency of sexual partners by the number of sexual partners and number of years they have been sexually active. Section 2 presents an analysis of the mean scores and standard deviations of the demographic variables and the personality trait scores for the two groups, broken down by those that have sexual intercourse and those that have abstained.

Section 3 analysis's the mean responses on the alcohol consumption scale to establish if there is a significant difference between the two groups by conducting an Analysis of Variance (ANOVA). Section 4 presents an analysis of the correlations for all the participants. Correlations are also presented for the two groups those that have had sexual intercourse and those that have not. Section 5 presents a *t*-test for independent means in order to analyse the means of the two groups to establish if there is a significant difference between the scores for each domain on the NEO-FFI. Finally, section 6 uses a *t*-test for independent means to examine the mean scores for those that use contraception under the influence of alcohol and those that do not, in order to establish differences within the two groups on the personality measure, the SOI, and the CSE.

3.2 Statistics

The first step in the analytic process was to explore the data. Data that appeared to be unrealistic and inconsistent was removed from the entire study (one was deleted). A series of analyses were initially performed that examined and summarised the collected data. Pie graphs were used to identify the frequency of responses for some of the demographic variables, with some showing comparisons between the two groups. Tables of percentages were used to show the distribution of sexual partners and distribution of age of first sexual experience. Means were calculated for all the participants and then for the two groups, those that have had sexual intercourse and those that have not. Further, an ANOVA was used to compare those that have had sexual intercourse with the means of the alcohol consumption measures.

Correlations were performed to establish relationships between all the participants, using the personality measures and demographic variables. Further, correlations between the demographic variables, measures of personality, contraceptive self-efficacy, and the sociosexual orientation inventory were established for those that have had sexual intercourse. Those that have not had sexual intercourse did not need to answer the sexual measures and certain demographics questions, separate correlations were established to identify relationship differences between the two groups.

A series of *t*-test for independent means were used to compare the two groups' means for the personality traits and whether or not subjects have had sexual intercourse. One of the questions in the alcohol consumption section did not relate to those that had not had sexual intercourse. Therefore, a *t*-test for independent means was used to compare the means between those who reported having unprotected sexual intercourse whilst under the influence of alcohol and those that have never had unprotected sexual encounters with the personality measure, the CSE and the SOI.

3.3 Demographics

3.3.1 Pie graphs of the demographic variables.

The figures below represent percentages for each of the demographic variables expressed as pie charts. The data examines the percentage of participant responses to certain questions. This will give a greater understanding of the participants and reveal the differences in responses of the two groups.

Figure 2 shows the percentage of participants that have had sexual intercourse and those that have not in the present study. The results presented in the pie graph revealed that over half (54.6%) of the females in the present study have had sexual intercourse.

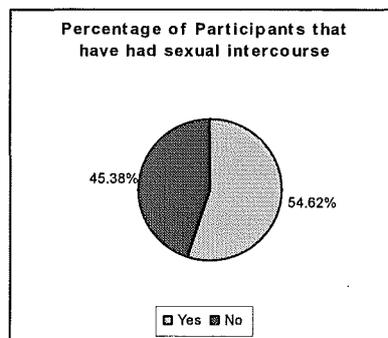


Figure 2: Sexual Intercourse Status of the participants

Figure 3 presents the percentage of participants for each ethnicity grouping. The pie graph revealed that the majority of the participants (83.4%) reported being European/Pākehā.

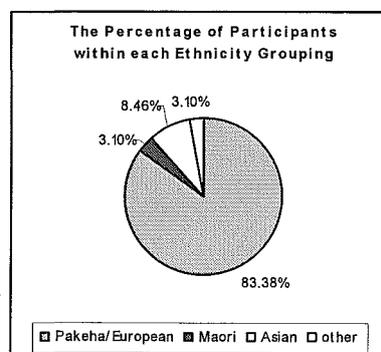


Figure 3: Ethnicity of Participants

Figures 4/5 show the percentage of participants for each religious group by their sexual experience. A higher percentage of those that have not had sexual intercourse (40.7%) stated that they followed no particular religion compared to those who have had sexual intercourse (35.2%). Of those who reported being sexually active a greater majority indicated that they were of Christian faith (50.7%) compared to those that have not had sexual intercourse. Overall, a higher percentage of participants in the sexually active group (64.8%) reported being religious compared with those that have abstained from sexual intercourse (59.3%).

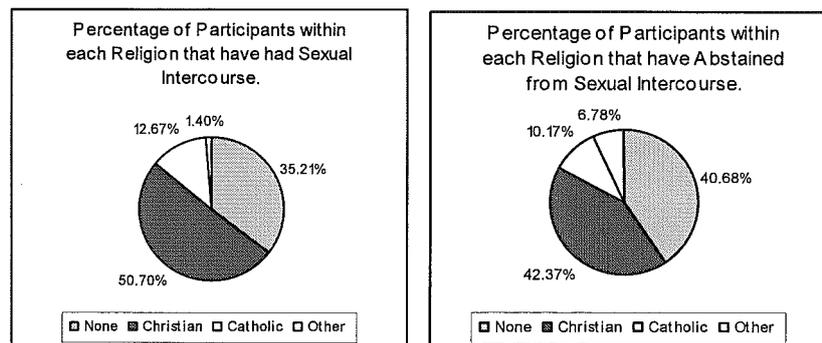


Figure 4/5: The Religion of Participants

Figures 6/7 reveal the percentage of participants whose parents were still together. The two pie graphs show the differences in percentages for the two groups, those who have had sexual intercourse and those who have not. Results revealed that a greater percentage of the participants who have had sexual intercourse (32.4%) reported that their parents were no longer together compared to those that have not had sexual intercourse (12.5%).

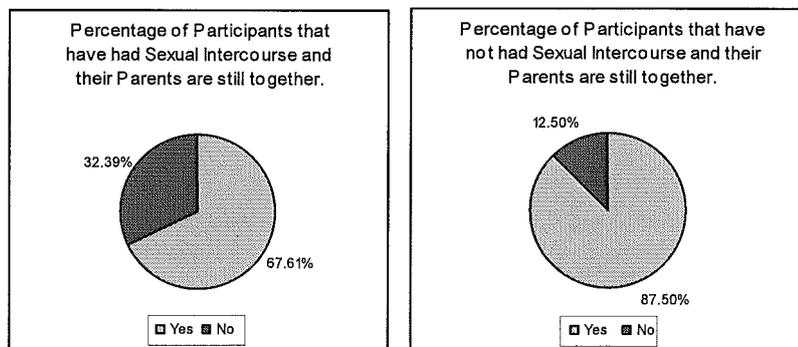


Figure 6/7: Status of Parents Relationship

Figure 8 presents the types of contraception most commonly used by the sexually active group. The pie graph reveals that the contraceptive pill (59.3%) tends to be the most common form of contraception used.

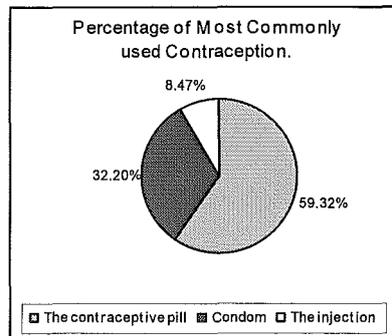


Figure 8: Most Commonly Used Contraception

The final pie graph (Figure 9) displays the percentage of times the sexually active participants had not used contraception during sexual intercourse whilst under the influence of alcohol. In total 39% of the sexually active group reported that they have had on at least one occasion sexual intercourse without using contraception while consuming alcohol. To the extent that 7% reported that they had not used contraception more than 10 times whilst under the influence of alcohol.



Figure 9: Contraception Use Whilst Under the Influence of Alcohol

3.3.2 Age of first sexual experience

Respondents were asked to state at what age they first had sexual intercourse. The age of first sexual experience for the sexually active group is presented in Table 1. The participants' ages ranged from 13-17 years, in a sample of female participants aged from 16-18 years. More than half of all the respondents in this group had experienced sexual intercourse before the age of 16.

Table 1: Age of participants when they first had sexual intercourse.

Current age	n	Time of first sexual intercourse (n=71)				
		17	16	15	14	13
		(Percentage within each age group)				
18 years	20	15	45	25	10	5
17 years	36	5.5	44	42	5.5	3
16 years	15	-	33	53	13	-

3.3.3 Number of sexual partners

Just over half of the respondents (53%) that have had sexual intercourse reported that they were currently in a sexual relationship. Of these, 43.2% had been in their current relationship for more than 12 months. Table 2 shows that the number of sexual partners increases with years since first sexual intercourse. Of those that had sexual intercourse for the first time in the present studies past year; 100% had only had one sexual partner. Whereas, those who first had sexual intercourse between 1 year but less than 2 years from the present study date; 28% had only one sexual partner. While those who first had sexual intercourse more than 2 years prior to the study date; 22% had only one sexual partner.

Table 2. Total number of sexual partners within time period of first sexual intercourse (n=71)

Years since first sex	n	Total sexual partners						
		1	2	3	4	5	6-10	11-12
		(Percentage within each period)						
Less than 1 year	7	100						
1-2 years	28	29	32	11	18	4	7	
Greater than 2 years	36	22	22	8	19	11	14	3

3.4 Means for Personality Measures, CSE, SOI and Demographic Variables.

Table 3 presents a comparison of the mean scores and standard deviation for those subjects who have had sexual intercourse (n=71) and those that have not (n=59). The results show differences between the groups means by age, revealing those who have had sexual intercourse tended to be older than those that have not. Further, the mean scores for the alcohol questions indicated that those that have had sexual intercourse tended to have started drinking at a younger age, consumed alcohol more often and in greater amounts. Additionally, these individuals also experienced more of the side effects of drinking alcohol, such as hangovers and loss of memory. The sexually active participants mean scores were also higher for driving whilst under the influence, not using contraception and they were more likely to indicate that they had been taken advantage of sexually when consuming alcohol. The mean scores for the personality traits indicated by the NEO-FFI, showed that those that have had sexual intercourse scored higher on the extroversion trait, whereas participants that had not had sexual intercourse were higher on the conscientiousness trait. There were only slight differences between the two groups on the other personality scores, but not at a significant level.

Table 3

Mean responses for those that have had sexual intercourse and those that have not for the demographic measures, measures of personality, the contraceptive self-efficacy and the sociosexual orientation measure.

	<u>Have Had Sexual Intercourse (N=71)</u>		<u>Have Not Had Sexual Intercourse (N=59)</u>	
	<u>Mean</u>	<u>Standard deviation</u>	<u>Means</u>	<u>Standard deviation</u>
Demographic measures				
Current age	17.1	0.7	16.7	0.5
Socioeconomic status ¹	2.8	1.5	2.7	1.4
Age of first sexual experience	15.4	0.9		
Number of sexual partners	1.6	2.2		
Length of time with your current sexual partner ²	3.4	1.6		
Age when parents separated	9.3	4.3	8.8	6.1
How often you drink alcohol (past 6mths) ³	4.3	0.7	3.6	1.2
How much you drink on any one occasion ⁴	4.1	1.2	3.2	1.3
Age started drinking	14.0	0.8	14.3	1.1
How often do you experience: ⁵				
a hangover	4.3	1.4	2.6	1.7
loss of memory	3.0	1.7	1.9	1.0
been taken advantage of sexually	1.6	1.0	1.3	0.7
used no contraception	1.9	1.5	1.0	0.0
driven	1.5	1.0	1.1	0.4
NEO Personality Measure ⁶				
Extroversion	50.38	8.35	45.97	8.80
Conscientiousness	31.45	8.63	33.32	7.85
Agreeableness	29.34	6.00	28.93	6.32
Neuroticism	24.66	8.71	25.73	7.03
Openness	30.03	6.28	29.17	6.83
Sexual Measures				
Contraceptive self-efficacy ⁷	74.68	10.13		
Sociosexual orientation inventory ⁸	45.17	16.53		

¹ Scores on this scale ranged from 1 - 7 with lower scores indicating higher levels of Socioeconomic status

² Scores on this scale ranged from 1 - 5 indicating the length of their current sexual relationship with lower scores indicating shorter sexual relationships

³ Scores on this scale ranged from 1 - 6 with higher scores indicating higher frequency of drinking alcohol

⁴ Scores on this scale range from 1 - 7 with higher scores indicating a greater number of alcohol drinks drunk on any one occasion

⁵ Scores on this scale range from 1 - 6 with higher scores indicating higher experience in each item

⁶ Scores on this scale ranged from 9 - 68 with higher scores indicating greater levels of each personality trait.

⁷ Scores on this scale ranged from 52 - 90 with higher scores indicating greater levels of self-efficacy concerning the participant's sexual activities and use of contraceptive technologies

⁸ Scores on this scale ranged from 16 - 95 with higher scores indicating greater level of unrestricted sociosexual orientation concerning the participant's view of sexual relationships and commitment.

3.5 Analysis of Variance

To assess an individual's level of responsibility a statistical comparison was established to assess whether those that had sexual intercourse were more likely to consume alcohol and conduct risk-taking behaviour whilst under the influence of alcohol. A one-way analysis of variance was conducted to compare the alcohol consumption variables and whether or not participants have had sexual intercourse. One hundred and twenty nine participants were included on this analysis as one participant reported that she had never had alcohol and therefore did not fill out the rest of the alcohol measure.

Question one asked how often the participants consumed alcohol (dependent measure), this was assessed on a 6-point Likert scale. The categorical factor was whether an individual has had sexual intercourse which was rated as 1=yes and 2=no. The results of the ANOVA showed that there was a significant difference between the means of those that have had sexual intercourse and the mean of those that have not. Therefore, how often a participant drank alcohol was significantly related to whether they have had sexual intercourse, $F(1, 128) = 19.89, p < .01$. The means for the two groups are presented in Figure 10, with high scores indicating greater frequency of alcohol consumption.

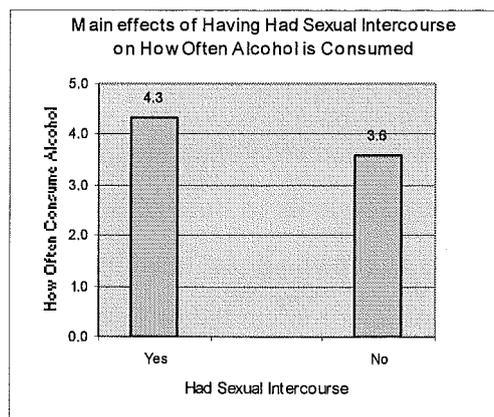


Figure 10: How Often Alcohol is Consumed and Sexual Intercourse

Question 2 asked participants to estimate how much they drink on any one occasion this was measured on a 7-point Likert scale (the dependent measure). The categorical measure was again 1=yes for had sexual intercourse and 2=no for abstainers. The results of the ANOVA showed a significant difference between the means of the two groups as shown in Figure 11. Therefore, how much alcohol a subject consumed was significantly related to whether or not the participants have had sexual intercourse, $F(1, 128)= 20.66, p < .01$.

Higher scores indicated a greater amount of alcohol consumed on any one occasion.

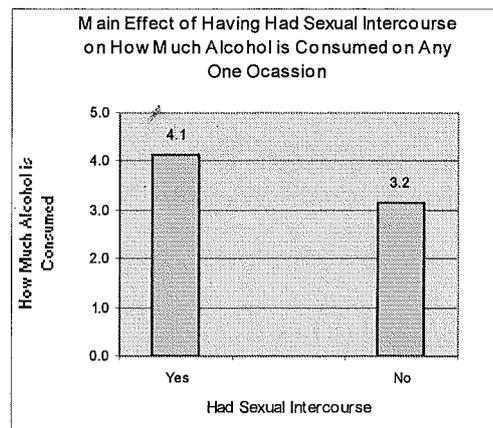


Figure 11: How much Alcohol is consumed on any one occasion and Sexual Intercourse

Question 3 asked participants to estimate how many time they had experienced a hangover and loss of memory as a result of alcohol consumption. They were then asked how many times they had been taken advantage of sexually, had unprotected sexual intercourse and had driven whilst under the influence alcohol. Higher scores indicating a greater number of times the subject had encountered that alcohol related incident.

The ANOVA results confirmed a significant difference between the mean scores for the two groups for how often you have had a hangover as shown in Figure 12.

Therefore, whether an individual has had sexual intercourse was significantly related with how often a subject had experienced a hangover, $F(1,128)= 37.42, p < .01$.

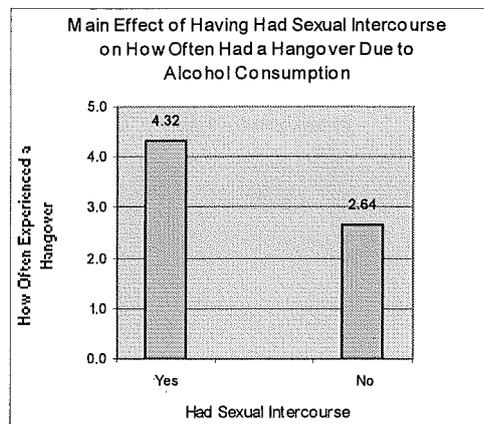


Figure 12: Hangovers and Sexual Intercourse

The mean scores for how often an individual had experienced loss of memory due to alcohol consumption are presented in Figure 13. An ANOVA confirmed that there was a significant difference between the two means of the groups. Therefore, whether an individual had sexual intercourse significantly predicted how often a participant had experienced loss of memory due to alcohol use, $F(1,128)= 16.23, p < .01$.

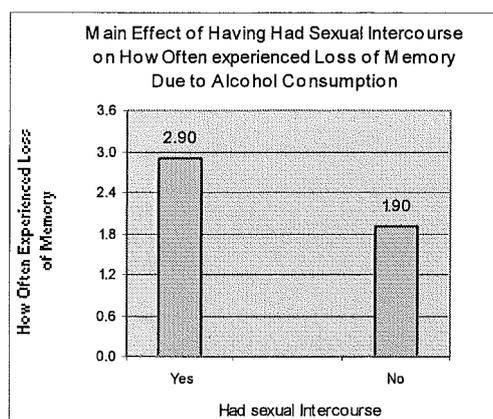


Figure 13: Loss of Memory due to Alcohol and Sexual Intercourse

The results from the ANOVA revealed that there was a significant difference between the means of the two groups and how often a subject had been taken advantage of sexually, as shown in Figure 14. Therefore, participants that had sexual intercourse were significantly more likely to have felt that they have been taken advantage of sexually when under the influence of alcohol, $F(1,128)= 4.33, p< .05$.

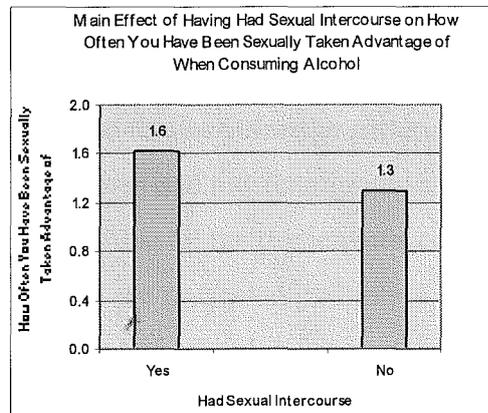


Figure 14: Sexually Been Taken Advantage of When Drinking and Sexual Intercourse

The mean scores of the two groups for how many times they have driven whilst under the influence of alcohol are presented in Figure 15. The ANOVA confirmed that there was a significant difference between these two mean scores, $F(1,128)= 8.25, p<.01$. Therefore, those that had sexual intercourse were significantly more likely to drive whilst under the influence of alcohol.

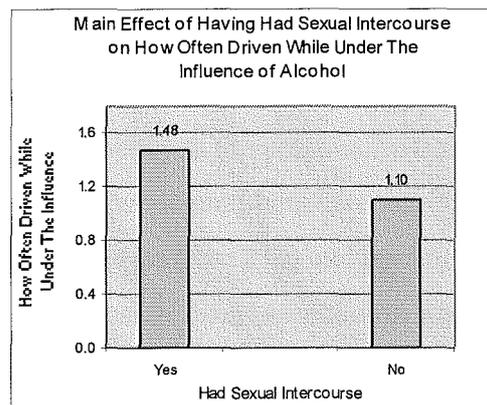


Figure 15: Driving whilst Under the Influence and Sexual intercourse

Overall, the results showed that those who were sexually active were significantly more likely to drink alcohol and to become involved in risk-taking behaviours whilst under the influence of alcohol compared with those that had abstained from sexual intercourse.

3.6 Correlations

Pearson's correlations were used to determine the patterns of relationships between all the participants' personality scores and the demographic variables. Correlations have been provided for the questions that all the participants completed. Only crosswise comparisons were analysed and are presented in Table 4. A significant relationship was reported between those that had sexual intercourse and whose parents were still together ($r = -.252$). Furthermore, whether they have had sexual intercourse also correlated with alcohol consumption ($r = -.312$) and the extroversion trait ($r = -.235$). Extroversion was also associated with alcohol consumption ($r = .288$).

Conscientiousness correlated with religion ($r = .182$) and alcohol use ($r = -.211$). In addition, how often and how much alcohol participants consume was associated with hangovers, loss of memory, whether you have been sexually taken advantage of, used no contraception or driven while under the influence.

To establish if there was a relationship between those that had sexual intercourse a series of correlations were performed between the personality scores, CSE and the SOI scores. The results of these correlations are presented in Table 5. Several significant correlations were found between the personality traits and the sexual measures. A significant relationship was found between neuroticism and CSE ($r = -.361$), in addition conscientiousness ($r = .239$) and openness ($r = .297$) significantly correlated with CSE. A significant association was shown between SOI, the number partners the sexual active group had ($r = .625$) and how often they consumed alcohol ($r = .310$). Furthermore, SOI significantly related with the age when they first had sexual intercourse ($r = -.280$) and whether they had unprotected Intercourse whilst under the influence of alcohol ($r = .267$).

Extroversion was found to be significantly associated with how many times an individual had been sexually taken advantage of while under the influence of alcohol

($r = -.318$). Conscientiousness was significantly correlated with how many times the participants had sexual intercourse without contraception when consuming alcohol ($r = -.377$) and whether they felt they had been taken advantage of sexually whilst under the influence ($r = -.30$). In the sexually active group neuroticism significantly related with experiencing hangovers ($r = .350$), whether they had been taken advantage of sexually ($r = .481$) and had unprotected sexual intercourse ($r = .309$) whilst under the influence of alcohol. Furthermore, neuroticism was found to be associated with loss of memory ($r = .274$) as well as driving whilst under the influence of alcohol ($r = .243$).

CSE was significantly correlated with alcohol misuse, frequency of sexual intercourse without having used contraception ($r = -.313$), frequency of having driven whilst under the influence ($r = -.343$) and or the experience of memory loss ($r = -.381$). CSE was also associated with frequency of hangovers ($r = -.270$) and whether they had been taken advantage of sexually whilst consuming alcohol ($r = -.247$).

The age at which sexually active participants first had sexual intercourse was significantly related to the number of sexual partners ($r = -.461$), whether the subjects' parents are still together ($r = -.253$), and age when first started consuming alcohol ($r = .268$). Furthermore, the number of sexual partners was associated with whether the sexually active participants parents were still together ($r = .268$).

To gain a greater understanding of the differences between the two groups' correlations were established for participants who abstained from sexual intercourse. Table 6 presents a correlation matrix for those that have not had sexual intercourse ever, with the personality measures and demographic variables. Only the variables specific to these participants were included in the analysis. Extroversion significantly correlated with alcohol consumption ($r = -.425$) and with how many times the participants had experienced a hangover ($r = .273$), experienced loss of memory ($r = .253$) and driven whilst under the influence of alcohol ($r = .288$). Conscientiousness was associated with whether their parents were still together ($r = -.263$).

Conscientiousness was also significantly correlated with the alcohol measures, such as how often they consumed alcohol ($r = -.233$) and the frequency at which they have experienced a hangover ($r = -.394$). Furthermore, conscientiousness ($r = .371$) and extroversion ($r = .342$) both significantly correlated with religion.

Table 4

Zero-order correlations between demographic measures and measures of personality for all the participants.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	
Demographic measures																			
1. Current age	1.00																		
2. Religion	.046	1.00																	
3. SES	-.020	.139	1.00																
4. Ethnicity	-.0104	.040	.022	1.00															
5. Had sexual intercourse	-.0281**	.079	-.008	.215*	1.00														
6. Parents still together	.062	-.058	-.040	-.151	-.252**	1.00													
Alcohol Related Questions																			
7. How often do you drink alcohol	.095	.022	-.006	-.093	-.316**	.134	1.00												
8. How much do you drink on any occasion	.188*	.112	.103	-.166	-.312**	.074	.490**	1.00											
9. Age first started drinking	-.031	.106	-.139	.014	.164	-.154	-.205*	-.069	1.00										
Have you experienced the following when drinking:																			
10. a hangover	.222*	.026	.007	-.231**	-.448**	.115	.575**	.552**	-.155	1.00									
11. loss of memory	.150	.076	-.038	-.083	-.305**	-.009	.488**	.517**	-.145	.585**	1.00								
12. sexually been taken advantage of	.263**	.098	-.081	-.032	-.159	-.004	.355**	.323**	-.103	.412**	.482**	1.00							
13. not used contraception	.081	.005	-.143	-.123	-.381**	-.054	.239**	.205*	-.028	.289**	.404**	.342**	1.00						
14. driven	.179*	-.006	.085	-.064	-.232**	.224*	.236**	.111	-.193*	.340**	.275**	.137	.152	1.00					
NEO Personality Scales																			
15. Extroversion	-.028	.182*	0.098	-.093	-.235**	.040	.288**	.312**	.144	.184*	.105	-.103	-.010	.127	1.00				
16. Conscientiousness	-.077	.248**	0.036	.036	.093	-.123	-.211*	-.094	.022	-.237**	-.216	-.269**	-.307**	.014	.179*	1.00			
17. Agreeableness	-.131	.088	0.035	-.081	-.023	-.145	.032	.016	.154	-.173	-.106	-.199*	-.206*	-.113	.301**	.392**	1.00		
18. Neuroticism	-.005	-.001	-.035	-.006	.045	-.003	.093	-.039	-.099	.235**	.193	.387**	.215*	.162	-.247**	-.358**	.457**	1.00	
19. Openness	.020	-.087	0.010	.012	-.049	.154	.097	.018	-.108	-.043	-.080	.019	-.049	-.049	-.026	-.261**	-.075	-.017	1.00

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

Table 5
Zero-order correlation between the personality measure and the sexual measures for those that had sexual intercourse

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
Personality measures																					
1. Extroversion	1.00																				
2. Conscientiousness	.162	1.00																			
3. Agreeableness	.259*	.441**	1.00																		
4. Neuroticism	-.244*	-.429**	-.416*	1.00																	
5. Openness	-.089	-.297*	-.074	-.078	1.00																
Sexual measures																					
6. CSE	.126	.239*	.145	-.361**	.297*	1.00															
7. SOI	.124	-.181	-.228	.061	.115	-.037	1.00														
Demographic variables																					
8. Age	-.136	-.036	-.070	-.101	.006	.005	-.217	1.00													
9. Religion	-.023	.155	.093	.105	-.137	-.071	-.013	.143	1.00												
10. Age when first had sexual intercourse	.047	-.028	.281	-.076	.136	.110	-.280*	.140	.082	1.00											
11. Currently in a sexual relationship	.116	-.245*	.069	-.051	-.031	-.336**	.181	.146	-.003	.054	1.00										
12. Number of sexual partners	.135	-.069	-.264	.054	.134	.090	.625**	.103	.065	-.461*	-.071	1.00									
13. Are your parents still together	.055	-.024	-.191	.061	.127	.094	.193	.004	.011	-.253*	.004	.286*	1.00								
Alcohol Related Questions																					
14. How often do you drink alcohol	.007	-.187	-.097	.303*	-.037	-.231	.310**	-.048	-.097	-.213	.099	.211	.117	1.00							
15. How much do you drink on any occasion	.125	-.057	0.000	.038	-.174	-.113	-.053	.127	.077	-.096	.113	.057	-.085	.236*	1.00						
16 Age first started drinking	.170	.009	0.123	-.040	-.008	.067	.153	.002	.077	.268*	.255*	.167	-.092	-.063	.074	1.00					
Have you experienced the following when drinking:																					
17. a hangover	-.081	-.167	-.172	.350**	-.210	-.279*	.143	.034	.193	-.328*	.100	.215	.005	.399**	.420**	-.153	1.00				
18. loss of memory	-.066	-.226	-.177	.274*	-.226	-.381**	.122	.043	.183	-.081	.262*	-.044	-.146	.400**	.427**	-.073	.500**	1.00			
19. sexually been taken advantage of	-.318**	-.300*	-.313**	.481**	-.034	-.247*	.101	.157	.277*	-.173	.193	.163	-.050	.335**	.254*	-.057	.355**	.491**	1.00		
20. not used contraception	-.153	-.377**	-.316**	.309**	-.102	-.313**	.267*	-.036	.057	-.156	.141	.114	-.199	.211	.127	.057	.208	.372**	.369**	1.00	
21. driven	.020	.020	-.178	.243*	-.117	-.343**	.193	.098	.042	-.286*	.021	.163	.247*	.178	.034	-.188	.307**	.210	.102	.074	1.00

** $p < 0.01$, * $p < 0.05$

Table 6
Zero-order correlation between the personality measures and the demographic question for those that have abstained from sexual intercourse.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Personality Measures																	
1. Extroversion	1.00																
2. Conscientiousness	.237 [^]	1.000															
3. Agreeableness	.355 ^{**}	0.326 [*]	1.00														
4. Neuroticism	-.251 [^]	-0.249	-.530 ^{**}	1.00													
5. Openness	.024	-0.203	-.059	.061	1.00												
Demographic Measures																	
6. Current age	-.067	-.043	-.277 [*]	.213	-.020	1.00											
7. Religion	.342 ^{**}	.371 ^{**}	.091	-.111	-.045	-.009	1.00										
8. SES	.173	.016	.042	.023	.048	-.052	.147	1.00									
9. Ethnicity	.077	.082	-.176	.017	.001	.042	-.003	-.001	1.00								
10. Parents still together	-.134	-.263 [^]	-.090	-.111	.196	-.059	-.126	-.169	-.218	1.00							
Alcohol Related Questions																	
11. How often do you drink alcohol	.412 ^{**}	-.233 [^]	.181	-.129	.221 [^]	-.076	.003	.044	-.145	.045	1.00						
12. How much do you drink on any occasion	.425 ^{**}	-.127	.071	-.156	.245 [^]	-.030	.086	.110	-.239 [^]	.173	.726 ^{**}	1.00					
13. Age first started drinking	.156	-.114	.176	-.141	.048	-.217	-.175 [^]	.039	-.263 [*]	.041	.458 ^{**}	.379 ^{**}	1.00				
Have you experienced the following when drinking:																	
14. a hangover	.273 [*]	-.294 [*]	-.214 [^]	.192	.080	.166	-.089	.036	-.163	.017	.595 ^{**}	.581 ^{**}	.165	1.00			
15. loss of memory	.253 [^]	-.161	.012	.057	.150	.080	-.051	.083	-.099	.078	.583 ^{**}	.606 ^{**}	.154	.664 ^{**}	1.00		
16. sexually been taken advantage of	.129	-.188	-.022	.216	.092	.339 [*]	-.111	-.069	-.122	-.029	.339 [*]	.368 ^{**}	.055	.463 ^{**}	.395 ^{**}	1.00	
17. driven	.288 [*]	.096	.022	-.058	.085	.216 [^]	-.065	.267 [*]	.152	-.121	.269 [*]	.105	.011	.314 [*]	.307 [*]	.142	1.00

** $p < 0.01$, * $p < 0.05$, [^] $p < 0.1$

3.7 t-test for Independent Means

3.7.1 Personality and Sexual Intercourse

An important focus of the present study was to determine whether there were any differences between those that had sexual intercourse and those that have abstained from sexual intercourse on any of the personality measure. To determine if there was a significant relationship between the means of the two groups' personality traits, a series of t-tests for independent means were performed. The results of the t-test are shown in Table 7. A significant difference between the two groups was found for extroversion. There were no significant differences between the two groups for any of the other personality traits. Consequently, those that had sexual intercourse tended to have significantly higher ratings on the extroversion trait.

Table 7

t-test for independent means to establish significant differences between the personality measures and those that have had sexual intercourse and those that have abstained.

	Sexual Yes	Intercourse No	t-value	df
Extroversion	50.4	45.9	*2.93	128
Conscientiousness	31.5	33.3	-1.28	128
Agreeableness	29.3	28.9	0.38	128
Neuroticism	24.7	25.7	-0.76	128
Openness	30.0	29.2	0.75	128

* $p < .01$

3.7.2 Alcohol use, Personality, CSE and SOI

The final question in the alcohol consumption section asked participants to report how many times they had sexual intercourse without using contraception whilst under the influence of alcohol. Because half of the participants have not had sexual intercourse, only those that had sexual intercourse were included in this analysis. Therefore, the results were coded into two groups those that use contraception during sexual intercourse and those have unprotected intercourse whilst under the influence of alcohol. A *t*-test for independent means was performed to establish if there was a significant difference between the mean scores of the personality traits, the CSE and the SOI of the two groups. The results of the *t*-test are presented in Table 10.

The results of figure 16 show a significant difference between the mean scores of conscientiousness and the two groups. Therefore, those that scored higher on the conscientiousness trait were significantly less likely to have unprotected sexual intercourse whilst under the influence of alcohol, $t(69)=2.31, p<0.05$.



Figure 16: Conscientiousness and having unprotected sexual intercourse

Figure 17 presents the differences of mean scores on the agreeableness trait between those that have had unprotected intercourse and those that use contraception whilst consuming alcohol. The t -test showed a significant difference between the mean scores. Therefore, those that scored lower on the agreeableness trait were significantly more likely to have had unprotected sexual intercourse when under the influence of alcohol, $t(69)= 2.05, p<0.05$.

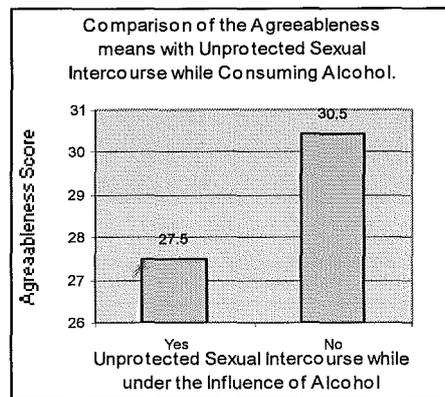


Figure 17: Agreeableness and having unprotected sexual intercourse

The mean scores of the neuroticism trait for the two groups are presented in Figure 18. A t -test for independent means found a significant difference between the two means. Therefore, those that have higher levels of neuroticism were significantly more likely to have unprotected sexual intercourse whilst under the influence of alcohol, $t(69)=2.10, p<0.05$.

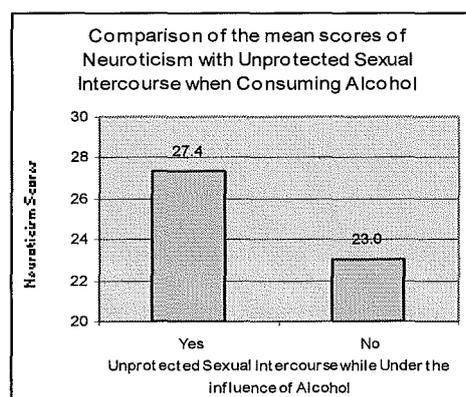


Figure 18: Neuroticism and having unprotected sexual intercourse

The *t*-test confirmed that there is a significant difference between the mean scores of the two groups on the contraceptive self-efficacy measure (Figure 19). Those with lower levels of CSE were more likely to have unprotected sexual intercourse when they consumed alcohol compared to those with high levels of CSE, $t(69)=3.04, p<.01$.

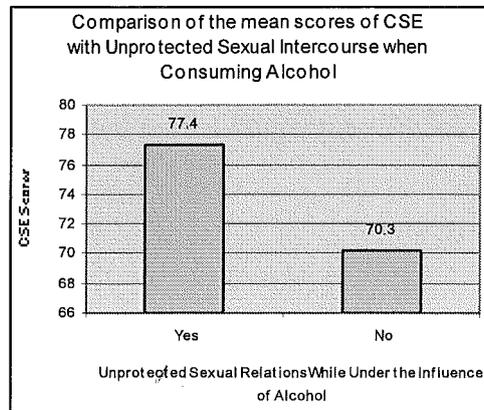


Figure 19: CSE and unprotected sexual intercourse

Figure 20 presents the means of the sociosexual orientation inventory for the two groups. The *t*-test confirmed that there was a significant difference between the mean scores on the SOI. The results showed that those with higher levels of sociosexual orientation were significantly more likely to have sexual intercourse without contraception whilst under the influence of alcohol, $t(69)=-1.92, p<.10$.

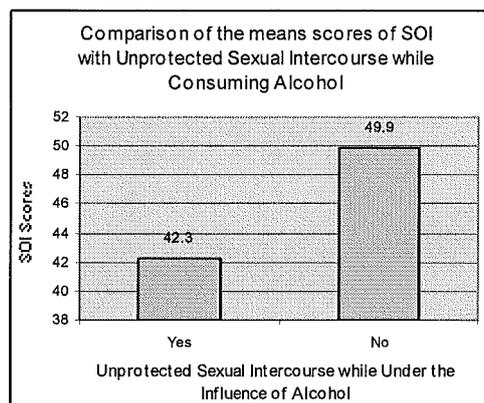


Figure 20: SOI and unprotected sexual intercourse

Overall, the CSE and the SOI predicted whether participants effectively used contraception during sexual intercourse whilst under the influence of alcohol. Furthermore, three (conscientiousness, agreeableness, and neuroticism) out of five of the personality traits predicted subjects who consistently and effectively used contraception when under the influence of alcohol. There were no significant differences between the means of extroversion and the openness traits, and whether or not an individual had unprotected sexual intercourse when consuming alcohol as shown in Table 8.

Table 8

Non-significant *t*-test for independent means for extroversion and openness when comparing those that have and have not used contraception whilst under the influence of alcohol.

Personality traits	Yes	No	<i>t</i> -value	df	p
Extroversion	50.7	49.8	0.44	69	0.658
Openness	30.8	28.8	1.32	69	0.191

4.0 Discussion

The primary purpose of this research was to examine individual factors that predict risk-taking behaviour associated with sexual intercourse. These factors included personality traits, attitudes, self-efficacy, alcohol misuse and demographic variables. This section highlights and integrates the findings that address the primary research hypotheses. The results provide preliminary evidence that alcohol use is strongly associated with sexual behaviour and personality. The overall findings of this study are presented in Figure 21. The pathway diagram highlights the factors that either inhibit or are the basis for risky sexual relations and risk-taking behaviours.

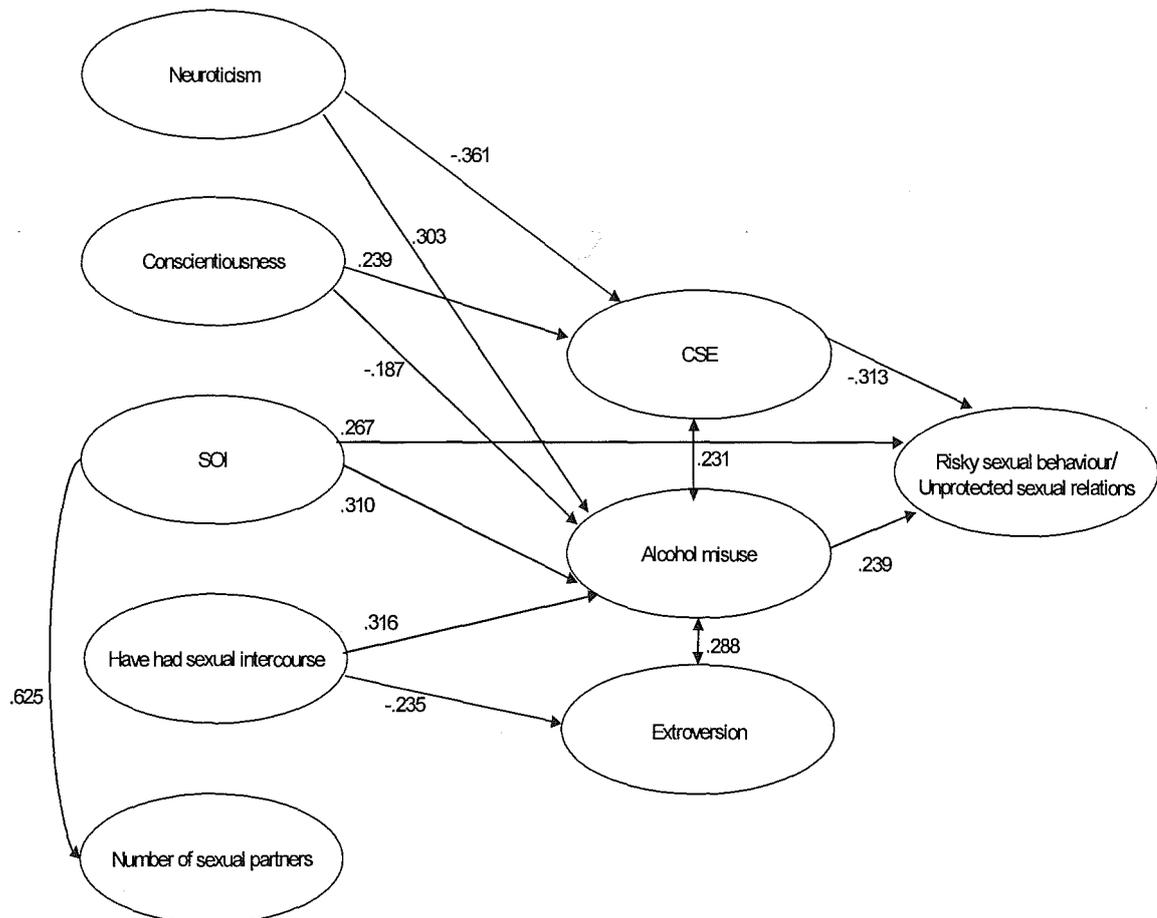


Figure 21: Path diagram of the variables that predict contraception and alcohol use in adolescent females.

4.1 Extroversion and Contraceptive Self-efficacy

Hypothesis 1: Extraversion will have a negative association with Contraceptive Self-Efficacy.

The results of this study did not provide support for this hypothesis. Eysenck's (1976) theory proposed that extroverts are more sexually promiscuous, it was predicted that extroverts would have more unplanned sexual encounters and consequently would be less likely to use contraception. The results of this study, however, indicated that there was no significant relationship between extroversion and CSE. Therefore, extroverts are not at high risk of having unprotected sexual intercourse. This finding, whilst not consistent with what was hypothesised, may be explained.

The mean CSE score (74.9) showed that this population of adolescents had high contraceptive self-efficacy. Past studies examining females' level of CSE have reported the average scores on the scale were considerably lower than the scores in this study (Bosche & Rubinson, 1998; Heinrich, 1993; Levinson et al., 1998). Therefore, the limited sample, high SES (economic advantages), and educational advantages of these participants may provide these adolescent with better sexual education programs and therefore provides them with better contraceptive knowledge than the average adolescent. It may be the case that with this knowledge and their level of assertiveness they may feel more comfortable about obtaining contraceptives and talking to professionals.

Gullone & Moore (2000) examined the five factor models of personality and reported that extroversion was less predictive than the other traits. Although extroversion did play some role in predicting adolescent behaviours, other important factors were not accounted for by the trait (Costa & McCrae, 1992; Eysenck, 1971). Therefore, perhaps the predictive nature of the extroversion trait is not as significant as originally suggested.

This research did find that those with higher levels of extroversion were more likely to have had sexual intercourse. Therefore, extroverts were more likely to have had intercourse but are not at high risk of having unprotected sexual relations. Since extroverts enjoy social situations and meeting new people, they have higher chances

of meeting potential mates, which can lead to frequent sexual relations. It might be the case that extroverts find it easier to discuss contraception with their partner and doctors and therefore be informed about various contraceptive methods available and the subsequent consequences of sexual activity.

The results, however, showed a significant relationship between neuroticism and contraceptive self-efficacy. These females lack the conviction that they can act responsibly for their sexual activity and are less likely to persist in the behaviours needed to avoid unprotected sexual encounters (Levinson, 1986). Therefore, those that have high levels of neuroticism are less likely to use contraception and have low self-efficacy in sexual situations. Costa & McCrae (1992) argued that individuals high in neuroticism have difficulty controlling their impulses and desires and tend to have low self-esteem. Highly impulsive individuals cannot resist doing what they do not want themselves to do (Costa & McCrae, 1992). Presumably they realise that they should use contraception but succumb to the temptation of risky sexual encounters. They also have unrealistic ideas about themselves and others; it might be the case that when they are put in unexpected sexual situations they feel unable to voice their opinions to their partner. Their low self-esteem and desire to be liked by their partner may cause them to not use contraception in an attempt to satisfy their partners.

Eysenck (1971) found sexual guilt and nervousness were related to neuroticism. It could be argued that the feelings of guilt they experience about sexual intercourse makes it easier for them to deny their reproductive and contraceptive knowledge than to take advantage of it (Levinson, 1986). Special interest and further research must be paid to these adolescents, as they are at high risk of having an unplanned pregnancy and contracting a sexually transmitted infection. These adolescents require an intervention based program to assist them with their contraceptive knowledge and use, as well as assertiveness skills training.

4.2 Extroversion, Conscientiousness and the Sociosexual Orientation

Inventory.

Hypothesis 2: Extroversion will be positively associated with Sociosexual Orientation.

The findings of this research did not support this hypothesis, no significant relationship was found between extroversion and the sociosexual orientation inventory. Therefore, extroverted individuals do not have strong permissive attitudes towards sexual intercourse.

This finding somewhat contradicts past research, Simpson & Gangestad (1991a, 1991b) reported that those with high levels of extroversion tend to possess permissive attitudes toward uncommitted sexual relations. Although the findings in this study do not support this hypothesis or past research, they can be explained. It has been argued that young females are generally socialised toward constraint, as they get older and more independent they become less restricted (Wright & Reise, 1997). Because the females in this study were aged between 16-18 years and were still at secondary school, their unrestricted attitudes could be lower than expected.

Oliver & Hyde (1993; cited in Sprecher et al., 1997) applied social learning theory to gender differences in sexual behaviour. According to this perspective, gender differences are shaped by the patterns of reinforcement and punishment that men and women receive for their sexual behaviour within a particular society. For example, men generally receive more reinforcement that is positive than females for seeking and engaging in sexual activity, whereas women generally receive more reinforcement for confining their sexual activity to committed, love-based relationships. Therefore, a young female's level of permissiveness may be undermined by societal rules and values until they are mature and experienced enough to make their own decisions.

Most studies in the area of sociosexual orientation have examined university students, who are older and more experienced (Sprecher et al., 1997; Wright & Reise, 1997). The participants in this study were limited to young, secondary school adolescent females. Their attitudes are likely to change with age and accumulated experience

with sexual relationships, therefore, their level of SOI is not stable. Future studies may find results that are more significant for those over the age of 18 as they have more freedom to experience new sexual relationships.

Although sociosexual orientation was not related to extroversion and conscientiousness, it was found to be related to other variables. A relationship was found between SOI and numbers of sexual partners. Those with unrestricted sociosexual orientation (permissive attitudes towards intercourse) have greater numbers of sexual partners, this supports past research (Simpson & Gangestad, 1991). Further, SOI was related to age of first sexual intercourse. The younger they were when they first had sexual intercourse the more permissive their attitudes were towards sexual intercourse. This finding was expected as the results of this study showed the younger the age of first sexual intercourse the greater number of sexual partners they will have, then presumably their attitude must influence their behaviour.

It was further found that a high level of SOI was associated with excessive amounts of alcohol consumption. Perhaps permissive attitudes about sexual intercourse are linked with permissive attitudes about alcohol use. It has been found that SOI is related to the increased probability of having unprotected sexual intercourse when under the influence of alcohol. Because these individuals do not require closeness and commitment to have sexual intercourse, they may in social situations (e.g. parties) due to their permissive attitudes get into sexual situations and continue despite not having contraception. Alcohol has been found to reduce individuals' level of anxiety, it may be the case when under the influence of alcohol the anxiety about pregnancy and contraception use is reduced (Fergusson & Lynskey, 1996).

Hypothesis 4: Conscientiousness will be negatively associated with the sociosexual orientation inventory.

This hypothesis was also not supported; instead the results showed that there was no significant relationship between conscientiousness and sociosexual orientation.

Although it is reasonable to expect conscientiousness, which had been related to “self-

discipline”, “deliberation” and “competence”, would appear as an important predictor of restricted sexual behaviour (Goldberg, 1993).

Wright & Reise (1997) found that conscientiousness was not a significant predictor of sociosexuality, but argued against this finding as a limitation of their study. They argued that sociosexuality is related to sensation seeking (Seal & Agostinelli, 1994) and conscientiousness has more to do with orderliness and efficiency rather than an indicator of sensation seeking. This may explain why conscientiousness did not arise as a predictor of sociosexuality.

Overall, there was no relationship found between sociosexual orientation and personality traits. However, research in this area is limited; few research areas have actually investigated the relationship of sociosexuality to the five-factor model of personality. It should be noted that this aspect of the study contradicts previous research by Wright & Reise (1997). They found that unrestricted individuals are more extraverted and low in agreeableness. The arguments used above maybe applied to the reasoning behind the lack of empirical support for all the traits, the results found no association between SOI, neuroticism, agreeableness and openness.

4.3 Extroversion, Sexual risk-taking and alcohol misuse

Hypothesis 3: Extroverts have higher levels of both sexual risk-taking and alcohol misuse.

Consistent with the hypothesis those who have higher levels of extroversion are significantly more likely to misuse alcohol. Extroverts are likely to consume alcohol more often, with greater amounts, and experience loss of memory and hangovers because of their drinking. Extroverts are also more likely to perceive that they have been taken advantage of sexually when under the influence. This lack of responsibility associated with alcohol use can be explained by the research. Gullone & Moore (2000) found that extroverts were more likely to engage in risk-taking behaviours and excitement seeking. Therefore, they may view alcohol use as acceptable and exciting (because they are underage), and consume it on a regular

basis within social situations. Social situations in adolescence are often associated with alcohol consumption and drug use, therefore, because extroverts like to socialise they place themselves at greater risk of alcohol abuse (Fergusson & Lynskey, 1996).

Within the two groups, those that have had sexual intercourse were much more likely to perceive that they have been sexually taken advantage of when consuming alcohol. Research has shown that alcohol increase males and females level of sexual arousal (Wilson & Lawson, 1978; cited in O'Farrell, Weyland, & Logan, 1983). It could be argued that when females consume alcohol they become sexually confident and males may contribute their confidence to sexual promiscuity, and in an attempt to have sexual intercourse, sexually take advantage of them.

Those that were not sexually active and had higher levels of extroversion were also likely to misuse alcohol. Therefore, the extroversion trait is predictive of alcohol use in this sample of adolescent females. Extroverts desire social stimulation and enjoy socialising and meeting new people, during adolescence this is often associated with alcohol use. Therefore, extroverts are more likely to enjoy alcohol and seek out social situations, which may lead to an increase chance of alcohol misuse.

Extroversion, however, did not predict sexual risk-taking; the results showed that adolescent women were not significantly more likely to have unprotected sexual intercourse when consuming alcohol. Overall, in this study the preferred method of contraception was oral contraceptives, which is consistent with other studies (Morrison, 1985). It maybe the case that extroverted individuals did not use condoms and did not feel they needed to be prepared in advance because they were taking the contraceptive pill. Therefore, these women considered themselves to be protected from pregnancy but not from sexually transmitted infections.

A relationship was found between neuroticism and sexual behaviour when under the influence of alcohol. Those with higher levels of neuroticism are more likely to have unprotected sexual relations when consuming alcohol. The lack of perceived control they already have may be enhanced while under the influence of alcohol. They may become less inhibited and their levels of anxiety about sexual behaviour may be reduced, which may place them at greater risk of unprotected sexual encounters.

Self-esteem appears to play an important role in sexual behaviour and is a key component of the neuroticism trait (Costa & McCrae, 1992). Women often regard successes and failures within their sexual relationships as a reflection of their general self-worth, if it is negative and a failure then it can decrease their level of self-esteem even more (Brown, 1999). Because neuroticism is also linked with contraceptive self-efficacy, it is thought lack of contraception use can influence self-esteem and decrease feelings of self-worth (Levinson, 1986). Therefore, they continue to have unsafe sexual intercourse because they want to please their partner and lack the skills for situations that require assertiveness. Research has also been shown that youth alcohol abuses are low in self-esteem and more impulsive (Millman & Khuri, 1981; cited in O'Farrell et al., 1983), which can be linked to facets of the neuroticism trait.

4.4 Conscientiousness and Contraceptive Self-efficacy

Hypothesis 5: Conscientiousness will have a positive association with Contraceptive Self-Efficacy.

The findings in this study support the hypothesis, that those who have high levels of conscientiousness will have higher levels of contraceptive self-efficacy.

Conscientious individuals are reliable contraceptive users in sexual situations and feel in control of any sexual encounters they come across. Research has shown that those who are low in conscientiousness are easy going but often lack self-control and admit to being ill prepared and inept for situations (Costa & McCrae, 1990). If individuals lack self-control and doubt their ability to use contraception when they are in sexual situations then they may lack the motivation and self-discipline to discontinue or use protection. Highly conscientiousness individuals on the other hand, have high levels of motivation and greater expectations for life, presumably, they would not want to jeopardise their dreams and goals by getting pregnant.

Gullone & Moore (2000) found that conscientious individuals engaged less in rebellious and reckless behaviour. Having sexual relations without the use of contraception is considered risky and reckless for adolescents, so it is not surprising that conscientious individuals have high self-efficacy within sexual situations,

because they are prepared with contraception in advance and have the assertiveness skills and motivation to discontinue a sexual encounter if they desire.

4.5 Conscientiousness, Sexual behaviour and Alcohol use

Hypothesis 6: Conscientious individuals are less likely to be involved in risk-taking behaviour associated with alcohol use.

A significant relationship was found between conscientiousness and alcohol use. Conscientious individuals were more responsible with alcohol (used contraception and did not drink and drive), within and between the two groups. They are less likely to consume alcohol, so would be less likely to experience the effects associated with excessive consumption (hangovers, loss of memory). They were also less likely to have unprotected sexual intercourse whilst under the influence of alcohol this is not surprising because conscientious individuals have high CSE and therefore are effective contraceptive users.

Alcohol misuse has been associated with poor school performance, low school and career expectations, and underachievement (Windle, Shope & Bukstein, 1996). These risk factors cannot be associated with the conscientious trait; conscientious individuals are considered “ambitious”, “goal orientated” and “hardworking” (Costa & McCrae, 1992). They will be determined to reach their goals and would not want to misuse alcohol because it may jeopardise their future chances.

4.6 Alcohol use and risk-taking behaviour

Hypothesis 7: Alcohol misuse will be associated with sexual behaviour in adolescent females.

The main factor associated with adolescent sexual behaviour in this study was alcohol use. It was found that those who have had sexual intercourse, scored higher on every facet of the alcohol measure, when compared to those that have abstained from sexual intercourse. Those that have had sexual intercourse frequently consume greater

amounts of alcohol, and they experience hangovers and loss of memory because they consume excessive amounts. They are more likely to have driven when over the limit and felt that they had been sexually taken advantage of when consuming alcohol.

It has been suggested that alcohol misuse during adolescence contributes to sexual exploration and risk-taking behaviours, as a result of the disinhibiting effects of alcohol, which may encourage sexual experimentation and lead to risk-taking behaviours (Fergusson & Lynskey, 1996). In this study, alcohol use was found to contribute to unprotected sexual intercourse and those that have had sexual intercourse were more likely to misuse alcohol compared to those that were not yet sexually active. Kasen et al., (1992) argued that alcohol and drugs lower perceived self-efficacy and reduce the use of contraception and safe sex practices.

A significant correlation was found between age of first sexual intercourse and age when first started consuming alcohol. Participants who had sexual intercourse at a young age were also likely to start consuming alcohol from a young age. Lynskey & Fergusson (1993) in their Christchurch study examined adolescent sexual behaviour and found that those who use alcohol are much more likely to have had sexual intercourse before the age of 16 years.

Research has reported why contraception use decreases when under the influence of alcohol. Brown, Goldman, Inn & Anderson (1980) found that individuals' belief factors are influenced by alcohol. It is thought that individuals engage in sexual relations more when they consume alcohol because they believe it increases social and physical pleasures, social assertiveness, and enhances sexual relations, reduces tension, and transforms experiences in a positive way. It has also been found that alcohol strengthens the sex drive and lowers control over it (O'Farrell et al., 1983). Alcohol use also offers a socially acceptable excuse for sexual relations and lack of contraception use (Tobias, 1973; cited in O'Farrell et al., 1983).

4.7 Other Findings

This study showed, in support of past research, that the younger a female is when she first has sexual intercourse the greater number of sexual partners she will have (Brander, 1991; Brewster, 1994; Lynskey & Fergusson, 1993). It was also found that over 50% of the participants that were sexually active were under the age of 16 when they first became sexually active. This highlights the importance of early sexual education programs for adolescent females.

The results also showed that age of first sexual relations were correlated with parental separation and divorce. Research has argued that with divorce and separation comes decreased social control, lower SES and can lead to poor psychosocial adjustment in adolescence (Wolfinger, 1998). Lower level of control and parental monitoring gives adolescents the freedom to socialise and experiment. It has been found that parental separation increases risky behaviours including alcohol misuse, smoking and sexual intercourse (DiClemente et al., 2001; Ramirez et al., 1998).

Of the participants whose parents were no longer together, 90% reported that they lived with their mother the majority of the time. Ellis et al., (2001) looked at whether father absence increases daughters' risk for early sexual activity. They found that father absent females had the highest rates of early sexual activity. It could be the case that the sexually active females in this study lacked an affluent father figure and effective parental monitoring, which gave them the freedom to pursue risky behaviours such as early sexual activity. Further, it has been argued that mothers provide important role models and after a separation or divorce, they begin forming new sexual relations that can influence their daughters' choice to have sexual relations (Ellis et al., 2001). Therefore, females that come from families of separation and divorce are more likely to be sexually active than females that come from two-parent household.

4.8 Summary of results

The main goal of this study was to discover factors that identify adolescent females who have unprotected sexual intercourse and those who are effective contraceptive users or abstainers. The results found that conscientious females are better contraceptive users, they feel in control of their sexual relations and are responsible with alcohol. Although many aspects of extroversion did not predict what was hypothesised, it still showed that extroverts were more likely to have had sexual intercourse during adolescence and were more likely to misuse alcohol. Intervention programs can be tailored to suit these individuals that combine sexual behaviour and alcohol use.

The most important finding in this study was the significant role that neuroticism played in sexual behaviour. Neuroticism was linked with lack of contraception use, low self-efficacy and alcohol misuse. Consequently, these individuals are at greatest risk of unplanned teen pregnancies and sexually transmitted infections. There are several characteristics that have been associated with neuroticism, those that are high in this trait are prone to anxiety, anger/hostility, depression, and tend to be highly self-conscious and impulsive (Costa & McCrae, 1992). Those individuals whose personalities were associated with these characteristics are at an increased risk of conducting risky sexual practices. These individuals require intervention programs that will increase their level of perceived efficacy and self-esteem. Adolescents who have high levels of the neuroticism trait are insecure in their self-efficacy and are less able to avoid involvement with alcohol, drugs and unprotected sexual intercourse compared to those who have a strong sense of perceived efficacy (conscientious individuals) (Bandura, 1997).

Overall, those that are sexually active were more likely to conduct risk-taking behaviours associated with alcohol use, and experience the side effects of excessive alcohol consumption. Therefore, these adolescents may require interventions that focus on alcohol use and how to control their behaviours whilst under the influence, by not consuming excessive amounts.

This research supports the use of CSE as a predictor of both sexual risk-taking and contraception use in adolescent females and as a diagnostic tool. Further research needs to establish the usefulness of the sociosexual orientation inventory for adolescent females under the age of 18 years. A summary of the significant relationships between the variables was presented in Figure 21.

4.9 Problem behaviour theory

Donovan, Jessor & Costa (1991) term problem behaviours as any action that has been socially defined as a great concern or is considered undesirable by the values and norms of a society. Examples are alcohol misuse, drug use and risky sexual behaviours. Problem behaviour theory encompasses three explanatory variables: the personality system (including an individual's feelings and perceptions about themselves), the perceived environment system (including parental and peer influences) and the behavioural system (conventional and unconventional behaviours) (Bingham & Crockett, 2000). Each system is made up of variables that either inhibit or instigate the involvement in problem behaviours such as risky sexual behaviour. The balance between instigation and controlled behaviours determine the degree of proneness for any problem behaviours within the three systems.

Within this study, the measures represent the three conceptual systems of problem behaviour theory: the personality system consists of personality characteristics, attitudes, self-efficacy and their predictability of problem behaviours. The perceived social environment system refers to separation and divorce of parents, ethnicity, religion and SES. The behaviour system referred to involvement in various problem behaviours, in this case risky sexual behaviour and risk-taking associated with alcohol use.

This theory argues that there is a link between all three systems and health behaviours. It supports the idea that there are protective factors involved in problem behaviours that prevent adolescents from conducting risky behaviours. Donovan, et

al., (1991) termed them conventional-unconventional behaviours. This study viewed conventional behaviours as those who have abstained from sexual intercourse and rarely consume alcohol.

Donovan et al., (1991) used this model and found consistent and systematic relationships between personality and behaviour, their study examined differences between values, beliefs and attitudes constituting the conventionality-unconventionality dimensions of personality, and those behaviours that can influence health. They argue that it is important that interventions view an adolescent's behaviour as a larger system, rather than an isolated, unrelated actions as it takes two people to have sexual intercourse. Educators need to look at adolescents' lifestyles as a whole to determine if they are at risk of being involved in problem behaviours.

The findings of this study are in line with the problem-behaviour theory, high levels of risk-taking involvement (no contraception, multiple partners and alcohol misuse) were associated with personality factors (personality traits, attitudes and self-efficacy) and social factors (parental separation, SES). The findings showed that one factor alone did not predict risky behaviours, but multiple factors when measured together found many variables combined together predict risky sexual behaviour and alcohol misuse.

4.10 Practical Implications

This research highlighted certain implications for education programs and interventions. Despite providing adolescents with contraceptive knowledge and increased access to contraceptives, they still continue to have unprotected sexual intercourse. The findings in this study indicate that simply providing adolescents with sexual and contraceptive knowledge without developing their sense of self-efficacy, needed to control sexual encounters, has little impact on changing sexual behaviour. It is widely assumed that if adolescents are adequately informed about sexual intercourse and contraception then they will make use of this information and use precautions. Knowledge alone, however, is obviously not enough to encourage contraception use, adolescents need to be provided with the necessary cognitive and behavioural skills required to be successful sexually (Bandura, 1997; Gilchrist & Schinke, 1983). The interventions below can assist adolescent females in making informed decisions about sexual encounters and contraception use and help them to develop a sense of control over their sexual behaviour.

The point of interventions is to equip adolescents with skills that will help them use their knowledge even in the face of adversity. Bandura (1997) argued that difficulties arise because knowledge and intentions conflict with interpersonal pressures. These pressures include heightened sexual arousal, societal and coercive pressures, social acceptance, fear and rejection, which will affect an individual's perceived self-efficacy.

Levinson (1986) argued that the fundamental principle behind CSE is that interventions convey the belief that adolescent females can and should control their sexual behaviour. CSE training needs to aim at teaching adolescents how they can be responsible for the events in their lives so that they can act sexually responsible when unexpected situations arise. To gain sexual responsibility young females and males need to be able to understand and evaluate their decision-making, their behaviour and the consequences that may occur because of their sexual behaviour. Gilchrist & Schinke (1983) found that cognitive and behavioural skills training significantly enhanced perceived efficacy and skills in managing sexual behaviours and encounters.

New Zealand's sexual education programs need to identify those that are at greatest risk of having unprotected sexual intercourse. The contraceptive self-efficacy questionnaire can be used as a diagnostic tool to identify those at high risk of low self-efficacy, once this is established extra support and counselling can be provided for these individuals. Levinson et al., (1998) recommend an examination of each item on the scale to determine in what areas CSE is lowest. The situations provided by the contraceptive self-efficacy questionnaire could be used to identify areas that adolescents experience problems and can be taught skills to deal with that particular sexual situation. An example is to teach them communicative and negotiation skills so that when they are in sexual encounters they can ask their partner to use contraception and to discontinue and force the issue of contraception. If their partner refuses or none is available, they need to feel confident enough to discontinue their behaviour.

Research has supported the use of modelling and skills training with adolescents (Gilchrist & Schinke, 1983). They argued for the usefulness of role-playing for teaching adolescents about sexual situations and how to deal with them when they arise. Through modelling and practice adolescents can be taught how to communicate openly about sexual intercourse and contraception with their sexual partners and professionals. Role-playing and modelling can also be used to negotiate purchasing and obtaining contraceptives and how to resist unwanted sexual advances. Scripts can be used to help adolescent females develop a repertoire of skills related to decision-making and communication skills (Levinson et al., 1998).

Unwanted sexual advances while under the influence of alcohol appear to occur often, as shown by this research. For sexually active women it is important that they be taught skills that will help them resist coercion and teach them how to remove themselves from these situations. They need to practice applying new, more effective skills by role-playing and discussing their ideas; educators need to provide them with coaching instructions and corrective feedback. An area of concern with the participants in this study is to teach them, through role-plays and modelling, appropriate sexual behaviour when they are under the influence of alcohol. Assertiveness skills training can be used to assist them with avoiding unwanted sexual advances and to enforce the use of contraception in every sexual situation they encounter.

Furthermore, role-playing can be used to convey risky sexual situations that will enable these females to practice skills related to positive sexual decision-making, contraceptive communicative skills, and assertiveness skills for how to say no to sexual intercourse (Levinson, 1998). These skills when put into practice with positive outcomes can increase an adolescent's perceived efficacy. The more confident they are that they can control their behaviour the greater feelings of self-efficacy they will have when in a sexual encounter. Increased self-efficacy can lead to more effective contraception use and place these females at less risk of unplanned pregnancies and sexually transmitted infections

Often adolescent females perceive they are protected because they are on an oral contraceptive or another form of contraception and therefore, do not enforce the use of condoms in sexual encounters. This places them at risk of contracting sexually transmitted infections or HIV. Research has shown that adolescents do not use condoms because they fear partner disapproval or displeasure as a reason not to insist or mention it (Brien, Thombs, Mahoney & Wallnau, 1994). Interventions that focus on assertiveness skills training may need to be implemented in order to increase condom use.

Those who are sexually active and have lower levels of contraceptive self-efficacy appear to be high-risk candidates for alcohol misuse. It could be argued that when alcohol is introduced into sexual situations an individual's level of self-efficacy decreases and individuals are more likely to have sexual relations and less likely to use contraception. Bandura (1987) argued that substance abuse does weaken perceived self-efficacy to resist interpersonal pressures, such as pressure to have sexual intercourse when under the influence of alcohol. Therefore, education programs within schools should examine alcohol use, its effects and provide ways of teaching adolescents interpersonal skills for managing personal and social pressures, so they can control their behaviour and act responsibly when consuming alcohol.

Teaching skills for managing alcohol and drug use can be used in conjunction with sex education programs. It is unrealistic to expect abstinence from alcohol and sexual behaviour, but if students are taught to be effective contraceptive users and prepared

for any sexual situations that may arise when sober, they are more likely to use protection when they are under the influence of alcohol (Windle et al., 1996).

It is important that adolescent education programs be implemented before they engage in sexual relations. It has been argued that adolescents have sexual intercourse and unprotected sexual relations because of societal influences, such as peer pressure. Cognitive skills training should help adolescents identify the origins of pressures to engage in high risk sexual relations. By applying cognitive decision-making processes to their own lives may help them overcome the guilt associated with sexual reactions and feelings, which maybe in conflict with parental and social values, thus enabling them to take control of their sexual lives (Steven-Simon & McAnarney, 1996).

Education programs are just as important for those adolescents that have abstained from sexual intercourse, as it can prepare them for any future sexual situations that may arise. In this study, those that had abstained from sexual intercourse still reported that they had been taken advantage of sexually when they were under the influence of alcohol. Therefore, behavioural skills should be taught to these teens to show them how to remove themselves from these situations and how to resist coercion.

The results of this study highlighted that conscientious individuals are more effective contraceptive users and have higher level of self-efficacy associated with sexual behaviour. Conscientiousness has been associated with high achievement, ambition and goal-directedness (Costa & McCrae, 1992). Perhaps education programs should include a "life options" component. Conscientious individuals have high levels of motivation so perhaps those that engage in risky sexual behaviours need increased motivation and higher goals like conscientious individuals. Life option programs are based on the thought that at risk adolescents are lacking motivation and opportunities. It has been suggested that providing at risk teens with purposeful, goal-directed activities may provide them with the motivation to use contraception and abstain from risky sexual behaviours. The goal is to provide them with career options that are more attractive than parenthood (Stevens-Simon & McAnarney, 1996).

Females that are high in neuroticism have been shown to be low in contraceptive self-efficacy. It has been discussed earlier that there are sources of efficacy expectation that can increase perceived efficacy; these are performance experience and vicarious learning (Bandura, 1997). Performance accomplishments could be achieved through training workshops that get individuals to assume responsibility for their sexual behaviour. They need to be taught decision-making skills, assertiveness and contraceptive skills (how to properly apply a condom). Self-efficacy can also be increased through vicarious learning. Having others for whom they can observe and relate to can help individuals to develop particular skills that motivate them to learn new behaviours. By providing role models that adolescents can identify with, can provide them with the skills and motivation to follow positive sexual behaviours or to maintain their positive sexual behaviours (Van den Bossche & Rubinson, 1998).

Self-regulation appears to play an important role in self-efficacy and sexual behaviours. A sexually active individual requires self-regulative skills in order to guide and motivate one's behaviour. "Self-regulation operates through internal standards, evaluative reaction to one's behaviour, use of motivating self-incentives and other forms of cognitive self-guidance" (Bandura, 1997 pp.180). They determine the situations an individual gets themselves into and how well they get out of it, and how well they can resist sexual coercion. Self-regulative skills thus are an important part of sexual behaviour self-management. It has been shown that one way to reduce risky sexual encounters is through change programs that concentrate on the self-regulative model (Jemmott, Jemmott, & Fong, 1992). By simply developing adolescents' self-regulative skills and perceived efficacy needed to exercise control over sexual encounters, risky sexual behaviours can be significantly reduced.

In conclusion, it is important that educators understand that adolescents have different motivating factors and may experience different personal, environmental and/or behavioural obstacles that lead to the decision to have sexual intercourse and to use contraception. It is important that adolescents females are prepared emotionally, cognitively, and behaviourally in order to empower them to be effective contraceptive users.

4.11 Limitations

Caution should be taken when relating the data to the general population. It was originally the aim of this study to use public, co-educational secondary schools that had a wider array of socioeconomics, ethnicities and religions. Many schools that were approached were not interested in participating in this research. Therefore, a wider array of schools were contacted, all the schools that agreed to participate were private girls schools and a public girls school and therefore were demographically homogeneous. The results from this research can only be applied to white, middle class females and this may limit the extent to which these results can be generalised to low socioeconomic and minority adolescents.

It has been found that those at greatest risk of pregnancy and STI are those who come from low socioeconomic areas, single parent families, and Māori and Pacific Island families (Brewster, 1994; Fergusson & Lynskey, 1996; Ku, Sonenstein, & Pleck, 1993). The population in this study is considered low risk, which may limit the effectiveness of measuring CSE as the population showed relatively high levels of CSE. Even though this is the case, these adolescent females were still having unprotected relations and misused alcohol even though past research would argue that they are a low risk population.

To gain a greater understanding of the sexual measures (CSE and SOI) a greater number of sexually active participants are needed, this may explain why SOI was not predictive of the personality traits like expected. Further, to sharpen the understanding of the relationship between personality traits and CSE, future studies may establish results that are more significant with the full NEO instrument.

The questions in this study related to condom use and sexually transmitted infections could have been articulated to provide more interesting results as it may have biased participants' answers. The question stated what do you use to prevent sexually transmitted infections and the subjects had to tick the box corresponding to their answer (condom, none) this question could have lead the participants to answer condoms because it was too generalised. The question needed to be expanded to

assess whether they regularly use condoms and if not how often they do use them and in what situations they do not use them.

Although questionnaires were returned anonymously, there is danger of inaccuracy of response owing to the sensitive nature of the information requested. The measures were self-reported and therefore subject to recall bias. Had several different resources for data collection had been available (e.g., subject interviews, parental interviews, peer ratings etc.), a greater of confidence in the validity of the findings and their generalizability might have been attained. A number of different techniques were employed in order to make it less likely that the subjects would minimise or exaggerate reports of their sexual experiences. Firstly, participants were assured that their name was only required if they wanted to go into the draw for the prize and that it was not for use in the investigation. Code numbers were used to identify the participants' results for each questionnaire. Secondly, the importance of responding honestly was emphasised and they were assured that their responses would be kept confidential. Nevertheless, because it is difficult to validate self-reported sexual behaviour (Jemmott et al., 1992), it should be taken into consideration the possibility that the participants self-reports might not be accurate.

Despite these limitations, the research did highlight that adolescent females are conducting risk-taking sexual behaviours; it could be argued then that those who come from lower socioeconomic areas and schools, with different cultures could then be at a much greater risk of pregnancies and sexually transmitted infections. Their sexual knowledge is considered less, they have fewer economic resources and their socialisation processes could put them at greater risk than the sample in this research.

4.12 Future Research

Clearly, replications of these findings are necessary using a more generalised and greater sample of adolescents. Future studies will need to examine adolescents from lower socioeconomic schools and areas, in order to gain a greater understanding of those at the greatest risk of teenage pregnancy. A comparison of those from lower socioeconomics that choose to abstain from sexual intercourse with those that have intercourse may provide an interesting insight into the motivation behind females that put themselves at risk by having sex at an early age, having multiple partners, and not using contraception. If research can gain an understanding of what drives an adolescent to abstain or be effective contraceptive user then they may provide insight into how education programs can be improved.

Consequently, there was a bias towards the more mature end of adolescent development and therefore further research must examine adolescent sexual behaviour from early adolescence as these teens appear to be at greater risk of multiple partners and unprotected sexual intercourse. Further, a comparison between those who are having intercourse from early adolescence with those that choose to wait until they are in a serious relationship and old enough to make mature decisions may provide information on differences in the decision-making processes.

Future research might focus on other methods for data collection; interviews with adolescents may provide a greater insight into their sexual behaviours, as well as interviews with parents and peers to establish how realistic the adolescents and parents expectations are of their child's sexual behaviour.

It is important to highlight that women are not the only ones that should be responsible for their sexual behaviour. Future research should examine males and the role they play in practicing safe sex with partners. Links between the sexes need to be identified to find similarities between those that are effective contraceptive users and those that conduct risky sexual behaviours across genders. Growing evidence has found that males are playing a central role in contraceptive decisions to use contraception and have highlighted the importance of studying adolescent males'

attitudes towards pregnancy, contraception and parenthood (Steven-Simon & McAnarney, 1996). If males demand the use of condoms then they will reduce their chances of contracting an STI and getting their sexual partner pregnant. CSE has been shown to be a good measure for contraception use with males as well (Van den Bossche & Rubinson, 1998). Therefore, the interventions discussed earlier can be applied to male adolescents and used to increase their level of perceived efficacy so they become more effective contraceptive users.

Further, research needs to evaluate and establish the most effective education and intervention programs that will aid in the increase of contraception use and decrease teenage pregnancy and sexually transmitted infections. While the teen pregnancy rate remains high it seems that education and intervention programs need to cater to those that are at greater risk of having unprotected sexual intercourse. An evaluation of present education programs may provide information about what is lacking and where they can be improved.

Further, research needs to examine the validity of the assumptions of New Zealand's current sex education, family planning, and adolescent pregnancy prevention programs are based. For example, while it seems unlikely that teaching young people about sexual intercourse and contraception promotes sexual activity, further studies may need to determine if and how it is possible to simultaneously teach abstinence and contraception use and may highlight at which age this should start to be taught.

It has been shown that New Zealand adolescents have found sexual education programs as one of the most useful and most preferred way of gaining knowledge about contraception (Brander, 1991). Therefore, it is important that future research assess the best possible way to teach and reinforce accurate and usable contraceptive information. Further, it is important that other New Zealand services such as Family Planning clinics provide adolescents with the skills, abilities and needs of this particular age group. Future research can provide them with information of the most effective teaching programs and teaching process that will lead to increase contraception use and increase in the use of the services so that contraception is easily accessible.

It has been shown that older Caucasians with higher socioeconomic status have greater sexual knowledge (Heinrich, 1993). It could be argued that the population in this study could be considered to have a greater contraceptive knowledge as they have extensive sexual education classes through their entire years at school, but still they are not using contraception consistently. These females are not considered a high-risk population for adolescent pregnancy. Research highlighted certain demographics that predicted risky sexual behaviour these include low socioeconomic status, parents occupations, ethnicity, father absence and parents academic level (Brewster, 1994; Cooksey et al., 1996; Ellis et al., 2001; Paulin & Gray, 1993; Lynskey & Fergusson, 1993; Ramirez-Valles et al., 1998). Therefore, future research findings from lower economic schools combined with the results of this study may show an overall understanding of adolescent females' sexual practices.

In conclusion, the area of adolescent sexual behaviour and contraception use will continue to be a concern to health professionals and society. It is necessary to gain a greater understanding of self-efficacy, personality, alcohol use, and attitudes and how they interact to affect the probability of pregnancy and contracting a sexually transmitted infection so that high-risk adolescents can be identified and appropriate interventions implemented. It is crucial that education programs cater to the needs of the individual, but communicating an appropriate prevention method to adolescents is a challenge. To avert further increases in adolescent pregnancy and sexually transmitted infections an increase understanding of the most effective and influential prevention and treatment interventions is urgently needed.

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Appendices

Appendix 1

Letter sent to the Secondary Schools outlining the research

Katherine Aitken
C/o psychology department
University of Canterbury
Private Bag 4800

2 September 2002

To Whom it may concern,

My name is Katherine Aitken, at the moment I am conducting a Masters research project at the University of Canterbury investigating the relationship between an adolescent woman's personality characteristics and her motivation to take responsibility for both her sexual activity and for the use of contraception.

As, I am sure you know, New Zealand has one of the highest teenage pregnancy rates in the western world. Yet many adolescent women do not take advantage of the available contraceptive technology that would prevent unplanned pregnancies and sexually transmitted diseases. Therefore, the goal of this thesis is to gain a clearer understanding of the factors behind an adolescent women's decision to use contraception these factors include personality traits and variables like alcohol use, motivation, father absence, socio-economic status and others. It is thought that an examination of these characteristics might allow for a determination of the psychological factors that influence an adolescent woman's conscious effort to take responsibility for the consequences of her sexual behaviour and avoid pregnancy and sexually transmitted diseases.

The results from this research will hopefully be used in intervention and sex education programs to help those females that appear to be a greater risk of getting pregnant and contracting a sexually transmitted disease.

I am hoping to use female students between 16-18 years of age, it has been thought that the questionnaires could be given out during life skills class or study period. Students who choose to participate in this study will be given questionnaires to complete and if possible fill them out in class or they may take them away and return them at a later date. In addition, as a reward to the students for participating in this

research, one student at of every 25 participants will win a \$30 Westfield Riccarton voucher. As for parental consent it was suggested that an item be added to a newsletter or letter home outlining the research and if parents wish they can have their child withdrawn from the study

As a 'thank you' for allowing me access to your students I will provide your school with a detailed report of the results found from this thesis. This information will be specific and relevant to the development of coping issues to deal with this problem. If you wish, I am available to talk to the students about my findings or about other issues that have been raised during the course of this research.

This survey will be completely confidential, and no individual or school will be identified.

The Human Ethics Committee at the University of Canterbury has approved this project and a copy of the letter is attached.

If you have any questions or queries, please contact either myself or my supervisor, Dr Mark Byrd.

Your help would be greatly appreciated and if you require further information, I can send you a complete copy of my research proposal.

Yours Sincerely,

Katherine Aitken

Dr Mark Byrd: Ph: 364-2987 ext 7194

email: m.byrd@psyc.canterbury.ac.nz

Katherine Aitken: Ph. 364-2987 ext 3633

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Appendix 2

Consent form and brief description of research

UNIVERSITY OF CANTERBURY

DEPARTMENT OF PSYCHOLOGY

**DO PERSONALITY TRAITS DETERMINE SEXUALLY RESPONSIBLE BEHAVIOUR
AND CONTRACEPTIVE SELF-EFFICACY AMONG ADOLESCENT FEMALES?**

BRIEF DESCRIPTION OF THE PROJECT: New Zealand has one of the highest teenage pregnancy rates in the Western world, therefore, it is important that we determine those factors that influence their decisions to seek out and use contraception. Identifying these factors can assist in designing intervention and education programs for future teenagers.

This study will investigate adolescent women's personality traits, their level of self-efficacy (i.e. the level at which they think they can control a situation) and their level of sociosexual orientation (i.e. individuals' different ideas of sexual behaviour, beliefs and motivation). These factors will be assessed to determine if personality traits are associated with their decision to have or not have sexual intercourse, use contraception, how well they think they can control intimate moments with partners, and individual differences in the reasons for having restricted and unrestricted sexual intercourse. It is thought that knowledge of the relationship between these characteristics might help in the design of counselling programs that focus on various aspects of a teenage woman's personality to determine how they may be used to help adolescent women to control the consequences of their sexual activity (e.g. by increasing their perceived self-efficacy in intimate situations).

If you decide to take part in this study, you will be asked to fill out questionnaires that look at each of these factors. In addition, we ask that you fill out a background information sheet that will give us some information that will help us to interpret your answers.

RISKS ASSOCIATED WITH THIS PROJECT: NONE ARE FORESEEN

TIME REQUIRED: Approximately 25-35 minutes

The project is being conducted by Katherine Aitken and Mark Byrd, who may be reached by telephoning 366-7001, ext. 7194.

This project has been reviewed by the University of Canterbury Human Ethics Committee

CONSENT FORM

I agree to participate in the project described above, on the understanding that at any time I wish to withdraw from the study I may do so, without prejudice. I further understand that if I pullout I have the right to have any information returned to me. All information will be kept confidential and will be destroyed at the end of the study. I understand that any data gathered from this study will be reported only in terms of group averages and that my name will not be associated with any particular piece of information. Lastly, I understand that I will be given the opportunity to go over my decision after I have completed this study and discussed any details of the study with the researcher.

You are allowed to have a copy of this form if you wish.

NAME (just for the prize draw): _____

SIGNATURE: _____ **DATE:** _____

ADDRESS (to send raffle prize if winner):

Appendix 3

Demographic questions

DO PERSONALITY TRAITS DETERMINE SEXUALLY RESPONSIBLE BEHAVIOUR AND CONTRACEPTIVE SELF-EFFICACY AMONG LATE ADOLESCENT FEMALES?

YOU ARE INVITED TO PARTICIPATE IN A RESEARCH PROJECT ENTITLED "DO PERSONALITY TRAITS DETERMINE CONTRACEPTION USE AND CONTRACEPTIVE SELF-EFFICACY AMONG LATE ADOLESCENT FEMALES?" BY COMPLETING THREE QUESTIONNAIRES. THE AIM OF THE PROJECT IS TO ASSESS PERSONALITY TRAITS, SELF-EFFICACY (I.E. THE LEVEL AT WHICH YOU CAN CONTROL OR MASTER A SITUATION) AND SOCIOSEXUAL ORIENTATION IN ADOLESCENT WOMEN. THIS INFORMATION WILL BE USED TO DETERMINE HOW A WOMAN'S PERSONALITY CHARACTERISTICS RELATED TO HER DECISION TO SEEK OUT INFORMATION ABOUT CONTRACEPTION AND THE FEELING OF CONTROL SHE HAS OVER HER SEXUAL EXPERIENCES.

The questionnaires are **anonymous** and **confidential**, and you will not be identified as a participant without your consent. You may at any time withdraw your participation and have any information that you have provided returned to you. By completing these questionnaires, it will be understood that you have consented to participate in the project, and that you agree to allow for publication of the results as long as the data is reported only in terms of group averages and that your name will not be associated with any particular piece of data or information. You will be given the opportunity to review this decision after you have completed the questionnaires and the reasoning of the study has been explained fully to you.

Background information

- 1) Age: _____
- 2) What is/was your father's primary occupation? (No need to be specific- just a general area is fine) _____
- 3) What is/was your mother's primary occupation? (No need to be specific- just a general area is fine) _____
- 4) What religion are you? _____
- 5) What ethnicity are you?

Pakeha / European	<input type="checkbox"/>
Maori	<input type="checkbox"/>
Pacific Islander	<input type="checkbox"/>
Asian	<input type="checkbox"/>
Other	_____

6) a. Have you ever had sexual intercourse? Yes
 No

b. If no, please skip down to question 14.

c. If yes, at what age did you first have sexual intercourse?

7) a. Are you currently in a sexual relationship?
 No (go to question 8)
 Yes

b. If yes how long have you been together?

0-3 months	<input type="checkbox"/>
3-6 mths	<input type="checkbox"/>
6-9 mths	<input type="checkbox"/>
9-12 mths	<input type="checkbox"/>
12 + mths	<input type="checkbox"/>

8) a. Are you currently using any form of contraception?
 Yes
 No

b. If yes, what? _____

9) What form of contraception do you use to prevent pregnancy?

<input type="checkbox"/> Abstinence	<input type="checkbox"/> Withdrawal method
<input type="checkbox"/> None	<input type="checkbox"/> Contraceptive injection
<input type="checkbox"/> Contraceptive pill	<input type="checkbox"/> Diaphragm
<input type="checkbox"/> Condom	<input type="checkbox"/> other _____

PTO

10) What measures do you take to minimise your chance of contracting a sexually transmitted disease?

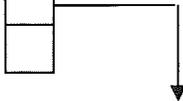
- None
 Condom
 Abstinence

11) How many sexual partners have you had? _____

12) Have you ever had a sexually transmitted disease? (STD's e.g. herpes, chlamydia, gonorrea etc.)

- Yes
 No

13) a. Have you ever been pregnant?

- Yes
 No
- 

b. If yes, at what age? 10-12 yrs

13-15 yrs

16-18 yrs

19 yrs

14) Were you born into a:

a. Single parent household.

b. Two parent household.

15) If you were born into a two-parent household, are your parents still living together?

- Yes
 No
- 

a. If No, how old were you when your birth parents first stopped living together?

b. When your birth parents first stopped living together, did you then live primarily with:

- Your mother.
- Your father.

PTO

16) Over the past 6 months how often would you have drunk alcohol?

- Never
- Very occasionally (once or twice)
- Less than once a month
- At least once a month
- At least once a week
- Almost everyday

17) How much do you typically drink on any one occasion?

- I don't drink
- 1-2 glasses
- 3-4 glasses
- 5-6 glasses
- 7-8 glasses
- 9-10 glasses
- 10+ glasses

18) At what age did you first start drinking? (do not answer this question if you answered never in question 16) _____

19) For each of the following statements please indicate by writing the number associated with how often you have experienced the following due to your drinking (do not answer this question if you answered never in question 16):

1	2	3	4	5	6
Never	Once	Twice	3-6 times	8-9 times	10+ times

- a) Had a hangover _____
- b) Had loss of memory _____
- c) Have been taken advantage of sexually _____
- d) Had sexual intercourse without using contraception _____
- e) Driven under the influence _____

Appendix 4

NEO five-factor personality measure

This personality questionnaire will ask you some questions about what type of person you are. Please read each statement and indicate whether you agree or disagree with it by circling one number for each question. Do not deliberate too long on any one statement. First impressions are best.

I am not a worrier.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I like to have a lot of people around me.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I don't like to waste my time daydreaming.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I try to be courteous to everyone I meet.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I try to keep my belongings clean and neat.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I often feel inferior to others.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I laugh easily.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Once I find the right way to do something, I stick to it.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I often get into arguments with my family and co-workers.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I am pretty good about pacing myself so as to get things done on time.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

When I am under a great deal of stress, sometimes I feel like I'm going to pieces.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I do not consider myself especially 'light-hearted'.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I am intrigued by the patterns I find in art and nature.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Some people think I'm selfish and egotistical.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I am not a very methodical person.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I rarely feel lonely or blue.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I really enjoy talking to people.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I believe letting people hear controversial speakers can only confuse and mislead them.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I would rather cooperate with others than compete with them.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I try to perform all the tasks of my life conscientiously.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I often feel tense and jittery.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I like to be where the action is.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Poetry has little or no effect on me.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I tend to be cynical and skeptical of others' intentions.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

***I'm attracted to bright colours and flashy styles.**

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I have a clear set of goals and work toward them in an orderly fashion.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Sometimes I feel completely worthless.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I usually prefer to do things alone.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I often try new and foreign foods.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I believe that most people will take advantage of you if you let them.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I waste a lot of time before settling down to work.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I rarely feel fearful or anxious.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I often feel as if I'm bursting with energy.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I seldom notice the moods or feeling that different environments produce.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Most people I know like me.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I work hard to accomplish my goals.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I often get angry at the way people treat me.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I am a cheerful, high-spirited person

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I believe we should look to our religious authorities for decisions on moral issues.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Some people think of me as cold and calculating.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

When I make a commitment, I can always be counted on to follow through.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Too often, when things go wrong, I get discouraged and feel like giving up.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I am not a cheerful optimist.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

***I really feel the need for other people if I am by myself for long.**

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

***I have sometimes done things for just “kicks” and “thrills”**

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Sometimes when I am reading poetry or looking at art, I feel a chill or wave of excitement.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I’m hard-headed and tough-minded in my attitudes.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Sometimes I’m not as dependable or reliable as I should be.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I am seldom sad or depressed.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

My life is fast-paced.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I have little interest in speculating on the nature of the universe or the human condition.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I generally try to be thoughtful and considerate.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I am a productive person who always gets the job done.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I often feel helpless and want someone else to solve my problems.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

***I often crave excitement.**

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I am a very active person.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I have a lot of intellectual curiosity.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

If I don’t like people, I let them know it.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I never seem to be able to get organized.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

At times, I have been so ashamed I just wanted to hide.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I would rather go my own way than be a leader of others.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

***I enjoy parties with lots of people.**

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

***I pride myself on my sound judgments.**

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I often enjoy playing with theories or abstract ideas.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

If necessary, I am willing to manipulate people to get what I want.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

I strive for excellence in everything I do.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

***I shy away from crowds of people.**

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

***I work hard to accomplish my goals**

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

If you have never had sexual intercourse, then thank you for your time and honesty when filling in this study, those that have please continue with the next questionnaires.

Appendix 5

Contraceptive Self-efficacy questionnaire

This contraceptive self-efficacy questionnaire will ask you some questions about contraception and sexual relationships. Please rate each item honestly and according to how true the statement is of you. Using the scale, circle one number for each question.

When I am with a boyfriend, I feel that I can always be responsible for what happens sexually with him.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

Even if a boyfriend can talk about sex, I can't tell a man how I really feel about sexual things.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

When I have sex, I can enjoy it as something that I really want to do.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

If my boyfriend and I are getting "turned on" sexually and I don't really want to have sexual intercourse, I can easily tell him "No" and mean it.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

If my boyfriend didn't talk about the sex that was happening between us, I couldn't either.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

When I think about what having sex means, I can't have sex so easily.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

If my boyfriend and I are getting "turned on" sexually and I don't really want to have sexual intercourse, I can easily stop things so that we don't have to have intercourse.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

There are times when I'd be so involved sexually or emotionally that I could have sexual intercourse even if I weren't protected (using a form of birth control).

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

Sometimes I just go along with what my partner wants to do sexually because I don't think I can take the hassle of trying to say what I want.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

If there was a man to whom I was very attracted physically and emotionally, I could feel comfortable telling him that I wanted to have sex with him.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

I couldn't continue to use birth control methods if I thought my parents might find out.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

It would be hard for me to go to the chemist or family planning and ask for contraception without feeling embarrassed.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

If my partner and I were getting really heavy into sex and moving towards intercourse and I wasn't protected.....

a) **I could easily ask him if he has protection (or tell him that I didn't).**

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

b) **I could ask him to use a condom (if you use that form of contraception).**

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

c) **I could tell him that I was on the pill or had an IUD (if you use that form of contraception)**

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

d) **I could stop things before intercourse, if I couldn't bring up the subject of protection.**

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

There are times when I should talk to my partners about using contraception; but , I can't seem to do it in the situation.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

Sometimes I end up having sex with a partner because because I can't find a way to stop it.

1	2	3	4	5
Not at all true of me	Slightly true of me	Somewhat true of me	mostly true of me	completely true of me

Appendix 6

Sociosexual orientation inventory

This sociosexual orientation inventory will ask you a series of questions, which will require you to both write in the spaces provided and circle one appropriate number on a scale according to your thoughts and attitudes. Please answer the following questions honestly; your answers will be kept anonymous and confidential.

- 1) With how many sexual partners have you had sex (sexual intercourse) with this past year? _____
- 2) How many sexual partners do you foresee having sex with during the next five years? (Please give a specific realistic number) _____
- 3) With how many different partners have you had sex with on one and only one occasion? (e.g. one night stands) _____
- 4) How often do you fantasise about having sex with someone other than your current sexual partner? (Circle answer)
- | | |
|-----------------------------------|-----------------------|
| 1. Never | 5. Once a week |
| 2. Once every two or three months | 6. A few times a week |
| 3. Once a month | 7. Nearly every day |
| 4. Once every two weeks | 8. Everyday |
- 5) Sex without love is okay: (circle answer)
- | | | | | |
|-------------------|----------|----------|----------|----------------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
- 6) I can imagine myself being comfortable and enjoying “casual sex” with different partners: (circle answer)
- | | | | | |
|-------------------|----------|----------|----------|----------------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
- 7) I would have to be closely attached to someone (both emotionally and psychologically) before I could feel comfortable and fully enjoy having sex with him or her: (circle answer)
- | | | | | |
|-------------------|----------|----------|----------|----------------|
| 1 | 2 | 3 | 4 | 5 |
| Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |

Appendix 7

Information Sheet

THANK YOU FOR PARTICIPATING IN THIS STUDY

Thank you for taking time to fill out the questionnaires. Without your help, scientific research would be impossible.

As mentioned in the consent form, this study was concerned with whether an adolescent woman's decision to seek out and use information about contraception was influenced by her personality traits and the level of control, or self-efficacy, she feels she has about her life and individual sexual beliefs.

The first questionnaire, which asked you whether certain statements may, or may not describe you, was used to assess another aspect of your personality.

The information gathered in this questionnaire allows me to understand your personality related to five main traits:

1. Extroversion/introversion or how much you like to be with other people vs. being yourself.
2. Anxiety or general level of distress or fear about the aspects of your life.
3. Openness or how willing you are to listen to new information and other points of view.
4. Agreeableness- related to helpfulness and trust levels
5. Conscientiousness or how hard working and diligent you are about the tasks of your life.

The second questionnaire, which asked questions about your sexual relationships, looked at your perception of your ability to control both sexual and contraceptive aspects of your life.

Research has shown that individuals' decision about using contraception is related to self-efficacy. That is, women who perceive themselves as being in control of their lives and sexual behaviour are more likely to take responsibility for their sexual activities and use contraception. Moreover, it has also been shown that certain personality traits, such as conscientiousness, make some people more likely to use contraception and thus have a higher level of self-efficacy.

The third questionnaire allows me to assess your sociosexual orientation towards sexual intercourse. That is, whether an individual is restricted or unrestricted when it come to their sexual beliefs and motivation related to their actual sexual behaviours.

This purpose of this study is to determine if there is an association between those adolescent women who choose to have sexual intercourse, their personality traits and contraceptive self-efficacy. Knowledge of such relationships might help us to determine factors that will influence adolescent women's decisions to behave in a sexually responsible way. That is, if it is found that these women who are conscientious about the problems in their lives, and act in a responsible manner regarding their sexual activities, then probably little needs to be done to assist these women to deal with their use of contraceptive technology. In contrast, those women who maybe quite fearful about the consequences of sexual activity and feel they have little control over there decisions about sexual behaviour need both information about contraception as well as counselling about dealing with their fears and increased feelings of self-efficacy.

Thus, it is hoped that the information gathered in this study might be used to help women with certain personality characteristics, deal with the problems associated with sexual activity and contraception.

If you have any questions about this survey or you would like further information about it, please do not hesitate to telephone Katherine Aitken or Mark Byrd at 366-7001, ext. 7914.

Remember, at this point you have a right to rethink your decision to participate in this study. If you choose to withdraw from the study, you may ask to have all data collected from you returned.

AGAIN, THANK YOU FOR YOUR HELP WITH THIS STUDY

Appendix 8

Sexual advice services and contact numbers

If you need advice about contraception, sexually transmitted diseases or pregnancy, then please contact the following services:

- Sexual Health Services
100 Wainoni Rd,
Ph. 389-5134
- Youth Health Centre
198 Hereford St,
Ph. 379-4800
- Family Planning Association
Arts Centre 301 montreal St.
Ph. 379-0514
- Cambridge Clinic
203 Cambridge Tce,
Ph. 366-0067
- Youthline
Ph. 379-4795