



Contraceptive use by Maori youth in New Zealand: associated risk and protective factors

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Abstract

Aims To identify risk and protective factors associated with consistent contraception use by sexually active Maori youth.

Methods Secondary analysis was undertaken utilising Youth2000, an anonymous nationally representative secondary school health and wellbeing survey, undertaken in 2001. We describe the self-reported sexual health and contraceptive use behaviours of Maori students. A multiple logistic regression model was utilised to identify risk and protective factors associated with consistent contraception use by sexually active Maori students.

Results Half of the Maori students have had sexual intercourse (54% males; 48% females) and a third are currently sexually active (33% males; 34% females). Most Maori youth who have ever had sex use condoms for contraception (82%) and most sexually active Maori youth reported consistent use of contraception (71% males; 70% females). Maori youth who use contraception consistently are more likely to report getting enough time with a parent (OR 1.50; 95% CI 1.05–2.14; $p=0.03$) and less likely to report weekly marijuana use (OR 0.53; 95% CI 0.37–0.76; $p=0.0006$).

Conclusions Consistent use of condoms is a common self-reported contraceptive practice by many young Maori. However this behaviour is not universal, and in view of the significant sexual and reproductive health disparities that exist for Maori youth, sexual and reproductive health programs should examine a broader strategy of promoting protective factors such as strengthening youth-parent relationships and reducing risk factors, such as minimising substance misuse. Together with existing efforts in education, *whanau* (family), and community based programs, these strategies may support healthier sexual health outcomes for Maori youth.

Sexual maturation and behaviour are significant components of the developmental process of adolescence and important determinants of the health and wellbeing of young people. Of concern to many families and communities are young people who suffer negative sexual and reproductive health outcomes as a consequence of their sexual behaviour.^{1–3}

For sexually active young people, avoiding these negative consequences of sexual behaviour in adolescence is most effective when contraception (to avoid pregnancy) and barrier protection (to prevent sexually transmitted infections) are consistently used correctly.⁴ This can often be achieved through the consistent and proper use of condoms.

Like many of the World's indigenous people, Maori youth in New Zealand are a particularly vulnerable group that bears greater than expected poor health (including sexual and reproductive health). Previous research has identified Maori youth as

initiating sexual activity earlier than their New Zealand European peers,⁵⁻⁷ and they are more likely to become pregnant during their teenage years.^{3,8,9} Maori youth are also more likely than other youth to acquire a sexually transmitted disease.^{10,11} Given these sexual health indicators, relatively little is known with regard the true population prevalence of sexual health indicators for Maori youth. Data sources are often incomplete and there are no systematic surveillance systems for gathering this data in a reliable manner.^{1,11} Indeed, to date there is a paucity of research literature that explores the use of contraception by Maori youth.^{1,12}

In recent years, youth health research has gone beyond the identification of risk factors to the examination of protective factors that promote good outcomes or resilience. The resilience framework seeks to understand and identify factors that protect vulnerable youth, and encourages them to thrive.¹³⁻¹⁸ The resilience framework also acknowledges that behaviour is influenced by the complex interplay of individual, biological, social, cultural, environmental, societal, and historical influences.^{19,20} A dual strategy of supporting protective resources and minimising risks is a central tenet of promoting resilience in public health.²¹ For Maori communities, this framework seems very consistent with Maori aspirations for development of capacities and self-determination.^{22,23}

Using a dataset from a nationally representative secondary school survey, this research sought to identify risk and protective factors associated with consistent contraceptive use among sexually active Maori youth.

Methodology

New Zealand's first national cross-sectional population-based youth health and wellbeing survey (Youth2000) was conducted in 2001. The study method is described in detail elsewhere.²⁴ In brief, 9570 randomly selected secondary school students completed the survey, accounting for 4% of the total secondary school population in New Zealand. Response rates for schools and students were 86% and 75% respectively. The anonymous comprehensive 523-item survey questionnaire was administered by Multimedia Computer-Assisted Self-Interview (M-CASI) on laptop computers.²⁵ Ethics approval was gained from the University of Auckland Human Subjects Ethics Committee.

For the purposes of this study, a sub-sample of 2340 participating students (24.7% of Youth2000 sample) who reported that they belonged to the Maori ethnic group was identified. Of the Maori students 52.9% were male and 76.1% were 15 years or younger.

For the purposes of these analyses, the outcome variable for Maori sexually active youth who use consistent contraception is defined by two survey questions:

- Students who were currently sexually active (had sexual intercourse within the past 3 months); and
- Students who answered they 'always' or 'mostly' used contraception when they have sex (to prevent pregnancy).

The independent variables are 14 hypothesised protective factors and 12 hypothesised risk factors previously identified in the literature (Table 3).^{13-18,26-31} An instrument measuring depressive symptoms (Reynolds Adolescent Depression Scale³²) and conduct-related behaviour problems were also used to investigate risk factors.

Control variables were age, gender, and socioeconomic status. Socioeconomic status was measured by the variables: school decile (a proxy socioeconomic variable at the school level incorporating a scale of 1 [poorest] to 10 [richest]; overcrowding; being in a two-parent family; family owning a car and telephone; and whether someone in the home was in paid employment.

Students were recruited using a clustered sample design with unequal probabilities of selection. In all analyses, the data have been weighted and the variance of estimates adjusted to allow for correlated data from the same school. Chi-squared tests were used to test for differences in proportions. Multiple logistic regressions were used to investigate the associations between risk and protective factors and consistent contraception use. All analyses have been conducted using SAS (version 9.1) software.

Results

Approximately half of the Maori students (54% males; 48% females) reported ever having had sexual intercourse. As Maori students got older they were more likely to have ever had sexual intercourse (Table 1).

Table 1. All Maori students' sexual intercourse by age and gender

Maori	N	Ever had sexual intercourse N (%)	N	Currently sexually active N (%)
Male				
≤13 years	235	76 (32%)	225	46 (20%)
14 years	296	144 (50%)	287	94 (34%)
15 years	227	113 (50%)	223	80 (36%)
16 years	160	103 (63%)	156	68 (43%)
≥17 years	97	65 (67%)	94	38 (40%)
All	1017	514 (50%)	987	328 (33%)
Female				
≤13 years	299	81 (27%)	288	44 (15%)
14 years	318	119 (37%)	316	77 (25%)
15 years	282	162 (57%)	273	123 (45%)
16 years	186	117 (63%)	184	90 (48%)
≥17 years	97	66 (68%)	95	53 (56%)
All	1184	637 (46%)	1148	389 (34%)

*2 males and 2 females did not have data on age; 30 males and 36 females did not have data on current sexual activity.

All students who had ever had sex were asked what type of contraception they used to prevent pregnancy. Condoms (82%) were the most common method of contraception used, followed by the oral contraceptive pill (36%), and then the emergency contraceptive pill (morning-after pill) (14%). The least common methods of contraception used by Maori students were the rhythm method (2%), Depo-Provera (6%), or the withdrawal method (7%). No contraception to prevent pregnancy was reported by 5% of students.

One-third (33.3% males; 33.7% females) of the Maori students reported being currently sexual active (having had sexual intercourse in the previous 3 months). Consistent use of contraception was reported by the majority of currently sexually active Maori students (males 71%; females 70%) (Table 2).

Table 2. Consistent* contraception use by currently sexually active students by age and gender (N=717). (*Consistent defined as always or usual use of contraception)

Maori	Consistent contraception use N (%)	
	Male	Female
≤13 years	32 (69%)	26 (61%)
14 years	62 (66%)	58 (77%)
15 years	61 (77%)	76 (61%)
16 years	46 (68%)	71 (79%)
≥17 years	30 (79%)	36 (69%)
All	231 (71%)	267 (70%)

There were no significant differences by age or gender for consistent contraception use. Table 3 describes the associations between consistent contraception use and previously identified risk and protective factors controlling for age and gender.

Table 3. Associations between consistent contraceptive use and selected risk and protective factors amongst sexually active Maori youth (adjusting for age and gender)

Protective factors	N	OR adjusted for age and gender (95% CI)	P value
Important to family to attend school	697	1.20 (0.55–2.64)	0.6
Parents care about you	705	1.23 (0.81–1.87)	0.3
Spend enough time with parents	696	1.74 (1.24–2.45)	0.002*
Extended family care about you	704	1.15 (0.84–1.58)	0.4
Can talk about problems with family	703	1.13 (0.82–1.55)	0.5
Have a family meal together	698	1.54 (1.03–2.31)	0.03*
Teachers care about you	696	1.66 (1.10–2.51)	0.02*
Teachers get to know you	692	1.09 (0.75–1.58)	0.6
Have friend to talk to about serious problems	618	1.43 (0.85–2.43)	0.2
Have other adults to talk to	597	1.68 (1.17–2.36)	0.005*
Feel neighbourhood is safe	590	1.89 (1.18–3.03)	0.008*
Spiritual beliefs are important	582	0.85(0.59–1.23)	0.4
Comfortable in Maori surroundings	707	0.84 (0.58–1.21)	0.3
Risk factors	N	OR adjusted for age and gender (95% CI)	P value
#RADS above cut off	689	0.71 (0.47–1.06)	0.09
Depressed for 2 weeks in a row	700	0.76 (0.49–1.07)	0.21
Depressed for 2 weeks in a row in last 4 weeks	700	0.55 (0.37–0.82)	0.004*
Thought about suicide in last month	690	0.67 (0.46–0.98)	0.04*
Thought about suicide in last year	691	0.91 (0.62–1.34)	0.64
Attempted suicide in last year	702	0.58 (0.38–0.88)	0.01*
History of sexual abuse	636	0.72 (0.49–1.01)	0.1
Drink alcohol weekly	640	0.95 (0.65–1.39)	0.8
Smoke cigarettes weekly	628	0.85 (0.60–1.22)	0.4
Use marijuana weekly	618	0.47 (0.34–0.65)	<0.0001*
Currently use other drugs	566	0.74 (0.43–1.27)	0.3
Conduct problems	551	0.63 (0.35–1.12)	0.1
Victim of violence	689	0.99 (0.72–1.36)	0.9
Have a chronic illness	710	0.99 (0.72–1.38)	0.98

#RADS=Reynolds Adolescent Depression Scale; *Statistically significant with a $p<0.05$

Protective variables that demonstrated statistical significance were: getting enough time with parents ($p=0.002$); having a family meal together ($p=0.03$); feeling teachers cared about them ($p=0.02$); having an adult they could talk to ($p=0.005$); and feeling neighbourhoods are safe ($p=0.008$).

Risk factors associated with inconsistent contraception were: depressed for 2 weeks in the last 4 weeks ($p=0.004$); thoughts about suicide in the last month ($p=0.04$); attempted suicide in the last year ($p=0.01$); and weekly marijuana use ($p<0.0001$).

Protective factors associated with consistent contraception use (Table 3: getting enough time with parents; feel their teachers care about them; feel their neighbourhoods are safe; having an adult to talk to) were included in a logistic regression model along with risk factors (depressive symptoms in the last 4 weeks and weekly marijuana use); and the potential confounders age and gender and school decile (a proxy socioeconomic variable at the school level) (Table 4).

Table 4. Consistent contraception use among Maori youth in logistic regression model (controlling for age, gender). N=536

Effect	Odds ratio	95% confidence limits	P value
Age (13 vs 17)	0.64	0.27–1.51	0.5
Age (14 vs 17)	1.12	0.55–2.27	
Age (15 vs 17)	1.02	0.51–2.02	
Age (16 vs 17)	1.42	0.71–2.82	
Sex (F vs M)	0.90	0.59–1.38	0.6
Teachers care (yes vs no)	1.45	0.91–2.32	0.1
Enough time with parent (yes vs no)	1.50	1.05–2.14	0.03*
Family meal together (yes vs no)	1.48	0.94–2.32	0.09
Depression in the last 4 weeks (yes vs no)	0.73	0.44–1.20	0.2
Use marijuana weekly (yes vs no)	0.53	0.37–0.76	0.0006*
Neighbourhood is safe (yes vs no)	1.46	0.82–2.60	0.2
An adult to talk to (yes vs no)	1.35	0.92–1.99	0.1

*Statistically significant with a $p < 0.05$

Only one depressive variable (depressive symptoms in the last 4 weeks) was utilised to avoid problems with collinearity in the model (Table 4). There were 536 students who were currently sexually active and had full information; thus they could be included in the model.

The results of the model reveal that sexually active Maori youth attending secondary school are more likely to consistently use contraception when they report getting enough time with a parent or someone who acts as a parent ($p=0.03$) (Table 4). Moreover, Maori youth who report weekly marijuana use are significantly less likely to use contraception consistently ($p=0.0006$).

Discussion

Half of Maori youth aged 13 to 17 years in a nationally representative sample of secondary school students report having sexual intercourse, and over 80% of these students report using a condom as their method of contraception to prevent pregnancy. About one-third of Maori students in secondary school are currently sexually active (sexually active within the past 3 months), and 70% of this group report consistent use of contraception. Consistent contraception use did not differ by age or gender. Sexually active Maori students who consistently use contraception are more likely to report getting enough time with a parent and less likely to report regular marijuana use.

Little published research has investigated the role of protective factors and resilience for Maori or other indigenous youth, particularly with regard to sexual and reproductive health. Our findings support previous authors who suggest strong

positive and caring family connections are a significant protective factor for safer sexual behaviour.^{17,33-36} Ecological theories tell us that making responsible sexual decisions and being resilient is not solely an individual trait, rather it is mediated by multiple domains in the wider family, social, economic and political environments.^{19,37}

The holistic beliefs of Maori about the interconnectedness of health to the broader *whanau* (family) environment are consistent with the resilience framework, and a move from blaming individuals to understanding that multiple systems and contexts influence health behaviours of individuals and groups. This positive contextual concept is a vital foundation when promoting the sexual and reproductive wellbeing of Maori youth to avoid the stigma and shame frequently associated with sexuality.

Consistent contraception use is a useful public health concept, as it frames the sexual development and behaviour of Maori youth as a normal developmental task, and the use of contraception as a normal adult behaviour to be learned and mastered. Condoms are a popular choice amongst Maori youth; in addition to affording protection against pregnancy condom use, condoms protect against many sexually transmitted infections. Public health activities that aim to reduce barriers to condoms such as lowering cost, and increasing knowledge and education should be considered vital strategies for Maori youth.

Whanau (families) should be supported so that they spend time and talk to their *tamariki* (children) about sexuality as a normal part of growing up for the child. Moreover, clinicians have a role in supporting and educating parents to communicate effectively about sexuality, mental health, substance use, and other risky behaviours with their children. Indeed, research on effective pregnancy prevention programs tell us that programs must go beyond sexual health knowledge and skills to involve multiple components including substance use, mental health, family relationships, education, and the broader social and political contexts.³²

Maori youth who are the most vulnerable for negative sexual health outcomes (unintended pregnancy and sexually transmitted infections) are the 29% who do not consistently use contraception. No significant differences by age or gender amongst youth who use contraception inconsistently were found in this study, which suggests that a broad-based public health program which addresses all Maori youth may be appropriate to address this vulnerable group.

This study indicates how programmes, which influence a broader set of risk and protective factors, are worthwhile avenues for public health intervention. Substance abuse has previously been highlighted as a significant risk factor associated with inconsistent contraception use.^{38,39} In this study, marijuana-use is a significant risk factor for Maori youth who do not use contraception consistently. The use of other drugs and alcohol, however, was not found to be significant in this study so may require further investigation in this population.

This study's finding that weekly marijuana-use is associated with inconsistent contraception-use, highlights (for Maori youth) the importance of addressing substance-abuse amongst Maori youth as well as its associations with other risky health behaviours.

This study's strength is this data comes from the largest randomly selected sample of young Maori ever surveyed on their health and wellbeing. The study's acceptability to young people and its anonymity promote honest responses to personal and sensitive questionnaire items.⁴⁰ A limitation of this study is the ability of the questionnaire items to provide reliable and valid measures of complex concepts such as socioeconomic factors and risk and protective factors for Maori youth. Although these factors and question items were identified from relevant literature and research, there is little research to guide the applicability of these factors to young Maori. A further limitation is missing data for some variables in the multiple regression models, which reduce the statistical power to detect differences.

The most frequent missing variables were marijuana-use, feeling safe in your neighbourhood, and having an adult to talk to (reducing the number of students in the model to 536 out of 717 sexually active Maori students). Finally, the youth who were absent from school the day the survey was administered, or who have dropped out of school, are not represented in this data. Therefore this study is likely to underestimate the prevalence of risky sexual behaviours in the youth population.

The existent disparities in negative health outcomes for Maori youth underline the challenges facing contemporary New Zealand sexual and reproductive health programmes. This study has significant implications for those responsible for addressing this important public health issue. Furthermore, its findings support a broad strategy of promoting protective factors such as strengthening youth-parent relationships, and reducing risk factors such as substance-misuse in addition to enhancing specific sexual health knowledge, skills, and access.

These comprehensive strategies will strengthen Maori *whanau* (families) and communities, and ensure that Maori youth have healthier sexual and reproductive health outcomes.

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