The impact of religion and spirituality on the risk behaviours of young people in Aotearoa, New Zealand

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An analysis of 3,506 students who reported attending a church, mosque, temple or other place of worship once a year or more often was conducted using a nationally representative sample of secondary school students from New Zealand. Among students who attend religious communities, those who report higher connection to their place of worship and strong spiritual beliefs reported fewer health risk behaviours and/or mental health concerns. An exception was among sexually active students who had a strong connection to their place of worship, they more frequently reported inconsistent contraceptive use compared to sexually active students with a low connection to their place of worship. While connection to a religious community and strong spiritual beliefs were associated with fewer health-risking behaviours and mental health concerns, highly spiritual young people who are sexually active are less likely to use condoms or contraception.

Over the past 30 years there has been a shift in how spirituality and religion have been viewed in society and by academic researchers. Historically, spirituality has been viewed within a western religious framework and was seen as innate (Nolan & Crawford 1997), that is experienced by everyone as an inbuilt perspective on humanity (Hay, Reich & Utsch 2006) with both emotive and subjective elements (Jose & Taylor 1986). However religiosity has been viewed as the bond between humanity and a higher being – a supernatural power to which

individuals are motivated or committed to, which results in a feeling within the individual who conceives such a power and ritual acts carried out in respect of that power (Wulff 1997).

Spirituality is now understood to exist independently of a religious institution so that people can be seen as spiritual but not religious (Davidson 2004; Ward 2004).

The focus of this paper is to explore spirituality and religion, engagement in risk behaviours and emotional health concerns among a sample of New Zealand young people aged 13 to 17 who attend a place of worship. There has been much research offered on measures of spirituality and religiosity, yet the challenge remains that such measures for adolescents may not be distinguishable from a young person's need to belong and feel connected. For young people, social connectedness may be just as important as the more personal aspects of spiritual belief within or outside the context of a religious community. This paper is unique to the New Zealand context of secondary school students aged 13 to 17 and questions whether religious communities are protective and contribute to the wellbeing of young people. This is of particular interest considering New Zealand youth have high rates of mental health issues, alcohol and drug abuse issues, suicide and suicide attempts, and sexually transmitted infections compared with other western countries (Pollock 2012).

Methods and measures

Data for the current study were collected as part of a national survey of the health and wellbeing of New Zealand secondary school students aged 13 to 17 during 2007 (Adolescent Health Research Group 2007). This survey used a two-stage clustered sampling design to select a nationally representative sample of secondary school students. The survey was a 622-item, anonymous, cross-sectional, self-report questionnaire. A branched questionnaire design was used so that participants with no experiences or behaviours in particular areas were not asked the associated questions. The survey was conducted using internet tablets. Students were able to choose English or Te Reo Māori as the preferred language for the survey.

A nationally representative sample of all secondary schools was drawn from the New Zealand Ministry of Education database in June 2006. Schools with fewer than 50 students in Years 9–13 were excluded, leaving 389 schools eligible to participate. From these schools, 115 were randomly selected and 96 agreed to participate, representing an 83% response rate. The majority of participating schools were publicly funded (70%), co-educational (71%), and had rolls of fewer than 700 students (60%), reflecting the general characteristics of secondary schools in New Zealand (Adolescent Health Research Group 2007). Ethical approval was obtained from The University of Auckland Human Subject Ethics Committee.

In total, 9,107 students out of the 12,355 invited students took part in the study, representing a 74% response rate. Apart from a slightly higher percentage of male students, the participating students were similar demographically to the national population of secondary school students. Students who attended a church, mosque, temple or other place of worship were the focus for this study. Of the 9,107 students, 8321 students answered the neighbourhood section, which had the questions on spirituality or religion. Due to optional branching, 2,160 students did not answer the questions on spirituality or religion. Of the remaining 6,161 students, 3,506 (56.9%) reported that they did attend a place of worship while the remaining 2,655 students stated that they did not attend a place of worship in the last year. The present analysis used data from the 3,506 students

who reported attending a church, mosque, temple or other place of worship once a year or more. There was an even distribution of young people aged 13 to 17, with more females represented (53.2%) than males (46.8%). The majority of these participants lived in urban New Zealand settings (87%), 37.8% lived in low deprivation areas and 25.8% lived in areas of high deprivation. Ethnicity was assessed using the standard ethnicity question developed for the New Zealand Census, in which participants could select all of the ethnic groups that they identified with. Approximately 40% of students identified with more than one ethnic group. Discrete ethnic populations using the New Zealand Census prioritisation method (Statistics New Zealand 2005) were used to assign students to one ethnic group in the following order: Maori (14.2%); Pacific (13.8%), Asian (18.3 %), and New Zealand European and other (53.7%). Just under half of students (48.3%) identified their religion as Christian; Protestant religions (Anglican, Presbyterian, Methodist, Baptist, Pentecostal, Brethren, Assembly of God, Salvation Army and Seventh Day Adventist) accounted for 12.5%, and 13.3% of the young people surveyed identified as Roman Catholic. Students who identified as attending a mosque, temple or religious community or religious group other than Christian accounted for 12.9%. In addition, 13% of students identified with no religious community or group, despite attending a church, mosque, temple or other place of worship once a year or more.

The questions used to form scales to measure spirituality and religiosity (Table 1) were based on a review of the literature and focus groups with young people (O'Brien 2011). Spirituality was conceptualised as a personal belief, and questions were deliberately left open for young people to interpret for themselves how they understood spirituality, whereas religiosity was conceptualised as attending and belonging to a religious community. The responses were calculated using the summed z scores of the individual items for each student. The Cronbach Alpha for the *spirituality scale* was 0.94 (n = 3357) and the Cronbach Alpha for the *religiosity scale* was 0.88 (n = 3355). The Pearson correlation between the religiosity and spirituality scales was high: 0.73 ($p<0.001$, $n = 3480$). *Age, gender* and *ethnicity* were determined by self-report.

Table 1: *Measures of spirituality and religiosity*

Spirituality measure	Religiosity measure
1. "How important to you are your spiritual beliefs?" With the response options: "very important", "somewhat important", "not important".	1. How often do you attend a church, mosque, temple, or other place of worship?" With the response options: "three times a week or more", "about once a week", "about once a month", "about once a year", "never".
2. "How often do you pray or worship by yourself?" With the response options: "three times or more a week", "about once a week", "about once a month", "about once a year", "never".	2. "How important is it to you to attend a church, mosque, temple, or other place of worship?" Response options: "very important", "somewhat important", "not important".
3. "How important is your faith or spiritual beliefs in how you live your daily life?"	3. "Do you feel you belong in your church, mosque, or temple?"
4. "How important is your faith or spiritual beliefs for making major life decisions?"	4. "Do adults at your church, mosque, or temple respect you?"
5. "Does your faith or spiritual beliefs give your life a sense of meaning and hope?"	5. "Do you feel close to adults at your church, mosque, or temple?"
Questions 3–5 all had response options of: "not at all", "a little", "some", "a lot".	6. "Are your values and beliefs similar to the people at your church, mosque, or temple?"
	Questions 3–6 all had response options of; "not at all", "a little", "some", "a lot".

To explore the combined association of both level of spirituality and level of connection to a religious community, a combined variable was created by categorising students to high/low levels of spirituality and connection to a religious community based on whether they scored above or below the mean levels of spirituality and connection to a religious community.

The resulting variable had four levels: "high spirituality/high connection", "low spirituality/ high connection", "high spirituality/low connection" and "low spirituality/low connection".

Small area deprivation was determined using the 2006 New Zealand Deprivation Index (NZDep). During the survey, students were asked to provide their home address in order to ascertain the small area geographical unit or mesh block in which they lived. To protect participating students' anonymity, the home address information was not saved. Each participating student's NZDep was calculated by linking their residential mesh block number to their respective neighborhood NZDep. NZDep measures eight dimensions of deprivation using 2006 Census data based on small area geographical (mesh block) units. The index deciles were categorised into three groups reflecting low deprivation (1–3), middle levels of deprivation (4–7), and high deprivation (8–10). The mesh block was also used to classify students' residential location into main urban (cities, major urban areas and minor urban centres with a minimum population of 1,000 people) and rural (rural centres and locations with populations fewer than 1,000 people).

A total of nine risk behaviours and emotional health outcome variables were examined in these analyses and were selected to capture the main behaviours and mental health disorders that have been shown to significantly affect the health and development of adolescents (DiClemente, Hansen & Ponton 1996; Ministry of Health 2002; Pollock 2012; World Health Organisation 2002). These risk behaviours included: frequent alcohol use (weekly or more often); binge drinking (one or more times in the previous four weeks); frequent marijuana use (weekly or more often); current cigarette use (occasionally or more often); risky motor vehicle use; previous sexual intercourse; inconsistent contraception use of students currently sexually active; and emotional health: concerns of depression based on the Reynolds Adolescent Depression Questionnaire (Reynolds 2010) and suicide attempts in the last 12 months. These behaviours were conceptualised as a continuum and cut-off points were chosen that represent severe behaviours or symptoms involving high levels of risk and morbidity, resulting in dichotomous outcome variables.

Analysis was conducted using the survey procedures in the SAS software v9.2 (SAS Institute 2009) to account for the weighting and clustered design of the data. Frequencies and 95% confidence intervals were generated to describe the prevalence of spirituality and connectedness to a place of worship among the student sample. The spirituality and religiosity scales were broken into tertiles and the prevalence of student risk behaviours and symptoms were estimated within each tertile. Due to the high correlation between the spirituality and religiosity scales, separate logistic regression equations were generated to determine the association between the spirituality and religiosity scales, and student risk behaviours and emotional health symptoms, while controlling for age, sex, ethnicity and small area deprivation. Differences were considered to be statistically significant at $p<0.05$.

Results

Of the students who attended a place of worship, half attended weekly or more often and there were no differences by gender or age in the frequency of attending their place of worship or importance of their spiritual beliefs (Table 2). Students from neighborhoods of high deprivation ($p<0.001$) and Pacific students ($p<0.001$) were more likely to attend their place of worship weekly or more often than students from more affluent neighbourhoods and students from other ethnic groups. Students

from rural areas were less likely to regularly attend their place of worship compared to students from urban areas (p = 0.001) (Table 3). Similarly, findings with respect to feelings of belonging to their place of worship showed that, overall, 68% of students reported that they felt that they belonged in their place of worship, as did 72.6% of students from neighborhoods of high deprivation (p<0.001). Pacific students and students from urban areas were more likely to report feeling that they belonged to their place of worship (p<0.001) than students from more affluent neighbourhoods and students from other ethnic groups (Table 3).

Table 2: ***Frequency of attending place of worship, importance of spiritual beliefs and belonging to their place of worship among secondary school students who attend a place of worship, by gender and age (N = 3506)***

		Attends place of worship weekly or more often			Spiritual beliefs are very important			Feels like they belong in their church, mosque or temple		
	N (%)	%	95% CI*	P value	%	95% CI*	P value	%	95% CI*	P value
	3506	50.7	46.6–54.8		43.7	39.7–47.7		64.1	61.0–67.2	
				0.09			0.41			0.68
Female	1868 (53)	48.5	43.9–53.1		42.8	38.4–47.2		64.5	60.6–68.4	
Male	1638 (47)	53.2	48.0–58.5		44.8	39.9–47.2		63.6	59.9–67.3	
				0.25			0.14			0.04
≤13	642 (18)	54.8	49.1–60.5		47.6	42.7–52.4		68.0	63.4–72.5	
14	748 (21)	50.2	44.6–55.9		45.6	39.4–51.8		65.9	61.6–70.2	
15	748 (21)	51.3	46.3–56.3		42.9	37.8–48.1		63.9	59.6–68.2	
16	736 (21)	47.9	41.9–53.8		41.6	36.0–47.2		61.3	57.2–65.4	
17 ≥	632 (18)	49.7	44.1–55.4		41.3	36.6–45.9		61.5	56.7–66.2	

Table 3: ***Frequency of attending place of worship, importance of spiritual beliefs and belonging to their place of worship among secondary school students who attend a place of worship, by demographic variables (N = 3506)***

		Attends place of worship weekly or more often			Spiritual beliefs are very important			Feels like they belong in their church, mosque or temple			
N (%)	%	95% CI*	P value	%		95% CI*	P value	%	95% CI*	P value	P value
NZ Deprivation					<0.001			<0.001			<0.001
	Low	1318 (38)	45.8	40.4–51.1		37.5	32.4–42.6		58.9	55.3–62.6	
	Medium	1267 (36)	49.6	45.2–54.1		43.9	39.6–48.3		63.1	59.1–67.1	
	High	897 (26)	59.1	53.2–64.9		52.8	47.5–58.2		72.6	69.0–76.1	
Geography					0.001			<0.001			<0.001
	Rural	455 (13)	39.6	31.6–47.7		29.7	24.7–34.8		54.4	48.9–60.0	
	Urban	3028 (87)	52.3	48.3–56.2		45.8	41.9–49.8		65.4	62.2–68.7	

		Attends place of worship weekly or more often				Spiritual beliefs are very important			Feels like they belong in their church, mosque or temple			
N (%)	**%**	**95% CI***	**P value**	**%**		**95% CI***	**P value**	**%**	**95% CI***	**P value**	**P value**
Ethnicity					<0.001			<0.001			<0.001
	European	1648 (47)	44.6	39.0–50.2		33.7	28.7–38.7		56.9	53.2–60.6	
	Maori	500 (14)	42.4	36.5–48.2		38.9	33.5–44.3		62.3	48.2–66.4	
	Asian	635 (17)	53.0	48.2–57.9		48.7	45.1–52.4		67.0	62.0–71.9	
	Pacific	478 (14)	74.2	68.8–79.6		68.6	64.6–72.5		82.5	79.3–85.7	
	Other	243 (7)	55.8	49.6–62.1		59.8	53.2–66.5		70.6	64.9–76.3	

Table 4: ***Prevalence of health-risking behaviours and emotional health concerns among students attending a place of worship, by gender (N = 3506)***

Health-risk concern	**Total**		**Male**		**Female**		**p value**
	n	**%**	**n**	**%**	**n**	**%**	
Frequent use of alcohol (weekly or more often)	453	13.1	226	14.1	227	12.2	0.13
Episodes of binge drinking in the last four weeks	942	27.4	466	29.2	476	25.9	0.06
Frequent use of marijuana (weekly or more often)	78	2.3	48	3.1	30	1.6	0.02
Current cigarette use	428	12.4	161	10.1	267	14.3	0.002
Risky motor vehicle use	410	11.7	209	12.8	201	10.7	0.11
Ever had sexual intercourse	971	28.7	454	29.0	517	28.4	0.80
Inconsistent contraception use*	117	13.2	49	11.9	68	14.3	0.36
Depression cut-off	356	10.3	104	6.4	252	13.7	<0.001
Suicide attempts	146	4.1	40	2.4	106	5.7	<0.001

*Among students who are sexually active

Table 5: ***Prevalence of student risk behaviours and emotional health concerns, by level of spirituality (N = 3506)***

	High spirituality	**Medium spirituality**			**Low spirituality**			
	%	**%**	**aOR****	**95% CI**	**%**	**aOR****	**95% CI**	**p value**
Frequent use of alcohol (weekly or more often)	6.7	14.5	2.2	1.6–3.0	20.2	2.8	2.0–3.8	<.001
Episodes of binge drinking in the last four weeks	14.8	32.0	2.9	2.3–3.6	38.1	3.3	2.5–4.4	<.001
Frequent use of marijuana (weekly or more often)	1.8	1.8	1.1	0.6–1.8	3.6	2.4	1.2–4.8	0.01
Current cigarette use	7.4	14.4	2.1	1.6–2.8	16.0	2.5	1.8–3.5	<.001
Risky motor vehicle use	8.7	12.1	1.5	1.2–2.0	15.6	2.2	1.6–3.0	<.001

	High spirituality	Medium spirituality			Low spirituality			
	%	%	aOR**	95% CI	%	aOR**	95% CI	p value
Ever had sexual intercourse	21.3	30.6	1.8	1.5–2.2	35.7	2.3	1.8–3.0	<.001
Inconsistent contraception use*	21.4	12.5	0.7	0.5–1.0	7.7	0.5	0.3–0.8	0.001
Depression symptoms	8.5	11.4	1.4	1.1–1.9	11.1	1.5	1.1–2.1	0.001
Suicide attempts	3.7	5.1	1.5	1.0–2.2	3.5	1.2	0.7–1.9	0.038

*Among students who are sexually active

** aOR = adjusted odds ratio, adjusted for age, gender, ethnicity and socioeconomic deprivation

Table 6: ***Prevalence of student risk behaviours and emotional health concerns, by level of connection to a religious community (N = 3506)***

	High connection	Medium connection			Low connection			
	%	%	aOR**	95% CI	%	aOR**	95% CI	p value
Frequent use of alcohol (weekly or more often)	6.7	12.8	1.9	1.4–2.7	19.7	3.0	2.1–4.1	<.001
Episodes of binge drinking in the last four weeks	16.4	28.0	2.1	1.6–2.7	37.4	3.1	2.4–3.9	<.001
Frequent use of marijuana (weekly or more often)	2.0	2.3	1.3	0.7–2.4	2.5	1.5	0.8–2.9	0.44
Current cigarette use	9.1	12.0	1.4	1.1–1.8	15.9	2.0	1.5–2.6	<.001
Risky motor vehicle use	8.8	11.1	1.5	1.1–2.0	15.2	2.2	1.7–3.0	<.001
Ever had sexual intercourse	23.4	26.6	1.3	1.1–1.6	35.9	2.1	1.7–2.6	<.001
Inconsistent contraception use*	23.6	9.8	0.4	0.3–0.7	9.7	0.5	0.3–0.8	0.001
Depression cut-off	7.5	10.7	1.5	1.1–2.0	12.6	1.8	1.3–2.5	0.001
Suicide attempts	4.0	3.4	0.9	0.6–1.4	5.0	1.5	1.0–2.3	0.04

*Among students who are sexually active

** aOR = adjusted odds ratio, adjusted for age, gender, ethnicity and socioeconomic deprivation

Table 7: ***Prevalence of student risk behaviours and emotional health concerns, by level of spirituality and level of connection to a religious community (N = 3506)***

	High spirituality / High connection n = 1483 (42.4%)	High spirituality / Low connection n = 388 (11%)	Low spirituality / High connection n = 324 (9.2%)	Low spirituality/ Low connection n = 1298 (37.3%)	p value
Frequent use of alcohol (weekly or more often) % (95% CI)	6.9 (5.3–8.4)	15.6 (10.8–20.3)	18 (13.5–22.6)	18.1 (15.2–21.1)	
aOR** (95% CI)	1	2.3 (1.5–3.4)	2.7 (1.9–3.9)	2.4 (1.8–3.3)	<0.001
Episodes of binge drinking in the last four weeks % (95% CI)	16.6 (14–19.1)	30.5 (24.6–36.3)	35 (28.8–41.2)	36.7 (32.4–40.9)	
aOR** (95% CI)	1	2.1 (1.6–2.9)	2.8 (2.0–3.9)	2.7 (2.1–3.4)	<0.001
Frequent use of marijuana (weekly or more often) % (95% CI)	1.6 (0.9–2.4)	1.8 (0.5–3.2)	4.1 (1.6–6.5)	2.6 (1.6–3.6)	
aOR** (95% CI)	1	1.1 (0.4–2.7)	2.5 (1.2–5.3)	1.8 (0.9–3.5)	0.04
Current cigarette use % (95% CI)	8.5 (6.6–10.3)	14 (9.2–18.8)	15.6 (11.1–20.2)	15.4 (13.1–17.6)	
aOR** (95% CI)	1	1.7 (1.1–2.7)	1.9 (1.2–3.1)	2.0 (1.5–2.6)	<0.001
Risky motor vehicle use % (95% CI)	9.2 (7.1–11.2)	12.5 (9–16)	13.3 (9.1–17.6)	13.8 (11.5–16.2)	
aOR** (95% CI)	1	1.5 (1.1–2.0)	1.5 (1.0–2.3)	1.8 (1.3–2.4)	<0.001
Ever had sexual intercourse % (95% CI)	21.8 (18.2–25.4)	28.4 (22.3–34.4)	36.6 (30.5–42.6)	34.4 (29.5–39.3)	
aOR** (95% CI)	1	1.4 (1.1–1.8)	2.3 (1.7–3.1)	2.1 (1.7–2.5)	<0.001
Inconsistent contraception use* % (95% CI)	20.1 (14.9–25.3)	10.6 (3.8–17.3)	13 (7–19)	9.2 (6.7–11.6)	
aOR** (95% CI)	1	0.6 (0.3–1.2)	0.8 (0.4–1.5)	0.6 (0.4–0.9)	0.18
Depression cut-off % (95% CI)	8.2 (6.7–9.7)	11.4 (7.2–15.6)	11.4 (7.7–15)	11.9 (9.5–14.3)	
aOR** (95% CI)	1	1.4 (0.9–2.2)	1.5 (1.0–2.3)	1.6 (1.2–2.1)	0.01
Suicide attempts % (95% CI)	3.7 (2.7–4.8)	4.7 (2.6–6.8)	4.7 (2.5–6.9)	4.2 (2.9–5.4)	
aOR** (95% CI)	1	1.3 (0.7–2.4)	1.4 (0.8–2.4)	1.3 (0.9–1.9)	0.36

*Among students who are sexually active

** aOR = adjusted odds ratio, adjusted for age, gender, ethnicity and socioeconomic deprivation

Significant numbers of students who attended a place of worship reported engaging in risk behaviours (Table 4). The most prevalent risk behaviour was sexual intercourse (29%), followed by binge drinking (28%), inconsistent contraception and condom use among those who reported current sexual activity (13%), frequent alcohol use (13%), cigarette use (12%) and risky motor vehicle use (11%). Less common risk behaviours for students who attended a place of worship were symptoms of depression (10%), suicide attempts (4%) and use of marijuana (2%). Female students were more likely to report higher levels of inconsistent contraception use, cigarette use, depressive symptoms and suicide attempts, compared to male students.

Higher levels of spirituality were associated with a significant reduction in the likelihood of engaging in many health risk behaviours (Table 5). Students who reported high levels of spirituality were less likely to report having had sexual intercourse compared to students with lower levels of spirituality (21% vs. 36%, OR 2.3 95% CI = 1.8 – 3.0). However, among students who were already sexually active and indicated

high levels of spirituality, students with high spirituality were three times more likely to have inconsistent contraceptive use (21.4%) compared to those who were sexually active with low levels of spirituality (7.7%, OR = 0.5, 95% CI = 0.3 – 0.8).

The relationship between spirituality and depressive symptoms was less clear. Among students with low levels of spirituality, 11.1% had significant depressive symptoms, which was a similar rate to students with medium levels of spirituality (11.4%). Among students who reported high levels of spirituality, 8.5% reported high levels of depressive symptoms. After controlling for demographic variables in the adjusted models, students with low levels of spirituality were 1.5 times (95% CI = 1.1 – 2.1) more likely to report high levels of depressive symptoms compared with students with high levels of spiritual beliefs. Similarly, the relationship between the levels of spirituality and suicide showed that among students with low spirituality, 3.5% had made a suicide attempt in the previous year, compared to 5.1% of students with medium levels of spirituality and 3.7% of students with high levels of spirituality. In the adjusted models there was a trend towards fewer suicide attempts among students with medium and high levels of spiritual beliefs compared with students with low levels of spiritual beliefs (p = 0.038).

Similar results were found with respect to a student's connection to their religious community. Students who report high levels of connection to a religious community were less likely to report frequent use of alcohol (p<0.001) or binge drinking (p<0.001), less likely to be currently smoking cigarettes (p<0.001) and less likely to report risky motor vehicle use (p<0.001) than students who reported lower levels of connection to a religious community (Table 6). Students who reported high levels of connection to a religious community were also less likely to report having had sexual intercourse (23%) compared with students with lower levels of connection to a religious community (36%). In contrast, young people who were sexually active and indicated high levels of connection to a religious community were three times more likely to have inconsistent contraceptive use, compared with those who were sexually active with low levels of connection to a religious community (p = 0.001).

Among students with low levels of connection to a religious community, 12.6% had significant depressive symptoms compared with 7.5% of students who reported high levels of connection to a religious community (OR = 1.8, 95% CI = 1.3 – 2.5, p = 0.001). Students with low connection to a religious community were associated with more suicide attempts (5%) compared with students who had high levels of connection to a religious community (4%, OR = 1.5, 95% CI = 1.0 – 2.3).

The results of the combined spirituality and connection to a religious community variable and the association with student risk behaviours and emotional health concerns are shown in Table 7. The most protective combination was the high spiritual beliefs and high connection to a religious community group which was associated with less frequent use of alcohol (6.9%), marijuana (1.6%) and cigarette use (8.5%), fewer episodes of binge drinking (16.6%), less risky motor vehicle use (9.2%) and less likelihood of engaging in sexual activity (21.8%). These students were also less likely to report significant depressive symptoms than students in the other groups (8.2%). There were few differences between students who reported low connection/high spirituality, high connection/low spirituality or low connection/low spirituality among any of the risk behaviours or emotional health concerns.

Discussion

This study shows that 56.9% of young people attended a place of worship in the last year, with 74.1% identifying as Christian, Protestant or Catholic. Similarly, international literature, predominately from America and the United Kingdom, shows a high percentage of adolescents who state that religion is important in their life (85–95%), with over 50% attending religious services at least monthly and participating in religious youth groups, and almost half frequently praying alone (Smith 2001; Smith & Denton 2005).

This study has examined the associations between spirituality, religion and various health risk behaviours, including mental health concerns, among a representative sample of secondary school students in New Zealand. While the measurement and understanding of spirituality and religiosity is complex, the results demonstrate that among students who attend a religious community, students need to feel connected to their religious community as well as hold personal spiritual beliefs for there to be a protective effect on their risk behaviours and emotional wellbeing. Such students report less participation in many health-risking behaviours and experience fewer emotional health concerns.

These results are consistent with previous literature, where young people who strongly identify with a religious community have lower rates of tobacco, alcohol and marijuana use (Cotton et al. 2006; Sinha, Cnaan & Gelles 2007), lower levels of depressive symptoms (Kang & Romo 2011) and better psychosocial adjustment (Sallquist et al. 2010). Involvement in religious communities provides opportunities for young people to be exposed to prosocial activities, caring adults, moral values and spiritual teachings, all of which enhance the resilience of a young person (Kang & Romo 2011). Religious communities also provide opportunities for adolescents to learn self-regulating behaviours and self-control regarding alcohol and other drug use (Jang & Johnson 2001; Johnson et al. 2000; Miller & Thoresen 2003; Novak & Clayton 2001). Equally, parental religiosity, the quality of family relationships and the traditional family structure influences the religiosity of the offspring, thereby impacting positively on moral and value development (Myers 1996). Overall there is a marked reduction across a number of risk behaviours thereby supporting Jessor's problem behaviour theory, which states that risk behaviours are correlated and so the protective effects of religious attendance can foster pro-social behaviours and impact on multiple areas of risk-taking (Jessor 1991).

However, the current study also found that among students who were already sexually active, students who reported high levels of spirituality and high connection to a religious institution were less likely to use contraception consistently, compared with students who reported low connection to spirituality and low connection to a religious institution. This trend has also been observed internationally, where frequency of attendance at religious services and religious affiliation made little impact on sexual behaviours once intercourse has already begun (Brown, et al. 2001; Jones, Darroch & Singh 2005; Mason & Windle 2001; Penfold, van Teijlingen & Tucker 2009; Vesely et al. 2004). Furthermore, studies regarding abstinence programs which advocate that "true love waits" show that the majority of young people who make an abstinence pledge are pre-pubescent and have not yet considered sexual activity; are likely to lose their virginity at a later age than non-pledgers; have fewer sexual partners; are less likely to "cheat" on their partners; and are more likely to acquire a sexually-transmitted infection due to lack of condoms in their first sexual encounters (Regnerus 2007; Whitehead,

Wilcox & Rostosky 2001). The abstinence program can also be viewed within a social control theory, in that it is presumed that the norm is that adolescents naturally gravitate towards sexual activity, therefore creating an abstinence program to steer them away is of benefit to curb this natural behaviour (Regnerus 2007). Bearman and Brückner (2001) suggest that young people who break pledges are unlikely to be prepared, as sexual intercourse was not planned, and for these young people to consider using contraception in subsequent sexual encounters is a significant alteration in their core values instilled in them by parents, friends and the religious communities to which they belong (Laumann et al. 1994).

One possible explanation for these observations is that religious institutions have little impact on peer influences outside the religious institution, and therefore any influence the religious institution may have on sexual behaviours and sexual restrictions is mitigated (Brewster et al. 1998; Holder et al. 2000). It is likely that religious communities that advocate for delaying sexual intercourse until marriage have limited understanding of the significant number of religious young people engaging in sexual behaviour. Furthermore, the moral conflict, guilt and shame of older adolescents over sexual encounters could result in them avoiding places of worship rather than confronting their guilt weekly. This would provide a rationale for the decline in older adolescents regularly attending a place of worship.

Hird and Jackson (2001) have also suggested that young people's sexual experiences occur as a result of coercion by males who define their masculinity through their desire to engage in sexual activity. In contrast, young females are expected to desire intimacy through touch and not sexual intercourse; as a result, females participating in sexual activity in which they relinquish their virginity may be viewed as having "loose morals" (Hird & Jackson 2001).

While it is appropriate that religious organisations have values and expectations of their youth, there must be opportunities for young people to discuss and learn about contraception and sexual behaviours and have facilitated access to non-judgmental sexual and reproductive health services when required.

These findings suggest that religious communities may provide a positive context for young people's healthy development. While the sample is restricted to those young people who attend and participate in religious communities, the results also are important for the wider community because they suggest ways in which young people may be protected from engaging in risk behaviours.

Limitations of current research

As the study design was cross-sectional, it does not provide information about causation or directionality. Further research using a longitudinal design could explore how young people utilise their spiritual beliefs and connection to religious communities over time to cope with adversities (Cotton et al. 2006). Another limitation was the measurement of spirituality and the exclusion of those who do not attend a religious community yet may have a spiritual aspect to their being. In future research, it would be helpful to explore in more depth those students who are spiritual, but do not attend religious communities. The current study did not consider ethnic variations in relation to sexuality, spirituality and religiosity, which are important given the overlay between cultural and spiritual beliefs. Finally, this study only included students who were present on the day of the survey. Those students who may have been truant, stood down or sick on the day could not contribute and are likely to have increased risk-taking behaviours.

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