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Is Religion Good for Adolescent Health?

A National Study of American
High School Seniors

by John M. Wallace, Jr.

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Is Religion Good for
Adolescent Health?

A National Study of American
High School Seniors

John M. Wallace, Jr., Ph.D.
Associate Professor of Social Work
University of Pittsburgh, School of Social Work
Non-Resident Fellow
Baylor Institute for Studies of Religion

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a b s t r a c t

Although past research has long documented religion's positive impact on adult health-related behaviors and outcomes, relatively little research has examined the relationship between religion and adolescent health. This study uses data from nationally representative samples of American high school seniors to examine the relationship between religion and behavioral predictors of adolescent illness and premature death. The results of the study indicate that relative to their peers, religious youth are less likely to engage in behaviors that compromise their health (e.g., carrying weapons, getting into fights, drinking and driving) and are more likely to behave in ways that enhance their health (e.g., proper nutrition, exercise, and rest).

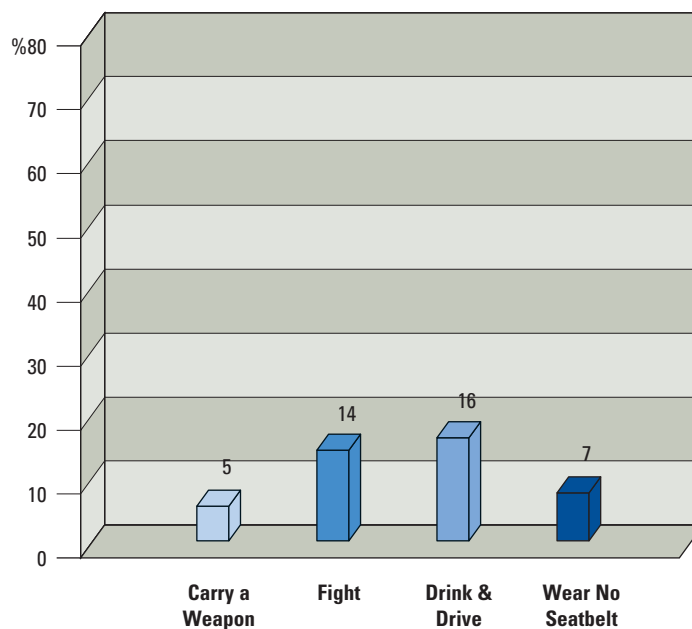## Adolescent Behavior and the Leading Causes of Sickness and Death in America

Historically, infectious diseases were the leading causes of sickness and death among Americans; today, however, the leading causes of illness and premature death include heart disease, cancer, stroke, accidents, suicide, diabetes, and chronic liver disease—outcomes that result largely from social and behavioral causes.[1]

   Although the negative health consequences that many Americans experience do not fully manifest themselves until middle and later adulthood, the behaviors that cause them (e.g., smoking) are typically initiated during adolescence. The adolescent behaviors that are often responsible for premature sickness and death can be grouped into four general categories: 1) behaviors that result in unintentional and intentional injury, 2) substance use (alcohol, tobacco and illicit drugs), 3) sexual activity, and 4) dietary patterns and physical inactivity.[1,2]

Behaviors that Result in Unintentional and Intentional Injury

Injury is the number one cause of death among American youth and a significant cause of adolescent illness. Unintentional injuries account for more than 60 percent of all injury deaths among American teenagers.[3] Leading causes of unintentional injury include motor vehicle accidents, drowning, firearms, poisons, and fires.[4] Nationally, 73 percent of unintentional injuries among young people are attributable to motor vehicle accidents.[5] Behaviors that increase adolescents' risk for motor vehicle injury and death include failure to use seat belts, driving under the influence of alcohol or other drugs, or riding in a vehicle when the driver has been drinking or using other drugs.

Intentional injuries, specifically homicide and suicide, are the second and third leading causes of death among adolescents, respectively.[4] Firearms account for the majority of homicide and suicide deaths. Key behavioral risk factors for intentional injury mortality include carrying firearms and other weapons, fighting, and attempting suicide.

Figure 1 shows the percentage of American high school seniors who engage in key behavioral risk factors for unintentional and intentional injuries. More specifically, the figure shows the percentages of high school seniors who have carried a weapon to school in the past month, who have been in a serious fight in the last year, who have driven a motor vehicle after drinking alcohol within the past two weeks, and who never wear a seat belt when they operate a motor vehicle.
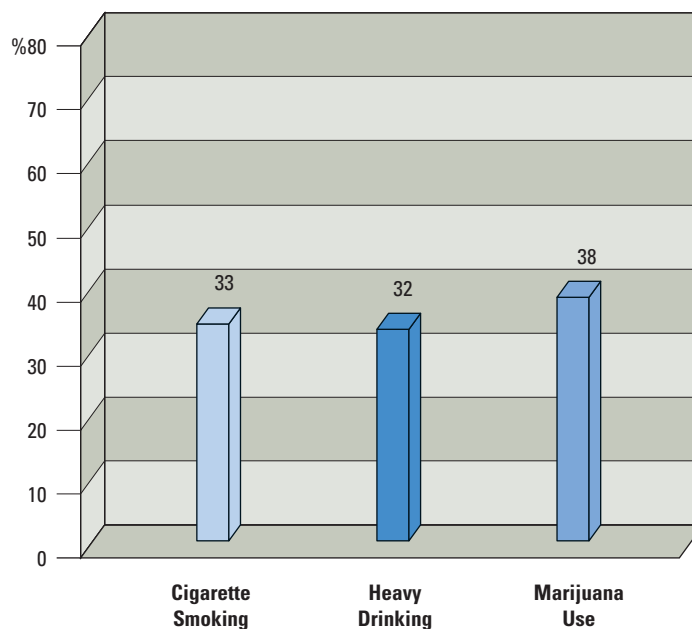
The data presented in Figure 1 indicate that significant proportions of America's young people place themselves at risk for injury related to interpersonal violence and for motor vehicle crashes.

Substance Use

Tobacco use is America's greatest preventable cause of morbidity and mortality. Each year, the use of tobacco results in 434,000 deaths, 5 million years of potential life loss and $68 billion in health care costs.[1, 6, 7] In fact, each of the three leading causes of death among adults—heart disease, cancer, and stroke—are related to tobacco use, a behavior that 82 percent of adult daily smokers initiated before they were 18.[6]

Alcohol and other drug use are also important health behaviors related to adult and adolescent sickness and death. Alcohol and illicit drugs are responsible for approximately 120,000 premature deaths each year.[1] As noted above, alcohol and other drug use are key predictors of the leading cause of adolescent mortality— motor vehicle injuries—as well as other injuries and illnesses. Nationally, adolescent use of alcohol is widespread, and there is evidence that the use of illicit drugs, particularly marijuana, may be on the rise.[8]

Figure 2.   **American High School Seniors and Substance Use**

The data presented in Figure 2 reveal that one-third of America's high school seniors are current cigarette smokers (i.e., any use within the last month), one-third are heavy drinkers (i.e., have had 5 or more drinks in a single sitting within the last two weeks), and nearly 4 in 10 used marijuana in the past year.

Sexual Activity

Precocious adolescent sexual activity has serious implications for adolescent and adult health. The health consequences of adolescent sexual involvement include increased risk for pregnancy, sexually transmitted diseases (including HIV), and other maladies such as cancers of the cervix and uterus. [1, 9]
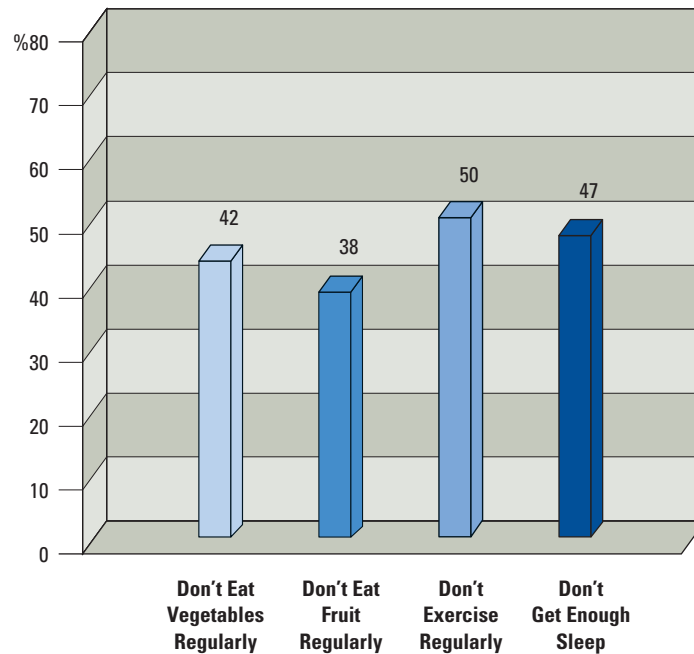
Although data from the Monitoring the Future survey does not ask questions about adolescent sexual behavior, data from the Youth Risk Behavior Survey indicate that sexual activity is high among American high school students. For example, 50 percent of 9th to 12th graders report that they have had sexual intercourse at least once in their lifetime, 16 percent report that they have had four or more sexual partners, and 36 percent report that they have had sexual intercourse during the past three months. [2] Among adolescents who are sexually active, the percent not using a condom (42 percent) and not using birth control pills (85 percent) during their most recent intercourse experience are high. [2]

Diet and Physical Activity

Dietary and physical activity patterns developed during adolescence often persist into adulthood and, in turn, significantly impact adult mortality and morbidity. In fact, second only to tobacco use, diet and physical activity patterns are the leading cause of death among adults, accounting for an estimated 300,000 deaths annually. [1]

Recent research indicates that American young people are becoming increasingly sedentary and less likely to eat properly. [2] These patterns often carry into adulthood, resulting in illnesses like heart disease, stroke, various cancers, and diabetes.

Figure 3. American High School Seniors
and Diet and Physical Activity

Figure 3. American High School Seniors and Diet and Physical Activity

Data from the nation's high school seniors, presented in Figure 3, suggest that approximately 40 to 50 percent of high school seniors do not eat fruits and vegetables regularly, exercise regularly, or regularly get sufficient amounts of sleep (i.e., 7 hours per night).

Religion and Adolescent Health Research: The State of the Field

Recognizing the shift from biomedical to social and behavioral causes of sickness and death, researchers have increasingly sought to identify social and behavioral factors that protect health and promote physical well-being.

In their search, researchers have discovered that religion appears to have a positive impact on health. [10-12] In fact, systematic reviews of the research literature reveal over 300 studies that document a positive association between religion and physical health. [10, 13]

Although some researchers [14, 15] have identified "lack of religiosity" or "low religiousness" as a risk factor for adolescent health risk behaviors, religion measures are not routinely included in adolescent research, and research that explicitly examines religion and health among young people is relatively rare. [16]

Research that does examine the relationship between religion and adolescent health typically conceptualizes religion as a "social control" against delinquent behavior, but gives relatively little attention to the potential health preventive, promotive, or enhancing aspects of religion identified in the adult literature. [17-19]

The explanation for researchers' apparent lack of interest in the relationship between religion and adolescent health is unclear. Whatever the explanation, however, the lack of research is surprising given 1) a large and growing body of research on the relationship between religion and health among adults; and 2) strong empirical evidence that many causes of adult sickness and death directly result from behavior patterns initiated during adolescence. [1]

Measuring the Religious Commitment of American Youth: Attitude, Behavior, and Religious Affiliation

Before looking at the relationship between religion and adolescent health, an important question to ask is, How religious are America's young people? Past research suggests that American youth exhibit high levels of pro-religious beliefs, attitudes, and behaviors.[20]

For example, 95 percent of American teenagers ranging in ages from 13 to 17 believe in God, 76 percent believe that God observes their actions and rewards or punishes them, 93 percent believe that God loves them, 91 percent believe in heaven, 76 percent believe in hell, and 86 percent believe that Jesus Christ is God or the Son of God.[20] Eighty percent of American teenagers say that religion is at least fairly important to them and 40 percent report that they very much try to follow the teaching of their religion. Ninety-three percent report being affiliated with a religious group or denomination (59 percent Protestant, 30 percent Catholic, 1 percent some other Christian denomination, 2 percent Jewish, 1 percent some other affiliation).[20]

In addition to reporting relatively high levels of religious belief and affiliation, significant portions of the American youth population indicate that they regularly engage in religious practices. For example, 42 percent of teenagers report that they frequently pray alone, 36 percent report that they read the Bible weekly or more, 41 percent report that they are currently involved in Sunday School, 36 percent say they are involved with a church youth group, 23 percent indicate involvement in church-sponsored activities to help the less fortunate, and 18 percent are involved in a church choir or music group.[20]

As suggested by the various measures discussed above, religion is a multi-dimensional construct. Consistent with this perspective, the Monitoring the Future dataset includes multiple indicators of religiosity including attitudinal, behavioral, and organizational measures. The attitudinal measure asks young people about the importance of religion in their life, the behavioral measure asks them how frequently they attend religious services, and the organizational measure asks them with what religious denomination (if any) they are affiliated (see the Appendix for exact question wording).

Importance

How important is religion in high school seniors' lives? Figure 4 presents data that address this question.

One-third of seniors indicate that religion is a *very* important part of their life; one-third say it is *pretty* important; a quarter say it is a *little* important, and only 12 percent indicate that religion is *not* an important part of their life (see Figure 4).

Attendance

In addition to importance, attendance at religious services is another potentially relevant indicator of the role of religion in the lives of young people and their families.

Figure 5 shows the frequency of seniors' attendance at religious services. The data show that one-third of seniors attend weekly or more, approximately one-fifth attend once or twice a month, one-third rarely attend, and one in seven never attend.

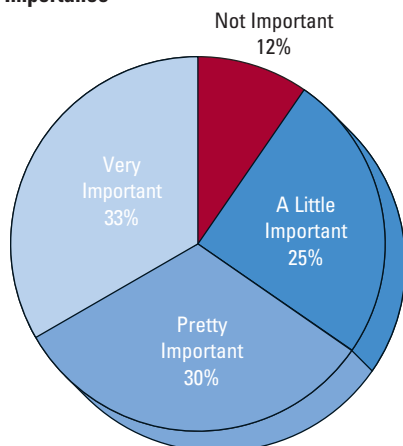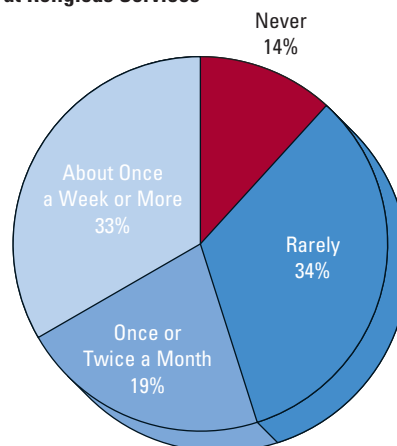**Figure 4.** American High School Seniors and Religion: Importance

Not Important
12%

Very Important
33%

A Little Important
25%

Pretty Important
30%

Figure 5. American High School Seniors and Religion: Attendance at Religious Services

Never
14%

About Once a Week or More
33%

Rarely
34%

Once or Twice a Month
19%

Affiliation

Past research suggests that most Americans claim affiliation with a religious denomination or organization. Consistent with this research, the data presented in Figure 6 reveals a relatively high level of religious affiliation among high school seniors.

Approximately 4 out of 10 seniors are affiliated with theologically conservative religious denominations (e.g., Baptists), roughly 1 in 8 are affiliated with theologically moderate denominations (e.g., Lutheran), 1 in 3 belong to theologically liberal denominations (e.g., Episcopalian), and 15 percent indicate that they are not affiliated with any particular religion (see Figure 6).
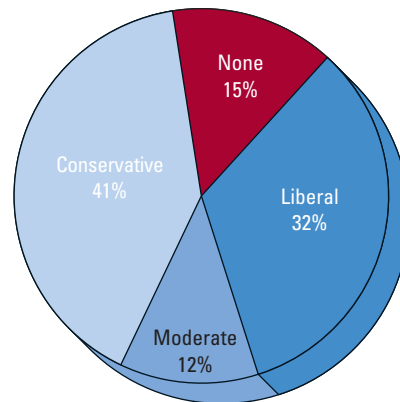
Exploring the Relationship Between Religion and Adolescent Health Behavior

The extent to which young people engage in behaviors that either compromise or enhance their health can be viewed as the result, at least in part, of their socialization. Health behavior socialization is a process that begins in childhood, extends through adolescence, and ultimately influences adult behavior, including behavior that results in illness and death.[16]

Although parents and other family members are typically young people's first and primary source of socialization into the norms and values of the larger society, religion often operates as a key secondary socialization influence that is integral to parents' belief systems and that assists them as they seek to instill their beliefs, values, and desired lifestyle patterns into their children.

The variables typically used to measure adolescent religiosity, particularly denominational affiliation and religious attendance, are often under the control of parents and reflect the types of doctrinal beliefs, information, education, and interpersonal influences to which parents want their children exposed.

Figure 6. American High School Seniors and Religion:
Affiliation with a Religious Denomination

Past research suggests that the impact of religion on adolescent morbidity and mortality is primarily indirect, through a number of different pathways. For example, religion can act as a source of social support, social control, individual and group identity, values and, perhaps most importantly, as a key influence on health-related behaviors, which in turn relate to adolescent health outcomes and, ultimately, adult health outcomes.

The relationship between religion, health behaviors, and health outcomes results not simply through religion's constraining function, or what it **proscribes**, but also through what it encourages or **prescribes**. As noted by Northcutt and Jarvis:[21]

> *Religious prescriptions for healthy behavior might include encouragement to eat healthy, nutritious foods; the promotion of proper rest, exercise, and knowledge about bodily functions. On the other hand, proscriptions of unhealthy behaviors might include prohibitions against the use of tobacco, alcohol, and/or other harmful drugs, and the discouragement of immoderate activities such as promiscuous sex. Further, a religion which believes in the sanctity of the body may lead its members to avoid activities which have a high probability of injuring the body (p. 813: 1987).*

One of the central purposes of this report is to explore two related questions: Are religious youth **less** likely than nonreligious youth to engage in behaviors that are potentially detrimental to their health? Are religious youth **more** likely than their nonreligious counterparts to engage in behaviors that can enhance their health?

In general, the answer to both of these questions is yes. Data for the relationship between the religion measures and the specific health behaviors are presented below.

Unintentional and Intentional Injuries

Figures 7, 8, and 9 present the relationship between the injury-related behaviors and the religious importance, attendance, and denomination measures, respectively.

Figure 7. Injury-Related Behavior among High School Seniors and Importance of Religion
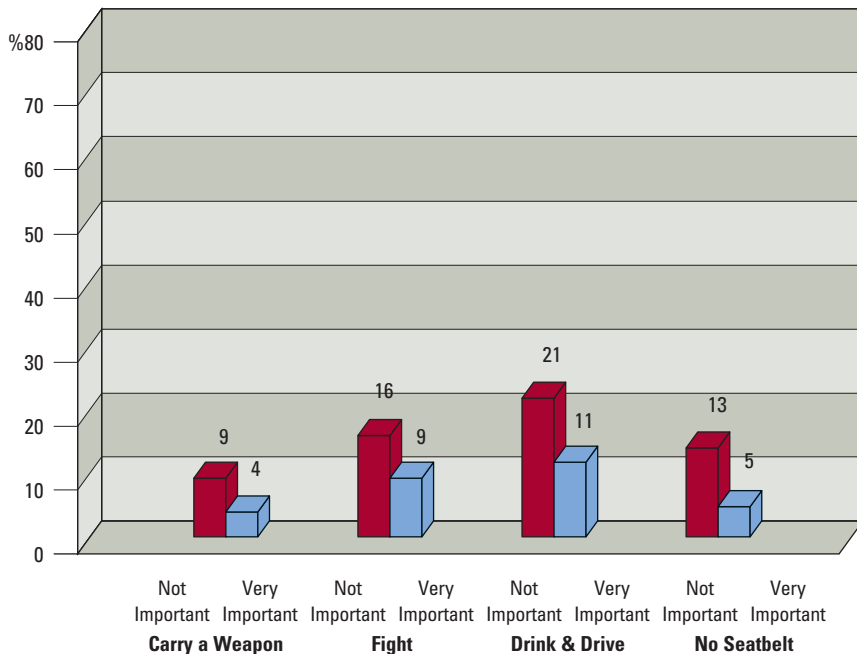

%80
70
60
50
40
30
20
10
0

Carry a Weapon		Fight		Drink & Drive		No Seatbelt	
Not Important (9)	Very Important (4)	Not Important (16)	Very Important (9)	Not Important (21)	Very Important (11)	Not Important (13)	Very Important (5)

Figure 8. Injury-Related Behavior among High School Seniors and Religious Service Attendance

%80
70
60
50
40
30
20
10
0

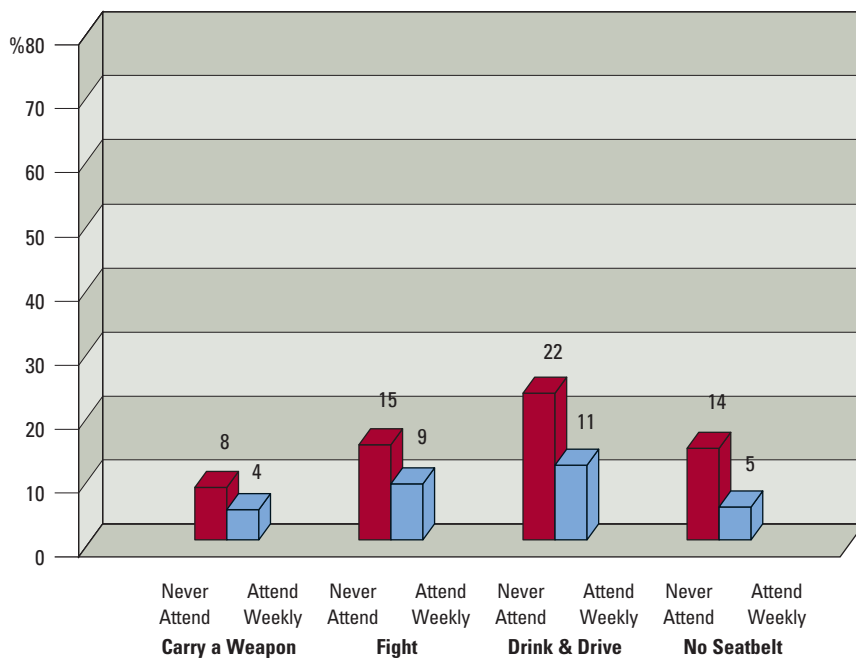| Carry a Weapon		Fight		Drink & Drive		No Seatbelt	
Never Attend (8)	Attend Weekly (4)	Never Attend (15)	Attend Weekly (9)	Never Attend (22)	Attend Weekly (11)	Never Attend (14)	Attend Weekly (5)

Figure 9. Injury-Related Behavior among High School Seniors and Religious Affiliation
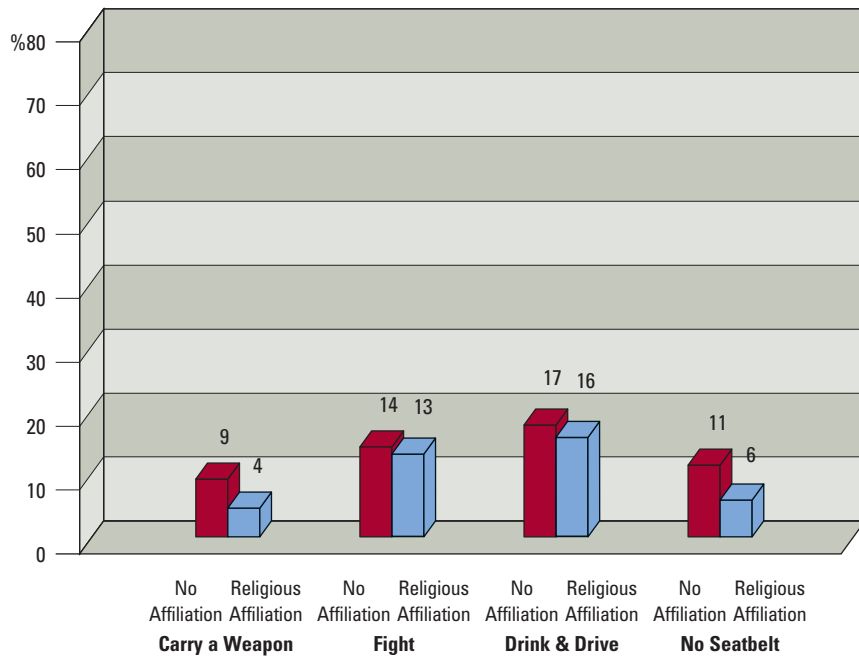

Figure 7 compares injury-related risk behavior for seniors for whom religion is "very" important and those for whom religion is "not" important. The data indicate that seniors for whom religion is a very important part of their lives are significantly less likely than their peers for whom religion is not important to engage in injury-related risk behaviors.

In fact, seniors for whom religion is very important are, on average, only half as likely to engage in injury-related behaviors as their counterparts for whom religion is not important.

Figure 8 compares injury-related risk behavior for seniors who attend religious services weekly or more and seniors who never attend religious services.

Consistent with the findings for the importance measure, the data presented in Figure 8 indicate that seniors who regularly attend religious services are significantly less likely than seniors who never attend religious services to have carried a weapon to school, to have been in a serious fight, to have driven a car after drinking alcohol, and to never wear their seatbelt.

The third religion measure—denominational affiliation—also relates to injury-related behaviors.

The data presented in Figure 9 shows that seniors who belong to religious denominations are significantly less likely than seniors who are not affiliated with any religious group to have carried a weapon, to have driven after drinking, or to never wear their seatbelts.

Although the percentage of seniors belonging to religious denominations who report having been in a serious fight is lower than the percentage of seniors with no religious affiliation to have done so, the difference is not statistically significant.

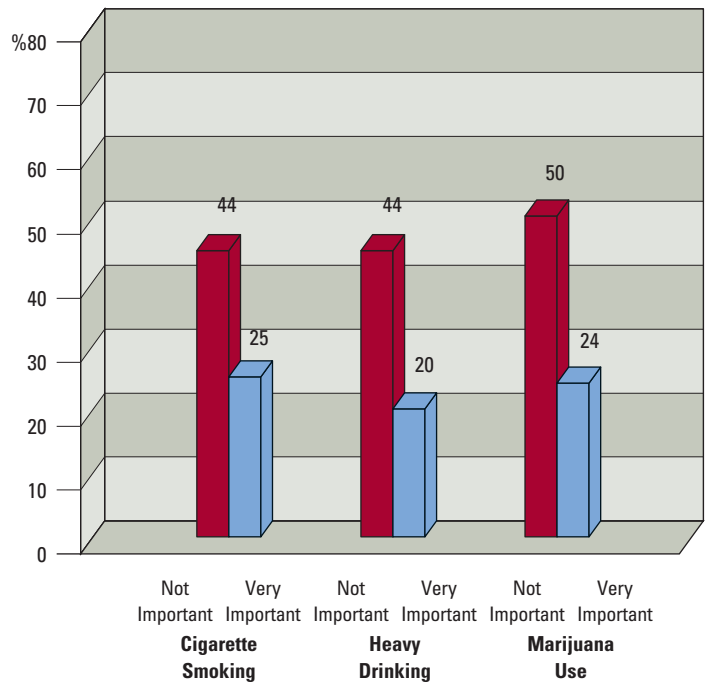**Figure 10.** Substance Use among High School Seniors and Importance of Religion

	Cigarette Smoking		Heavy Drinking		Marijuana Use	
	Not Important	Very Important	Not Important	Very Important	Not Important	Very Important
%	44	25	44	20	50	24

Figure 11. Substance Use among High School Seniors and Religious Service Attendance

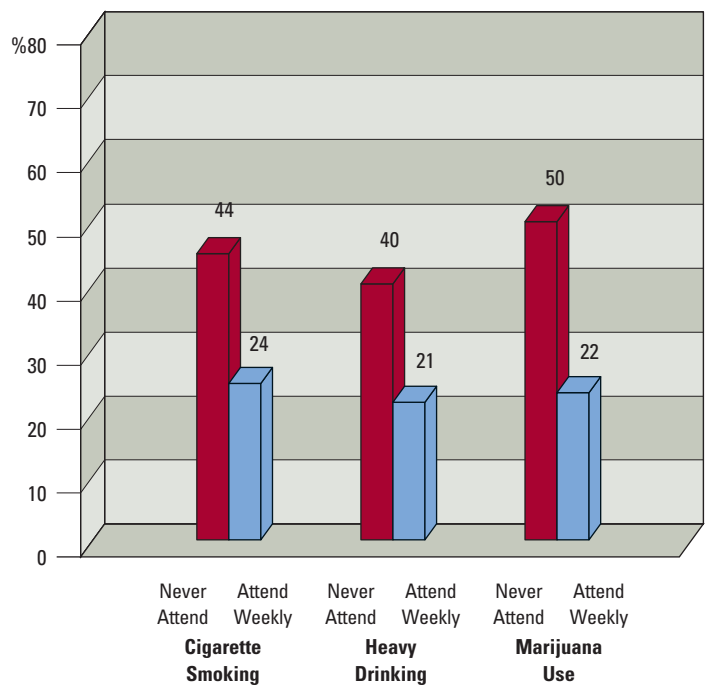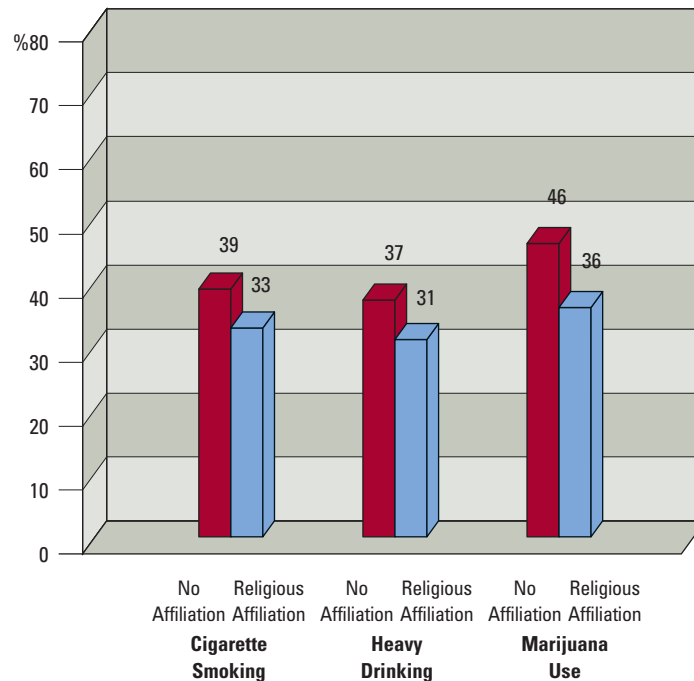|	Cigarette Smoking		Heavy Drinking		Marijuana Use	
	Never Attend	Attend Weekly	Never Attend	Attend Weekly	Never Attend	Attend Weekly
%	44	24	40	21	50	22

Figure 12. Substance Use among High School Seniors and
Religious Affiliation

Substance Use

Cigarette use, heavy episodic drinking, and marijuana use are all related to both short-term as well as long-term health problems, physical and psychological addiction, and elevated risk for premature death.

Although most religious groups discourage the use of tobacco and heavy alcohol use, virtually all are against the use of marijuana (and other drugs) by virtue of their illegal status. Accordingly, it was expected that the religion measures would relate negatively to each of the drug use measures.

In line with this expectation, the data in Figure 10 reveals large differences in the percentages of high school seniors who use drugs, based upon whether they feel religion is a "very important" part of their life or "not" an important part of their life.

For example, although more than 40 percent of seniors for whom religion is not important smoke, drink heavily, and use marijuana, 25 percent or fewer of seniors for whom religion is very important use substances.
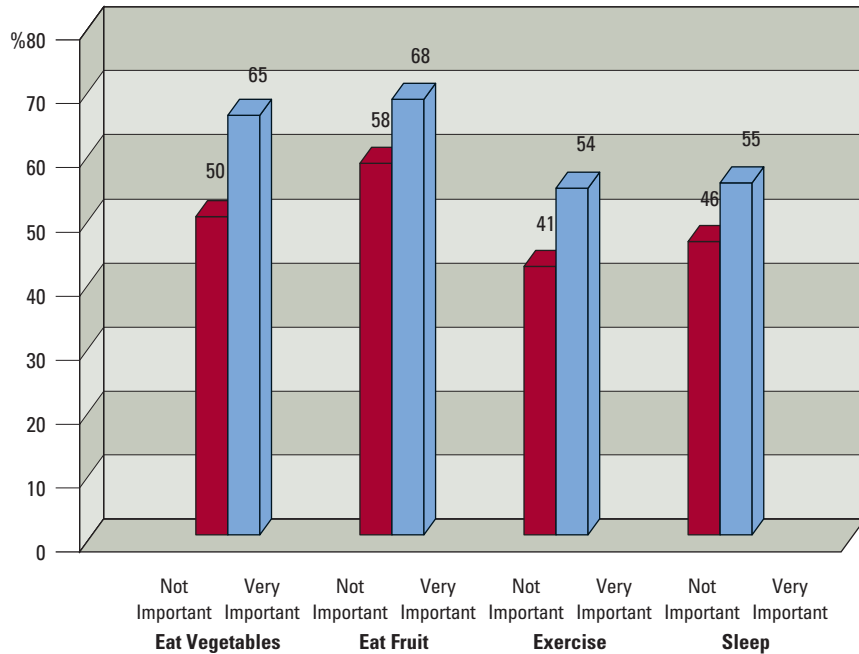
The data on the relationship between religious attendance and substance use also confirm that religious young people are less likely to use drugs than are those who are not religious.

Figure 11 shows the drug use prevalence by frequency of attendance at religious services. This figure shows that seniors who attend church weekly have significantly lower tobacco, alcohol, and marijuana prevalence rates than those who never attend religious services.

Figure 12 shows the drug use prevalence rates for seniors who belong to religious denominations and for those who are not affiliated with any religious group.

Although the magnitudes of the differences between the two groups are not as large as the differences observed in Figures 10 and 11, they are nonetheless statistically significant, with seniors who are affiliated with a denomination being less likely to use marijuana than those who are unaffiliated with a religious denomination.

Lifestyle Behaviors

Dietary factors and physical activity patterns are the second leading cause of mortality among Americans, account-
ing for at least 300,000 deaths annually.[1] Many of the dietary and activity patterns that are developed
during adolescence continue into adulthood. Accordingly, adolescent diet, exercise, and rest patterns are impor-
tant to investigate as precursors to adult behaviors.

The health behaviors examined in this section include whether students eat fruit most/every day,
eat vegetables most/every day, exercise most/every day, and get 7 hours of sleep most/every day. The research
question addressed below is, Does religion, as measured by importance, attendance, and denominational
affiliation, promote healthy lifestyle behaviors?

Figure 13 shows the relationship between the religious importance measure and the four health behavior
measures. Relative to seniors for whom religion is not important, those who say that religion is very important are
significantly more likely to regularly eat vegetables, eat fruit, exercise, and get at least 7 hours of sleep.

Figure 14 shows similar findings for the relationship between the health behaviors and attendance at religious
services; seniors who attend religious services weekly are more likely to engage in each of the health-promoting
behaviors than are seniors who never attend religious services.

Although the differences are not large, seniors who belong to religious denominations are significantly
more likely to eat vegetables, to exercise, and to get a sufficient amount of sleep than seniors who are religiously
unaffiliated (see Figure 15).

Figure 14. Lifestyle Behaviors among High School Seniors
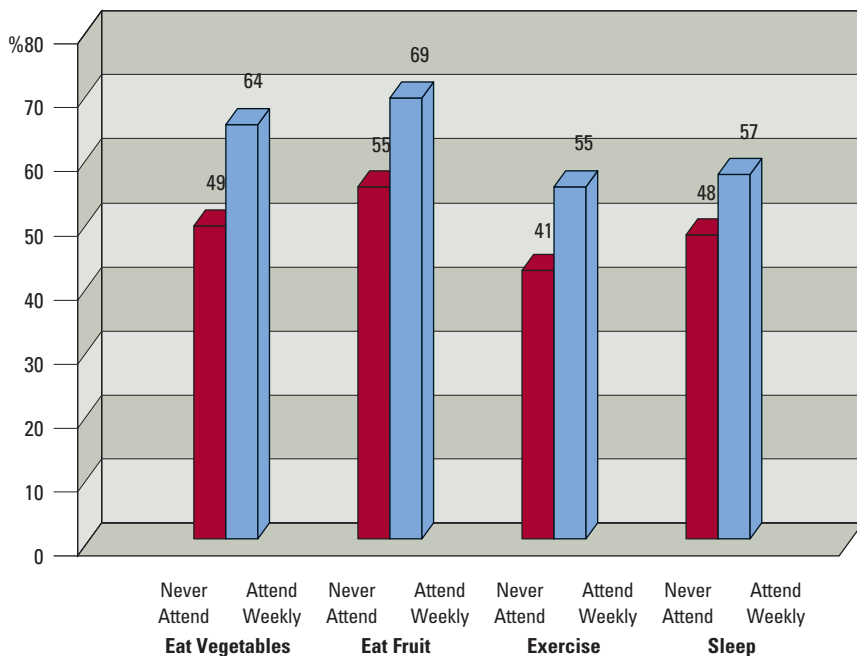and Religious Service Attendance

	Never Attend	Attend Weekly
Eat Vegetables	49	64
Eat Fruit	55	69
Exercise	41	55
Sleep	48	57

Figure 15. Lifestyle Behaviors among High School Seniors
and Religious Affiliation

	No Affiliation	Religious Affiliation
Eat Vegetables	52	60
Eat Fruit	59	64
Exercise	42	52
Sleep	45	53

A Quarter Century of Measuring the Relationship Between Religion and Adolescent Health Behavior

Has religion promoted adolescents' health over time? To address this question I combined the religious importance and religious attendance measures to create a "religiosity" index; I then plotted the percentages of seniors who engaged in selected injury, substance use, and health-promoting behaviors by their level of religiosity. The results of these analyses are presented in Figure 16.

Injury

The top graph in Figure 16 indicates that highly religious seniors have been significantly less likely than those with lower levels of religiosity to have gotten into a serious physical fight in the last year and that this pattern has been consistent over the past quarter century. The largest differences in the percentages of students who have been in a serious fight have been between those students who are highly religious and those who are lowest in religiosity.

Substance Use

The middle graph in Figure 16 shows the relationship between seniors' religiosity and their annual marijuana use from 1976 through 2000. During this time period there have been important changes in marijuana use patterns, with large percentages of seniors having used marijuana at different points in time. Looking at the data across levels of religiosity, the figure reveals that highly religious seniors have been relatively unaffected by the broad societal level changes in marijuana use; their use has remained relatively low irrespective of the behaviors of the rest of the population.
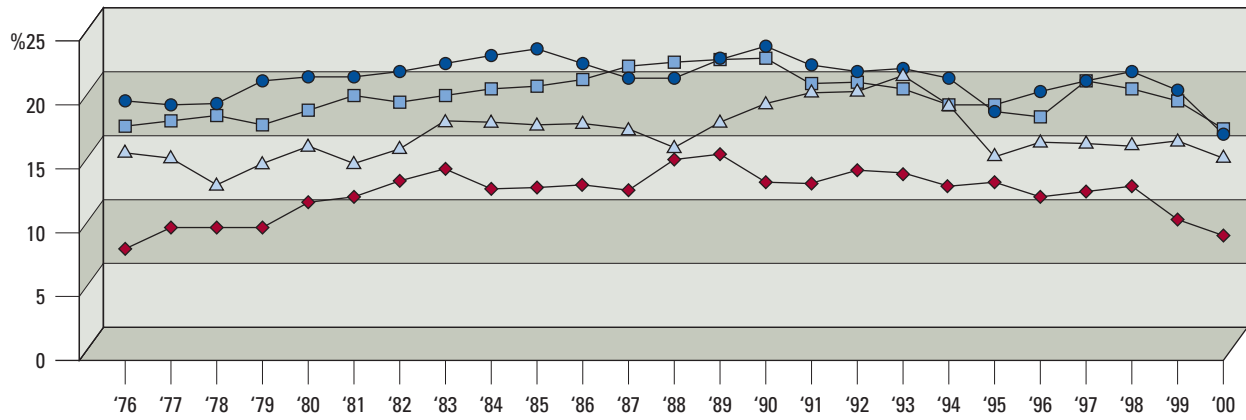
Health Behavior

The final graph in Figure 16 presents the relationship between seniors' level of religiosity and the percentage of them who get an adequate amount of sleep (7 or more hours) per night. The data reveal that there has been a decline in the percentage of students who get sufficient amounts of sleep, across levels of religiosity. Nevertheless, young people who are highly religious are significantly more likely than their less religious counterparts to get adequate rest.
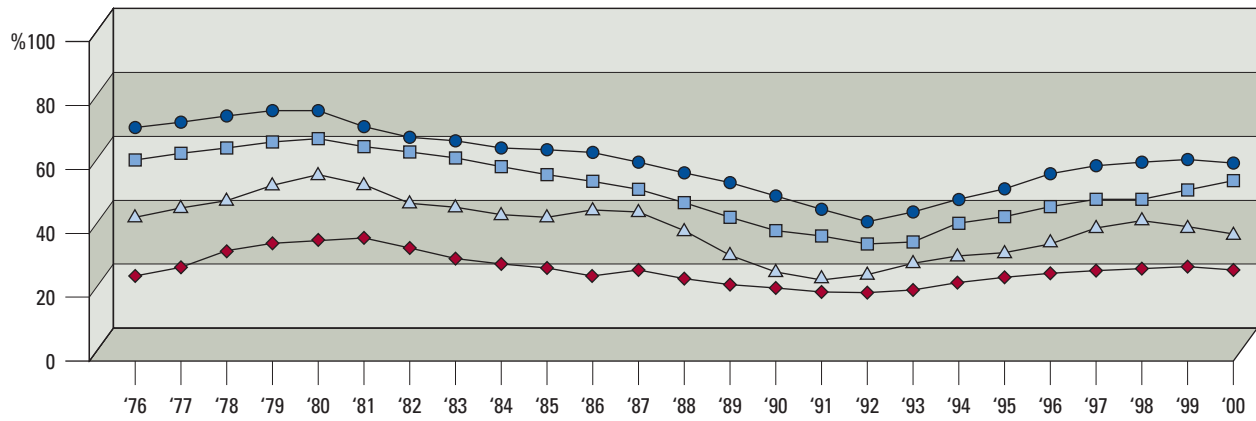
Discussion

Although there is a large and growing body of research on the relationship between religiosity and adults' health, few studies have investigated the relationship between religion and a broad range of health behaviors among adolescents.[24] Research that does explore the relationship between religion and adolescent health typically uses small, non-representative samples, uses poor measures of religion, and emphasizes religion's role only as a constraint against delinquent behavior (e.g., precocious sex and drug use). In an attempt to address some of these limitations, the present study used large, nationally representative samples, multiple measures of religion, and a broad conceptual framework that hypothesizes that religion does not simply constrain behavior, it also encourages or promotes adolescents' involvement in behavior that can protect or enhance their health.

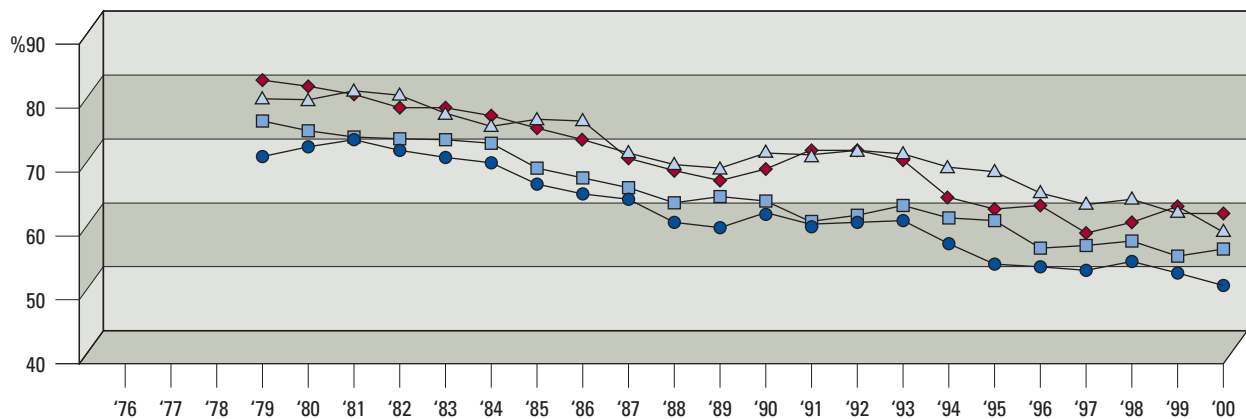**Figure 16.** Fighting by Religiosity, 12th Graders 1976–2000

Annual Marijuana Use by Religiosity, 12th Graders 1976–2000

Sleep by Religiosity, 12th Graders 1979–2000

The results of the study indicate that, on average, seniors who attend church weekly, who report that religion is important to them, and who are affiliated with a religious denomination are *less* likely than other youth to engage in high-risk behaviors and *more* likely to engage in behaviors that promote long-term physical well-being.

In light of the fact that many health-destructive and health-promotive behaviors that impact the long-term physical well-being of adults are initiated during adolescence, the findings of this report have important implications for the future physical and economic health and well-being of the American population.

Although the findings of this study generally support the notion that religion is an important socialization influence in the lives of American young people, the specific mechanisms through which religious attendance, importance, and denominational affiliation relate to various adolescent health outcomes have yet to be determined.

Further, it is not clear that these mechanisms are necessarily unique to religion, per se. For example, in addition to religion, researchers emphasize the importance of peers, school, community, and other more macro-level contexts as secondary socialization influences on adolescents' health behaviors.[16] To the extent that these other socialization influences encourage attitudes and beliefs that discourage risk behaviors and encourage health-enhancing behaviors, the importance of religion may be reduced. However, it should be noted that past research that controlled for various school, peer, and other lifestyle factors suggests that religion is still an important correlate of adolescent health outcomes.[22]

Religion is only one of many important variables that relate to adolescent health behaviors; nevertheless, it is a factor that future research should not ignore. Rather, future research should seek to further specify the mechanisms through which religion relates to adolescent health and the ways in which it may act independent of, in concert with, or in competition against other factors.

While the present study posits that religion influences adolescent health behaviors, future research should consider the possibility that adolescent health behaviors influence religion. For example, in a longitudinal study of late adolescents, Thornton and Camburn[23] found that having positive attitudes toward premarital sex reduced adolescents' attendance at religious services.

Although the present study has identified positive relationships between religious attitudes, religious practices, and health behaviors, it is not clear that other aspects of religion are not important, as these other aspects may negatively impact adolescent health. For example, to the extent that there is a mismatch between young people's personal religious orientation and that of their parents, religion may actually serve as a risk factor for a variety of negative health outcomes. Similarly, the teachings of some religious denominations or sects may expect, if not require, that their adherents not pursue medical treatment, not maintain prescribed health regimens, and not engage in practices that can, at least potentially, protect health.

Conclusion

The fact that churches, synagogues, and mosques have regular access to adolescents, their families, and their peers suggests that religious institutions are a potentially important, albeit often ignored, ally in the nation's efforts to promote the health of the youth of today and the adults of tomorrow. In light of the very real risks that negatively impinge upon the health of many American young people, health practitioners, social workers, clergy, youth service providers, parents, and others concerned about adolescents' health must explore ways in which to work collaboratively to promote the holistic mental, physical, and spiritual well-being of America's youth.

As social work, public health, medicine, and other helping professions seek to better meet the needs of young people through direct practice, research, and education, they should begin to explore beyond their traditional boundaries and pursue the untapped potential that lies in partnerships with religious professionals and religious institutions.

Methods

Sample

Data for this study are drawn from the University of Michigan's Monitoring the Future Project (MTF). The design and methods of the study are summarized briefly below; a more detailed description is available elsewhere.[8] Each year, a three-stage national probability sample is drawn from the 48 coterminous states, and questionnaires are administered in approximately 135 high schools. FISRt, geographic regions are selected; next, schools are selected; and finally, students are selected from within each school. This procedure has yielded nationally representative samples of 15,000 to 19,000 high school seniors annually, since 1975. Sample weights are assigned to each respondent to take into account school sample sizes, as well as variations in selection probabilities that occurred at earlier stages of the sampling procedures.

Data Collection

Students complete self-administered, machine-readable questionnaires during a normal class period. Overall questionnaire response rates average about 84 percent. Absence on the day of data collection is the primary reason that students are missed; it is estimated that less than one percent of students refuse to complete the questionnaire. Six different questionnaire forms are used each year, each administered at random to one-sixth of the sample. Items concerning substance use and sociodemographic measures appear in all forms. However, other items of interest in the present study, such as unintentional and intentional injuries and health-promoting behavior items, appear in only one form; accordingly, analyses presented here are based on a random one-sixth of the total sample. To ensure an adequate number of respondents, we combine data from 1999 and 2000, resulting in a sample of approximately 4,000 students. Analyses of secular trends are based on data from 1976 through 2000. Given the large sample used here, there is the increased likelihood of findings that achieve statistical significance in the absence of being substantively significant. To reduce this likelihood, we generally highlight only those findings that exceed conventional standards for statistical significance (i.e., $p < .01$).

Measures

Independent Variables

Religion, properly understood, is a multidimensional construct. In the present study we consider its attitudinal, behavioral, and organizational dimensions. These dimensions are operationalized using measures of religious importance, attendance, and denominational affiliation, respectively. The specific wording of the religion measures and their associated response categories are as follows: religious importance was measured with a

single item: How important is religion in your life? Possible responses ranged from "not important" (1) to "very important" (4). Religious attendance was also measured with a single item: How often do you attend religious services? Possible responses ranged from "never" (1) to "about once a week or more" (4). Denominational affiliation is measured by the following question: What is your religious preference? Guided by the classification schemes of past research, respondents' denominational affiliation was coded into a four category religious conservatism measure ranging from "no affiliation" (1) to "conservative" (4). The classification scheme of the affiliation measure is as follows: 1 = none; 2 = liberal (i.e., Episcopal, Presbyterian, United Church of Christ, Unitarian, Roman Catholic, Jewish); 3 = moderate (i.e., Disciples of Christ, Lutheran, Methodist, Eastern Orthodox); 4 = conservative (i.e., Baptist, Churches of Christ, Other Protestant, Other Religion, Latter Day Saints, Muslim/Moslem, Buddhist). The correlations between the religion measures are moderate to strong (r =.60 between attendance and importance, r =.32 between the correlation between attendance and religious conservatism, and r =.41 between importance and conservatism).

   Table 1 displays the univariate distributions of the religion measures. The data indicate that approximately half of America's high school seniors are at least somewhat religious, and a third of them can be thought of as being highly religious, with 32 percent reporting that religion is "very important" and 33 percent indicating that they attend religious services "at least once a week." Regarding denominational affiliation, a substantial minority of seniors belong to conservative denominations (41 percent), approximately 1 in 10 (12 percent) belong to moderate denominations, slightly less than a third belong to liberal denominations (32 percent), and approximately 15 percent claim no religious affiliation.

Dependent Variables

The eleven specific health behaviors investigated here are grouped into three broad categories: unintentional and intentional injuries, substance use, and lifestyle behaviors. The specific wording of these measures are presented below.

Unintentional and Intentional Injury

We examine five measures of unintentional and intentional injury: 1) carrying a weapon (i.e., gun, knife, or club) to school; 2) engaging in interpersonal violence; 3) seat belt use; 4) drinking while driving; and 5) drinking while riding. Carrying a weapon was measured by a single item: During the last four weeks, on how many days (if any) were you carrying a weapon such as a gun, knife, or club to school? Possible responses ranged from "none" (1) to "10 or more times" (6). Interpersonal violence averages responses to three items concerning frequency of aggression toward others in the past 12 months (α =.77): During the last 12 months, how often have you: gotten into a serious fight in school or at work? taken part in a fight where a group of your friends were against another group? hurt someone badly enough to need bandages or a doctor? Possible responses ranged from "not at all" (1) to "five or more times" (5). Respondents had to have at least two non-missing responses to receive a valid index score. Frequency of seat belt use is measured by two items (r =.87): When you drive a car, how often do you wear a seat belt? When you are riding in the front passenger seat of a car, how often do you wear a seat belt? Possible responses ranged from "none" (1) to "always" (5). Driving while drinking is measured by two items (r =.76):

During the last two weeks, how many times (if any) have you driven a car, truck, or motorcycle after: drinking alcohol? having 5 or more drinks in a row? Possible responses ranged from "none" (1) to "10 or more times" (6). Riding while drinking is measured by two items (r =.78): During the last two weeks, how many times (if any) have you been a passenger in a car: when the driver had been drinking? when you think the driver had 5 or more drinks? Possible responses ranged from "none" (1) to "10 or more times" (6).

Substance Use

We use three single-item indicators of substance use: 1) current (i.e., past month) cigarette use, 2) binge drinking (i.e., five or more drinks in a row in the past two weeks), and 3) annual marijuana use. Current cigarette use is measured by the following item: How frequently have you smoked cigarettes during the past 30 days? Possible responses ranged from "not at all" (1) to "two packs or more per day" (7). Binge drinking was measured by the following question: In the last two weeks, how many times have you had five or more drinks in a row? Possible responses ranged from "none" (1) to "ten or more times" (6). Annual marijuana use is measured by the following item: On how many occasions (if any) have you used marijuana during the last 12 months? Possible responses ranged from "none" (1) to "forty or more times (7). These are standard self-report measures of substance use and prior research supports their validity.

Lifestyle Behaviors

The three lifestyle variables focused on adolescent 1) dietary habits, 2) exercise, and 3) sleep patterns. The dietary habits index averages responses to three items concerning how often students eat breakfast, eat green vegetables, and eat fruit ($\propto$ =.74). Possible responses range from "never" (1) to "everyday" (6). Respondents had to have at least two non-missing responses to receive a valid score on the index. Frequency of exercise is measured by two items (r =.63): How often do you exercise vigorously? How often do you actively participate in sports, athletics or exercising? Possible responses ranged from "never" (1) to "everyday" (6). Sleep was measured by a single item: How often do you get at least seven hours of sleep? Possible responses ranged from "never" (1) to "everyday" (6).

High School Seniors' Religious Attendance, Importance, and Denominational Affiliation

	Percent
Importance (N = 3913)	
Not Important	12.3
A little important	24.7
Pretty important	29.5
Very important	33.5
Attendance (N = 3916)	
Never	13.6
Rarely	34.1
Once or twice a month	19.0
About once a week or more	33.4
Denominational Affiliation (N = 3855)	
None	15.2
Liberal	31.7
Moderate	11.9
Conservative	41.3

r e f e r e n c e s

Note: Portions of this report have been adapted from JM Wallace and T A Forman: Religion's role in promoting health and reducing risk among American youth. Health Education and Behavior 25:71-741, 1998.

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