Research paper

An examination of the prospective association between religious service attendance and suicide: Explanatory factors and period effects

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ABSTRACT

Background: We addressed two unanswered questions from prior research, demonstrating a prospective association between frequent religious service attendance and decreased risk for suicide. First, we assessed whether religious service attendance conferred protection from suicide even after accounting for strength of religious affiliation. Second, we evaluated whether the relationship between religious service attendance and suicide was subject to period effects.

Methods: Data were drawn from the 1978–2010 General Social Survey, a nationally representative study of 30,650 non-institutionalized, English-speaking American residents age 18 or older. Data were linked with the National Death Index through the end of 2014. We analyzed these data using moderated Cox proportional hazard analyses.


Limitations: Secondary analysis of data limited the types of variables that were available.

Conclusions: The protective nature of religion is due more to participating in religious activities, such as attending religious services, than to having a strong religious affiliation, and this effect exists primarily in more recent data collection periods.

1. Introduction

In recent years, there has been an uptick in interest in the role of religion as a protective factor against suicide (for a review, see Wu et al., 2015). Religion is a multifaceted construct that consists of many aspects that might be relevant to suicide. Considerable work exists on one particular aspect of religion, frequent religious service attendance (generally operationalized across studies as attending religious services anywhere from at least twice a month to at least once a week; Smith, 1998). The bulk of this work has primarily focused on the association between frequent religious service attendance and risk for suicidal ideation or suicide attempts. To date, only three studies have explored the link between frequent religious service attendance and suicide death. The earliest study (Nisbet et al., 2000) found in a national U.S. sample drawn in 1993,\textsuperscript{1} those who died by suicide were more than four times more likely to have never participated in religious services (assessed through retrospective interviews with next-of-kin) compared to those who died by other means. Although this study was informative, it was limited by its retrospective psychological autopsy methodology.

Building on this retrospective work, prospective studies from our group (Kleiman and Liu, 2014) and others (VanderWeele et al., 2016) used large epidemiological datasets linked to the National Death Index (a database of date and cause of death for all deaths in the United States) to show that frequent religious service attendance was associated with lower odds of dying by suicide in the years following the initial data collection. Specifically, we found in our prior study (Kleiman and Liu, 2014) that those who attended religious services at least 24 times per year (i.e., about every other week or more) had nearly one third of the odds of dying by suicide in the 12–18 year follow-up period compared to those who attended less frequently. Similarly, VanderWeele et al. (2016) found that those who attended religious services at least one per week had nearly one fifth of the odds of dying by suicide in the 14-year follow-up period compared to those who never attended religious services. However, the extant work leaves

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1 South Dakota did not participate in the mortality data collection in 1993, thus the data from the Nisbet et al. (2000) study was technically not from the entire United States, but rather was from 49 out of 50 states.
unanswered several questions. The goal of this study was to answer two of these questions: first, whether the protective effect of religious service attendance is not simply a function of greater religious affiliation. A second question we sought to address is whether the relationship between religious service attendance and suicide was subject to period effects.

1.1. Is the effect of religious service attendance on suicide a function of greater religious affiliation?

Religion is a broad construct that includes, among other factors, religious activity (e.g., attending religious services) and religious affiliation (which may lead someone to engage in religious activity) (Idler et al., 2003). It is currently unknown whether attending religious services is protective against suicide or if it is something more broadly about having strong religious affiliation that better represents the protective nature of religion. One reason why it may be that religious service attendance itself is protective against suicide is that frequently attending religious services provides an opportunity to build social networks within a place of worship (Taylor and Chatters, 1988). Indeed, those who regularly attend religious services have larger social networks within their place of worship and report greater life satisfaction as a result of these social networks (Lim and Putnam, 2010). One reason why it may be that strength of religious affiliation best represents the protective nature of religion is that people who are more religious are not only more likely to attend religious services, but are also more likely to subscribe to religious prohibitions against suicide (Dervic et al., 2004). In line with the idea that religious affiliation is a reason why religion is protective against suicide, several cross-national studies find that countries with higher average affiliation tend to have lower suicide rates (Neeleman and Lewis, 1999; Stack and Kposowa, 2011; van Tubergen et al., 2005). It may also be that both frequent religious service attendance and strong religious affiliation are independently associated with decreased risk for suicide (i.e., it is not one or the factor that protects against suicide, but both are protective in their own way). Congruent with this possibility, there is research showing that both factors are independently associated with decreases in known suicide risk factors, such as major depressive disorder (Balbuena et al., 2013; Miller et al., 2012). Both prior prospective studies were unable to answer this question because religious service attendance was the only religion variable available, and thus they could not compare the effect of religious service attendance to the effect of religious affiliation.

1.2. Is the relationship between religious service attendance and suicide subject to period effects?

The proportion of the United States population that frequently attends religious services has declined over the past several decades. Studies have shown that the odds of any given American attending religious services on any given week dropped 24% from approximately 1 in 2.1 in 1972 to 1 in 2.6 in 2000 (Schwadel, 2011). This decline is in line with a trend for decreased attendance at religious services seen in other countries including Canada (Eagle, 2011) and Ireland (Hirschle, 2010). Given this decline from decade to decade over the past 30 years, suggesting that attending religious services may now be less of a social norm (i.e., because as of 2010, slightly fewer than two thirds of people do not routinely attend religious services), the makeup of those who frequently attend religious services may have changed over time (e.g., there may be fewer people who attended religious services frequently in order to fit with a social norm). Supporting this idea, research has shown that in recent years, there has been an increase in religious service attendance among Americans who do not affiliate with a religion (Lim et al., 2010). This may suggest that frequent religious service attendees in recent years do so for reasons other than religion. For example, they may attend religious services for the social networking aspect of doing so. Thus, given the changes over time in the amount of people who frequently attend religious services and in the makeup of those who frequently attend religious services, it is important to explore whether religious service attendance confers protection from suicide across data collection periods. Both prior prospective studies were unable to answer this question because they used data collected over a relatively short period of time, where variation across time would not be apparent (1988–1994 in Kleiman and Liu, 2014 and 1992–1996 in VanderWeele et al., 2016).

1.3. The present study

To summarize, the goal of this study was to answer two questions regarding the relationship between religious service attendance and death by suicide that were not answered from the two prior prospective studies on the topic: (1) does religious service attendance, over and above strength of religious affiliation, confer protection from suicide? and (2) is the relationship between religious service attendance and suicide subject to period effects? To answer these questions, we used the General Social Survey (Smith et al., 2011), a nationally representative study of over 25,000 people collected over more than 30 years, with linkages to mortality data from the National Death Index.

2. Method

2.1. Participants

Data for the present study were drawn from the 1978–2010 General Social Survey, National Death Index dataset (GSS-NDI; Muennig et al., 2011; Smith et al., 2011), a nationally representative study of non-institutionalized, English-speaking American residents age 18 or older. It has been conducted by the National Opinion Research Center (NORC) yearly from 1978 and every other year starting in 1994. In late 2016, the baseline GSS data up until 2010 were combined with cause of death data from the NDI through 12/31/2014 (Muennig et al., 2016). Cause of death data from the NDI are found to have high accuracy compared to other mortality databases (as high as 97.9% in one study; Cowper et al., 2002). The NDI linkage is performed by matching identifiable data from participants that are not available in the public-access version of the GSS dataset (e.g., first and last name, date of birth) with cause of death data in the NDI. Data were collected in face-to-face interviews and have used computer-administered questionnaires since 2002, and paper and pencil prior to that. The final sample consists of the 30,650 people who had complete data and had died by suicide or other means or were presumed alive as of the end of 2014. The mean age was 45.84 years ($SD = 17.47$ years). Additional details on this dataset are available elsewhere (Muennig et al., 2011).

2.2. Measures

2.2.1. Demographic covariates

We included a variety of demographic covariates known to have an association with suicide death, including sex, age, race, religion, employment status, having children, and graduating high school.

2.2.2. Strength of religious affiliation

Participants were asked to rate their religious affiliation as either not very strong, somewhat strong, or very strong. Because on average 88.5% of responses each year ($SD = 2.6\%$, range $= 84.1–92.7\%$) were either “not very strong” or “very strong” and because studies find little difference in relevant outcomes (e.g., all-cause mortality) between “somewhat strong” and “not very strong” (Kim et al., 2012), we dichotomized this variable such that 1 = very strong religious affiliation and 0 = somewhat strong or not very strong.