Making religiosity person-centered: A latent profile analysis of religiosity and psychological health outcomes

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ABSTRACT

Although variable-centered analyses predominate the religiosity-health literature, they are limited in that they tend to focus on the (unique) associations between a single facet of religiosity and outcomes. Person-centered analyses allow the identification of distinct subpopulations defined by individuals' full response profiles on facets of religiosity. The present study used latent profile analysis to identify distinct subgroups defined by their scores on the Religious Life Inventory-Revised. Using the Lo–Mendell–Rubin Likelihood Ratio Test, we found that a four-class solution fits optimally in two samples of Christian college students, including questioning (high quest, low intrinsic/extrinsic), intrinsically motivated (high intrinsic), high religiosity (high on all religious orientations), and low religiosity (low on all religious orientations) groups. Across both studies, we found, that the high religiosity, low religiosity and questioning groups reported significantly lower levels of psychological well-being compared to the "Intrinsically Motivated" group. These results corroborate studies suggesting that intrinsic religiosity is a protective factor associated with good psychological well-being among religious students and that personal religious struggles (i.e., quest religiosity) are associated with poorer psychological well-being. Our results point to the utility of person-centered analyses to examine religiosity in unique ways.

1. Introduction

Within the psychology of religion, religious orientations reflect different motivations for being religious. Extending the foundational research of Allport and Ross (1967), Batson and Ventis (1982), Batson and Schoenrade (1991a, 1991b) and Batson, Schoenrade, and Ventis (1993) posit that religious orientation, or religiosity, can be understood in terms of three dimensions: intrinsic religiosity, extrinsic religiosity, and quest religiosity. According to Batson et al. (1993), intrinsic-oriented people take religion seriously as an end in itself; thus, these individuals have a strong dedication to their religious values, beliefs, and practice. In contrast, extrinsic-oriented people view religion as a useful means to an end; thus, these individuals may use religion as means to other, self-serving ends, like social gains. Finally, quest-oriented people view religion as an interactive way of finding meaning in life and tend to critically question one's religious beliefs. Based on various theoretical models, such as Self-Determination Theory (Deci & Ryan, 1985; Ryan, Rigby, & King, 1993), Religious Coping Theory (Pargament, 1997) and Meanings Systems Framework (Park, 2005, 2007), research has found

that each of these dimensions differentially predicts various aspects of personal meaning and psychological well-being (see Moreira-Almeida, Lotufo Neto, & Koenig, 2006 for a review).

Specifically, among religious college students, intrinsic religiosity has been identified as a protective factor for depressive symptoms, anxiety symptoms, and alcohol-related outcomes (Berry & York, 2011; Jansen, Motley, & Hovey, 2010; Stewart, 2001; Wood & Hebert, 2005). In contrast, quest religiosity and extrinsic religiosity have been linked to poor mental health (Hill & Pargament, 2008; Maltby & Day, 2000; Steger et al., 2010; Steger, Kashdan, Sullivan, & Lorentz, 2008). Notably, a recent longitudinal study found that religious service and activity attendance tends to decrease during the first few semesters of college (Stoppa & Lefkowitz, 2010), suggesting that the college years are a time of transition. Although variable-centered analyses (e.g., multiple regression, structural equation modeling) predominate the psychology of religion literature, they are limited in that they tend to focus on the (unique) associations between a single facet of religiosity and outcomes. This approach may be a serious limitation considering that these religious orientations (i.e., intrinsic, extrinsic, and quest) have never been claimed to be mutually exclusive of each other (Hills, Francis, & Robbins, 2005), meaning that an individual can be high in both intrinsic and quest religiosity, for example. This limitation can be overcome through the use of person-centered analyses.

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1.1. Person-centered approaches

Person-centered analyses can identify subpopulations, or subgroups, of individuals who share particular attributes. An increasing number of studies have utilized person-centered analyses in the examination of religiosity including cluster analysis (Fife et al., 2011; Halama, 2015) and latent class or latent profile analysis (Park et al., 2013; Pearce, Foster, & Hardie, 2013; Salas-Wright, Vaughn, Hodge, & Perron, 2012; Salas-Wright, Vaughn, & Maynard, 2014). Latent class or latent profile analysis (the former typically reserved when using categorical indicators and the latter when using continuous indicators) has several strengths over cluster analytic approaches. Unlike cluster analysis, latent profile analysis assigns class membership probabilistically, which correctly accounts for and quantifies the degree of classification error. Also, the sample size of latent classes is taken into account when assigning probabilistic class membership such that an individual with scores between two classes is noted to more likely be in the larger class than the smaller class. Finally, there is a range of statistical tests and fit indices to determine the ideal number of classes to most parsimoniously explain population heterogeneity. For these reasons, we focus on studies using latent class/profile analysis.

In a nationally representative sample of adults (i.e., 18 years or older), Park et al. (2013) found 4 subgroups based on measures of religious service attendance (1 item), prayer (1 item), positive religious coping (3 items), and daily spiritual experiences (6 items), which they described as highly, moderately, somewhat, and minimally religious groups. They found that the highly religious group reported the highest self-perceived health, general happiness, and financial satisfaction, and the lowest psychological distress.

Using the National Survey on Drug Use and Health (NSDUH; Substance Abuse and Mental Health Services Administration [SAMSHA], 2009; Salas-Wright et al. (2012) found five subgroups of adolescents based on five religiosity items: religious service attendance, participation in faith-based activities, importance of religious beliefs, degree to which religious beliefs influence decisions, and degree to which it is important that peers share the same religious beliefs. In addition to finding very low ("disengaged"), low ("sporadic"), moderate ("regulars"), and high ("devoted") groups, they found a "privately religious" group that was low on participation in religious activities but high on the other indicators. Their most consistent findings was that the high religiosity group reported lower likelihood of using several substances (i.e., alcohol, marijuana, cocaine/crack, hallucinogens), and lower likelihood of fighting and stealing.

Despite using different indicators of religiosity, Salas-Wright et al. (2014) found four subgroups among emerging adults (i.e., ages 18 to 25) using data from both the NSDUH (SAMSHA, 2011) and the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC; Grant et al., 2003). In NSDUH, indicators included religious service attendance, importance of religious beliefs, degree to which religious beliefs influence decisions, and degree to which it is important that peers share the same religious beliefs. In NESARC, indicators included religious service attendance, religious social engagement, and importance of religious beliefs in daily life. Although they described the two intermediate (i.e., low and moderate) groups differently across the two samples, both datasets found very low, low, moderate, and high groups. The high religiosity groups reported substantially less criminal behaviors ranging from antisocial behaviors (i.e., stealing, selling drugs), substance use behaviors (i.e., tobacco, alcohol, marijuana, etc.), and substance abuse/dependence (i.e., nicotine, alcohol, marijuana, illicit drugs).

Across multiple studies examining religiosity-related constructs, four or five class solutions predominate despite different sample sizes and numbers of indicators (Park et al., 2013; Pearce et al., 2013; Salas-Wright et al., 2012; Salas-Wright et al., 2014). As most of the previous studies have come from large, multi-purpose epidemiological studies, they have a strength in being from nationally representative samples, but a weakness in the ability to comprehensively assess religiosity (studies above used 4–12 items). They have also focused on aspects of intrinsic and extrinsic religiosity, and have not examined quest religiosity.

1.2. Study 1 purpose

The purpose of the present study was to identify subpopulations of individuals defined by the three religious orientations described above: intrinsic, extrinsic, and quest. Specifically, we use latent profile analysis to determine the number of distinct religiosity subpopulations in our sample of Christian college students. Next, we examine how these distinct groups differ on a host of religiosity-related constructs (i.e., personal religious struggle, religious commitment, positive religious coping, negative religious coping, and purpose in life) and psychological health outcomes (i.e., depressive symptoms, anxiety symptoms, rumination, alcohol consumption, and alcohol-related problems), which have been found to be linked to religiosity among religious college students.

2. Study 1 method

2.1. Participants and procedure

Participants were undergraduate students recruited from a Psychology Department participant pool at a large, southeastern university in the United States to complete an online survey for research participation credit. To have access to the participant pool, students had to be at least 18 years old and enrolled in a psychology course. From 772 total participants, we used the data from 530 students who self-identified as Christian. Most participants were female ($n = 398$, 75.1%), identified as being either White ($n = 246$, 46.4%) or African-American ($n = 219$, 41.3%), and reported a mean age of 21.75 ($SD = 5.35$) years. With regards to Christian denomination, most participants identified as either Baptist ($n = 216$, 40.8%) or Catholic ($n = 90$, 17%). The study was approved by the institutional review board at the participating institution.

2.2. Measures

For all measures, composite scores were created by averaging items and reverse-coding items when appropriate such that higher scores indicate higher levels of the construct. The bivariate correlations, descriptive statistics, and internal consistency measures for all variables in Study 1 are shown in Table 1.

2.2.1. Religiosity

Religiosity was assessed using the 24-item Revised Religious Life Inventory (RLI-R; Hills et al., 2005), which is measured on a 9-point response scale ranging from 1 (*Strongly disagree*) to 9 (*Strongly agree*). The RLI-R assesses the extrinsic (7 items; e.g., "The church is most important as a place to formulate good social relationships"; $\alpha = .84$), intrinsic (9 items; e.g., "I try hard to carry my religion over into all my other dealings in life"; $\alpha = .93$), and quest (8 items; e.g., "I am constantly questioning my religious beliefs"; $\alpha = .89$) orientations of religiosity. The RLI-R has shown good to excellent reliability and convergent validity has been demonstrated by correlations with the original Religious Life Inventory (Batson & Schoenrade, 1991b) $r = .89$ for intrinsic and $r = .96$ for extrinsic and quest scales (Hills et al., 2005).

2.2.2. Personal religious struggle

Religious commitment and religious struggle were assessed using the College Student's Beliefs and Values Survey (CSBV; Astin et al., 2011). The CSBV consists of 12 "scales" that assess student's spiritual and religious orientations. The present study only examined the religious commitment and religious struggle subscales. Religious