A Mediation Analysis of Spirituality: Wellbeing and Academic Performance in first-Generation and Low-income College Students

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Abstract

Mental health and attainment gaps comprise crises on university campuses, especially for first-generation and low-income students. Despite the heritage of spirituality and religious foundations of America's colleges, current norms have rendered candid discussions of spirituality to be mostly nonexistent. Despite literature linking spirituality with psychological wellbeing, known is little as to what relationship spirituality has with psychological wellbeing and academic performance, particularly among first-generation and low-income students. This study uses a cross-sectional survey design and occurred a public, regional, Midwestern institution. Quantitative analysis found a relationship between psychological wellbeing and academic performance in specific circumstances, and an indirect effect between spirituality and academic performance in the presence of psychological wellbeing. These data presents implications for practitioners.

Keywords: higher education, spirituality, well-being, and academic performance

1. Introduction

1.1 Statement of the Problem

While first-generation and low-income students are growing in enrollment across public institutions in the United States, academic outcomes have not improved alongside enrollment gains (Perna, 2015). A notable and persistent degree achievement gap exists between first-generation and low-income college students and their peers (Pascarella, et al., 2004; Tinto, 2012). Further, there is growing national concern for college students' mental health (Auerbach, et al., 2018). Often first-generation and low-income students face common and unique wellbeing challenges related to financial stress, academic adjustment, and family-related conflict when compared to their peers (Lippincott & German, 2007).

Evidence supports a positive relationship between mental health and retention (Kitzrow, 2009). One central question in this inquiry is whether spirituality has any relationship to wellbeing and mental health for first-generation and low-income students. Public colleges and universities are virtually secular, despite 78% of college-aged students claim religious affiliation (Kosmin, et al., 2009). The researchers sought to discover if this phenomenon occurred within student subpopulations that are more likely to be first-generation and/or low-income. When surveying the problem nationally, the wellbeing and academic performance of first-generation and low-income students presents a problem of practice for institutions of higher education in the United States.

1.2 Importance of the Problem

Long before it became absent from conversations and curricula in higher education, taking lead in the spiritual formation of students was not only a part of the early colleges in America, it was a main focus (Brubacher, 2017; Rudolph, 1962). However, spiritual formation curricula and services have declined or disappeared completely (Chickering, et al., 2009) from public higher education institutions. This vast disparity between support and students looms large, since in the present era the majority (78%) of students still claim religious affiliation (Kosmin, et al., 2009). This disconnect between public universities and the students they support creates a problem of practice for emerging adults, particularly for first-generation and low-income students whose academic outcomes lag behind their peers despite a growing representation on college campuses (Aruguete,

2018). Nevertheless, few studies have investigated the spiritual resources and outcomes of first-generation, low-income students at public universities as most have focused on predominantly only on white students (Mattis, 2000). Moreover, while first-generation and low-income students are growing in enrollment across public institutions in the United States, academic outcomes have struggled to improve (Perna, 2015). If a relationship between spiritual resources, wellbeing, and academic performance in first-generation and low-income students exists, the opportunity to support students could produce outcomes for which institutions will be increasingly accountable (Chickering, et al., 2006). Essentially, the goal of this study was to investigate ways to help both students and institutions accomplish shared goals in providing educational opportunity to all.

1.3 Relevant Scholarship

Much of the literature-to-date has focused on cognitive and non-cognitive resources affecting first-generation and low-income students' experiences in college (Duckworth, et al., 2007). Religion and spirituality have been popular but difficult topics to define in the literature. Capturing both mystical experiences and perennial concerns about the nature of life, the variability in definitions between scholars and laity has drawn the interest of researchers (Clark, 1958; Zinnbauer, et al., 1997). Others treat the terms *spirituality* and *religion* as synonyms (Miller & Martin, 1988). Some have considered college student's subjective use of religiousness to include conventional behaviors like church attendance or even more conceptual attitudes related to altruistic beliefs (Pargament, et al., 1995) One survey of over 100,000 college students at over 200 colleges and universities found that 76% of students were searching for meaning and purpose in life (Astin, et al., 2005). Zinnbauer's (1998) work on Christian religious conversion sought to make distinctions between religious conversion and incremental changes in religiousness among Christian college students. Mattis (2000) described spirituality as being multidimensional including: an understanding of transcendence, connections with the divine, living according to values, and internalizing values/beliefs. Pargament (2001) described spirituality as "a search for the sacred" that may or may not be religious in nature (p.32).

However, Hood, Hill, and Spillka's (2018) framework takes effort to transcend and include previous work both meant to define and differentiate spirituality and religion while also measuring it/them. Consequently, their framework articulates these tensions as the "cognitive, motivational, and social aspects of finding meaning in life" (p. 17). Moving beyond attribution theory supported in previous editions, Hood, Hill and Spilka (2018) contended that this framework is most inclusive of decades of empirical data and variation among humans and is the guiding theoretical framework for understanding spirituality in first-generation and low-income students in this study.

One study (Kuh & Gonyea, 2006) found that students who are engaged in spiritual activities such as prayer or meditation tended to exercise more, attend cultural events more often are also more likely to perform community service, spend less time partying. Further, the researchers found and no evidence that spiritual practices negatively influence collegiate experiences. Similarly, Walker and Dixon (2002) discovered a positive correlation between spirituality and academic performance among African American students. African American students, who are more likely to be first-generation and low-income, did scored more highly on one spirituality assessment than non-African American students (Engle & Tinto, 2008).

Astin et al., (2005) suggested that popular college offerings, such as freshman seminar and service learning, as examples of promoting spiritual issues via holistic learning. Citing the former example, Astin (2004) asserted that seminar encourages "students to look at their education in a more holistic way, and to make deeper connections between their academic work and their sense of meaning and purpose in life." (p. 40). Yeh (2010) noted service learning helped develop coping skills, find personal meaning, clarify personal values and find motivation for first-generation and low-income students. Greenway (2006) found her path model hypothesizing purpose in life positively predicting academic engagement and academic success accounted for 42% of the variance in academic success. Greenway contended her findings "point to the need for higher education to cultivate the search for meaning, to assist students in finding purpose in life, and to promote intrinsic motivation through personal meaning-making that leads to academic engagement" (p. 3).

Dalton, et al., (2006) suggested a delineation between religious and secular spirituality among college students that lead to four types of spiritual seekers. The first two types, faith centered seekers and multi-religious seekers, are alike in that they seek spirituality within a particular religion but differ in the latter's ability to "deepen their religious spirituality through interfaith and multi-religious exploration, dialogue, and practice" (p. 7). The remaining two types are categorically secular in that they seek spirituality outside of religion. The difference between the mindfulness seeker and the wellness seeker is the former is "focused in their inner search… to heighten self-awareness" and the latter is "engage in spirituality activities to achieve a more holistic, healthy, and

integrated way of life" (Dalton, et al, 2006, p.7). These avenues may mark the religious and non-religious spiritual classifications of today's college students. To cultivate spirituality, Dalton, et al., (2006) stressed the importance of physical space(s) dedicated for these purposes, citing public institution examples like Salisbury State, Central Oklahoma University, and University of California- San Diego.

It is worth noting, again, that there is little available research investigating spirituality as a phenomenon in the lives of first-generation and low-income college students, let alone whether spirituality has any effect on those students' wellbeing or success in college. Though multiple studies have examined the characteristics of either first-generation or low-income students, few have considered students who are both first-generation and low-income as a population, though a relationship between both characteristics is documented (Engle & Tinto, 2008). There is a notable literature gap regarding the inner experiences of first-generation and low-income students, despite first-generation students representing nearly 50% of all college students since the beginning of the 21st Century (Choy, 2002). While psychological and other medical literature have linked positive measures of personal wellbeing with spirituality, few studies have investigated whether a student's spirituality is related to general student wellbeing and performance (Adams, et al., 2000). If a relationship exists, this link may illuminate areas to support students in an attempt to address growing mental health challenges on college campuses (Bruffaerts, et al, 2018).

1.4 Conceptual Framework

Chickering (1969) and Chickering and Reisser's (1993) Seven Vectors of Development convey how college students may develop psychosocially: developing competence, managing emotions, becoming interdependent, developing mature interpersonal relationships, establishing identity, developing purpose, and the development of integrity. As college students gain skills and receive feedback, they develop a sense of their abilities, which support a stronger view of self. In the next vector, students learn adaptive ways of managing and coping with emotions, particularly negative emotions and environmental frustrations typical to college. In a critique of cognitive, stage models, Chickering and Reisser (1993) asserted the seven vectors assume that "emotional, interpersonal and ethical development deserve equal billing with intellectual development" (p.39). In the third vector, students learn ways to negotiate autonomy with interdependence. Developing a capacity for inclusivity and pluralism marks development in the fourth vector. The fifth vector is concerned with the establishment and acceptance of one's identity. The sixth vector links psychosocial development with the development of one's purpose in life. Finally, the seventh vector manifests and aligns personal values with lived behavior as students develop integrity.

Conceptualized as a way to describe how psychosocial development happens alongside cognitive development, the steps, or vectors, in the model serve a directional purpose. Movement from lower to higher positions within the vectors signals growth and movement can very between each vector. Undergoing a revision in 1993 that reordered and modified some vectors in response to continued research, the model accounts for developmental differences between students, including males and females (Chickering & Reisser, 1993). For example, research has suggested men and women vary both in how they view relationships and groups outside of themselves (Taub, 1995).

Chickering and Reisser's (1993) sixth vector, developing purpose, is particularly relevant to this study. The authors suggested developing purpose necessitates the alignment of career plans, personal interests, and interpersonal commitments (Chickering & Reisser, 1993). This also includes goal-oriented thinking, goal-oriented behavior, and the articulation of priorities (Chickering & Braskamp, 2009). Where passive involvement may have served utility in other vectors, intentionality is required in the sixth vector (Pascarella & Terenzini, 2005). It is important to note the development of purpose, as conceptualized by Chickering and Reisser, described both internal and external activity. Reisser (1995) pointed to one's emerging; internal sense of purpose evidenced by one's external decisions. One longitudinal study of 354 freshmen validated the sixth vector linking the development of purpose to college experiences (Martin, 2000). In their synthesis of student development literature, Pascarella and Terenzini (2005) contended purpose development is influenced by the student's view of self as established in the fifth vector. This means, according to this framework, that one's view of purpose is conditioned by one's view of self.

Chickering and Reisser (1993) suggested seven components needed to help college students develop along the seven vectors: institutional objectives, institutional size, student-faculty relationships, curriculum, teaching, communities, and student development programs. Chickering, et al., (2006) advocated for holistic education as a way to foster spiritual development in college students while noting a nuanced view of students who might distrust religion yet sense a "personal quest for meaning and purpose in their lives" (p. 91). The authors

contended authenticity, related to vectors five through seven and defined broadly as living life by one's values, may be linked to spirituality, which they also define broadly in terms of searching for and making meaning (Chickering, et al., 2006).

While not an explicitly spiritual framework, others have noted the "distinctly spiritual tone" implicit within the vectors (Love & Talbot, 1999, p. 369). As it relates to this study, Chickering and Reisser's (1993) model suggested the expectation that spiritual resources of first-generation and low-income students to influence their respective levels of psychological wellbeing and academic performance born out of experiences related to purpose making that occurs in the lives of college students as they develop a sense of identity. The internal and external processes associated with the sixth vector, such as developing an inner sense of values and articulating a set of goals, linked with both wellbeing and behaviors adaptive to academic achievement in first-generation and low-income college students at a public university.

Supported by at least three arguments is this rationale. First, revisited, revised and validated by other research has been Chickering's (1969) model (Martin, 2000; Reisser, 1995). Second, the framework acknowledged the interplay of both cognitive and psychosocial development in ways that are specific and predictive, such as the role of the fifth vector's semi-foundational role in supporting development in the sixth vector. This relationship may be similar to relationships, if any, between the variables in this study. Finally, the selection of this model allows for more inclusive understandings of spiritual experiences that may be non-religious is nature that aligns with the purpose of this study. In other words, Chickering and Reisser's (1993) framework allowed for the development of values and purpose that may or not relate to religious beliefs, which can include non-religious students in an inquiry related to spiritual resources.

1.5 Research Design and Research Questions

Framed from a post-positivist paradigm in that it seeks to test theories to understand phenomena encountered in the world (Creswell, 2014) was this study. Consequently, this study utilized a quantitative, cross-sectional survey design. The rationale for this choice was two-fold. First, the study was structured so that researchers and practitioners can better understand what relationship, if any, exists between the variables of this study and first-generation, low-income students (Creswell, 2014). Secondly, the survey design itself was conducive for expedited online distribution and collection (Creswell, 2014). After data are collected, statistical tests were administered to investigate hypothesized relationships between spirituality, wellbeing and academic performance among first-generation and low-income students. Therefore the research questions for this inquiry are, Is there a relationship between spirituality and academic performance among first-generation and low-income students at a public Midwestern university? And, does spirituality affect academic performance when mediated by psychological wellbeing among students at a public Midwestern university?

2. Method

Sampling was non-random and non-stratified, soliciting involvement from participants throughout campus. Since compared were both first-generation and low-income students with peers, to reduce bias and other sampling error, and to achieve the statistical power needed to perform the needed analyses, 134 students comprised the population.

Provided in Tables 1 and 2 is a breakdown of basic student demographics including class rank and sex/gender of respondents.

Table 1. Participant Classification by Class Ranking

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Freshman	15	11.2	11.3	11.3
	Sophomore	21	15.7	15.8	27.1
	Junior	45	33.6	33.8	60.9
	Senior	45	33.6	33.8	94.7
	Graduate	7	5.2	5.3	100.0
	Total	133	99.3	100.0	
Missing	System	1	.7		
Total		134	100.0		

Two thirds of participants clustered among upperclassmen. Since the methodology for this student did not make distinctions between undergraduates and graduates, all enrolled students are included in the analysis. As shown in Table 2, respondents are predominately female. This may be representative of current enrollment trends while

also potentially skewing results.

Table 2. Participant Classification by Sex and/or Gender

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Male	26	19.4	19.5	19.5
	Female	104	77.6	78.2	97.7
	Other identified	3	2.2	2.3	100.0
	Total	133	99.3	100.0	
Missing	System	1	.7		
Total		134	100.0		

First generation and low-income college students are the population of interest in this inquiry. The participant breakdown is shown in Tables 3 and 4, respectively.

Table 3. Participant Classification by First Generation Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	62	46.3	46.3	46.3
	Yes	72	53.7	53.7	100.0
	Total	134	100.0	100.0	

Table 4. Participant Classification Low Income Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	73	54.5	54.5	54.5
	Yes	61	45.5	45.5	100.0
	Total	134	100.0	100.0	

In addition, participants who were either first-generation or low-income are shown in Table 5 and participants who are both first-generation and low-income are shown in Table 6.

Table 5. Participant Classification First Generation and/or Low Income Status

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Neither FG nor LI	23	17.2	17.3	17.3
	Either FG or LI	110	82.1	82.7	100.0
	Total	133	99.3	100.0	
Missing	System	1	.7		
Total		134	100.0		

Table 6. Participant Classification First Generation and Low Income Status

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Not FG and LI	120	89.6	90.2	90.2
	FG and LI	13	9.7	9.8	100.0
	Total	133	99.3	100.0	
Missing	System	1	.7		
Total		134	100.0		

2.1 Survey

Participants completed a modified College Students' Beliefs, Values Survey, and PERMA-Profiler online (Butler & Kern, 2015). The CBSV instrument was modified, with permission. Twenty-five (25) items related to spirituality and spiritual engagement were retained from the CSBV, where scales like religious skepticism and ethic of caring were not retained due to their irrelevance to this study.

The PERMA Profiler, assessing wellbeing, was integrated with the modified CSBV. The PERMA Profiler served as the second part of the survey. The combined and revised instrument included includes 42 scale items that collectively measure spirituality and PERMA dimension. Reliability analysis of the 42 survey items rendered a Cronbach's alpha above .8 (α=.86), which is well above the acceptable range (Cortina, 1993).

Conducted on the 25 revised spirituality items revealing nine components accounting for 71% of the total

variance was principal components factor analysis. Keiser-Meyer-Olkin Measure of Sampling adequacy was sufficient at .814 and Barlett's Test of Sphericity was significant($x2(300) = 1224.16$, $p < .001$). Initial eigenvalues showed that the first four components explained 26%, 8%, 7%, and 5%, for 46%, of the variance. These four components were selected due to their relevance to the conceptual framework, the amount of variance accounted by the components, and the leveling of the associated scree plot. Composite scores for each of the four components were created as variables to describe their factor loadings. These four composite variables included Salient Spirituality, Spiritual Change, Humanism, and Spiritual Seeking.

2.2 Setting

A public, regional, 4-year university in the Midwest was the setting for this study given the majority of its enrollment is first-generation and/or low-income students (UCM, 2021). Due to the admissions selectivity of these institutions and their public nature, this type of institution provided a convenient yet appropriate setting for this study as these admissions criteria allow for higher shares of first-generation and Pell-eligible students (MDHE, 2019; Tebbs & Turner, 2005).

2.3 Data Analysis

Descriptive analyses including means, standard deviations, and ranges were performed on spirituality, wellbeing, and academic performance, which comprise all measured variables in this study (Creswell, 2014). Using SPSS, this present study used Pearson product moment correlational analysis to examine statistical relationships between variables and independent samples t-tests to compare means of wellbeing and academic performance between first-generation and low-income students and their peers. This analysis was appropriate for this inquiry since the independent samples t-test is meant to compare "two means that come from conditions consisting of different entities" (Field, 2013, p. 331). This helped illustrate if any difference exists between the two populations, and whether or not this difference is statistically significant.

Mediation analysis was also used to assess if wellbeing mediates the relationship between spirituality and academic performance. Three regressions are needed to assess whether wellbeing mediates. The first regression has spirituality predicting academic performance. The second regression has spirituality predicting wellbeing. The final regression has spirituality and wellbeing predicting academic performance.

Linearity, homoscedasticity, and multicollinearity, assumptions of multiple regression, was assessed (Field, 2013). These analyses showed whether spirituality accounts for variance among wellbeing and academic performance among the sample population. Data were presented in appropriate and relevant tables and figures, and interpreted and the researchers drew conclusions for the research questions. Statistical significance tests, with statistical significance reported at $p < .05$), confidence intervals, and effect sizes were reported (Creswell, 2014).

3. Results

Listed in Table 7 are the descriptive statistics for all relevant variables in this inquiry, including standardized values for compositive variables created as a result of principal components analysis. Of note are the GPA means closer to maximum end of the range. Also, of note is apparent "averaging" of psychological wellbeing scores with means within the 70th percentile, including all sub-dimensions with the exception of positive emotions (M= 6.596).

Table 7. Descriptive Statistics

	N	Range	Minimum	Maximum	Mean	SD
Previous semester GPA:	120	2.30	1.70	4.00	3.3798	.58688
Cumulative GPA:	121	2.00	2.00	4.00	3.4168	.48968
Positive Emotions	125	7.67	2.00	9.67	6.5960	1.51948
Engagement	125	5.67	4.33	10.00	7.5827	1.38777
Relationships	125	7.00	3.00	10.00	7.5627	1.63212
Meaning	125	7.67	2.33	10.00	7.3560	1.58670
Achievement	125	7.67	2.33	10.00	7.3947	1.48311
Psychological Wellbeing (PERMA)	125	5.75	3.94	9.69	7.2868	1.19247
Salient Spirituality	120	4.28110	-2.72969	1.55141	-.022658	.99257534
Spiritual Change and Crisis	120	4.29763	-1.92533	2.37229	.004610	1.00717247
Humanism, Non-spiritually Identified	120	4.66282	-2.52968	2.13314	-.006910	1.00690207
Spiritual Seeking Behavior	120	5.42697	-3.76113	1.66584	.031370	.97252915
Valid N (listwise)	113					

Note: n=134

Provided in Table 8 is the descriptive statistics for the six items that helped comprise the composite variable, Salient Spirituality.

Table 8. Descriptive Statistics: Spiritual Salience

	N	Range	Minimum	Maximum	Mean	SD
My spiritual/religious beliefs have helped me develop my identity	126	3	2	5	3.98	.885
My spiritual/religious beliefs are one of the most important things in my life	126	3	2	5	3.80	.996
My spiritual/religious beliefs give meaning/purpose to my life	126	3	2	5	4.02	.959
My spiritual/religious beliefs help define the goals I set for myself	125	3	2	5	3.95	.932
My spiritual/religious beliefs provide me with strength, support, and guidance	125	3	2	5	4.07	.952
My spiritual/religious beliefs lie behind my whole approach to life	126	3	2	5	3.69	.959
Valid N (listwise)	124					

Note: n=134

Provided in Table 9 is the descriptive statistics for prayer as a spiritual practice and proxy for spirituality, reflecting Kuh and Gonyea's (2006) earlier work. Used as a predictor variable in a later mediation analysis was prayer.

Table 9. Spiritual Behavior: Prayer

		Frequency	Percent	Valid Percent	Cumulative %
Valid	Yes	76	56.7	60.3	60.3
	No	50	37.3	39.7	100.0
	Total	126	94.0	100.0	
Missing	System	8	6.0		
Total		134	100.0		

Note: n=134

Q1. Is there a relationship between spirituality and academic performance among first-generation or low-income students at a public Midwestern university?

To examine whether a relationship exists between spirituality and academic performance among first generation or low-income students, a Pearson Correlation was conducted. Results of the Pearson correlation show a non-significant, weak, negative relationship between Salient Spirituality and Previous Semester GPA $(r(93)=-.1000\ p=.171)$, a non-significant, weak, positive relationship between Salient Spirituality and Crisis and Cumulative GPA $(r(94)=.041\ p=.349)$, and no relationships between Salient Spirituality and Good Academic Standing, $(r(99)=.\ p=.488)$ (see Table 10).

Results of the Pearson correlation also showed no relationship between Spiritual Change and Crisis and Previous Semester GPA $(r(93)=-.009\ p=.466)$, no relationship between Spiritual Change and Crisis and Cumulative GPA $(r(94)=-.072\ p=.246)$, and a significant, modest, negative relationship between Spiritual Change and Crisis and Good Academic Standing, $(r(99)=-.233\ .\ p=.01)$.

Further, results of the Pearson correlation also showed no relationship between Humanism, Non-spiritually Identified and Previous Semester GPA $(r(93)=-.050\ p=.315)$, no relationship between Humanism, Non-spiritually Identified and Cumulative GPA $(r(94)=-.001\ p=.495)$, and no relationship between Humanism, Non-spiritually Identified and Good Academic Standing, $(r(99)=-.040\ .\ p=.346)$.

Finally, results of the Pearson correlation also showed a significant, slight positive relationship between Spiritual Seeking Behavior and Previous Semester GPA $(r(93)=.179\ p=.043)$, a near significant, slight positive

relationship between Spiritual Seeking Behavior and Cumulative GPA (r(94)=.133 p=.133), and no relationship between Spiritual Seeking Behavior and Good Academic Standing, (r(99)=.033 . p=.375). While some relationships appear to exist between wellbeing and academic performance, the researcher can neither accept nor reject the null hypothesis due to inconsistency in results.

Table 10. Correlations Matrix: Spirituality and Academic Performance

First Generation or Low Income	1	2	3	4	5	6
1. Salient Spirituality						
2. Spiritual Change and Crisis	.014					
3. Humanism, Non-Spiritually Identified	-.050	.008				
4. Spiritual Seeking Behavior	.028	-.036	-.026			
5. Previous Semester GPA	-.100	-.009	-.050	.179*		
6. Cumulative GPA	.041	-.072	-.001	.116	.758**	
7. Good Academic Standing	.003	-.233*	-.040	.033	.172*	.418**

*. Correlation is significant at the 0.05 level (1-tailed).
**. Correlation is significant at the 0.01 level (1-tailed).

Note: n=134

Q2. Does spirituality affect academic performance when mediated by psychological wellbeing among students at a public Midwestern university?

To see if spiritually predicts academic performance when mediated by psychological wellbeing, two mediation analyses were performed based upon established statistical relationships from previous analyses. Illustrated in Figure 1 is the first mediation.
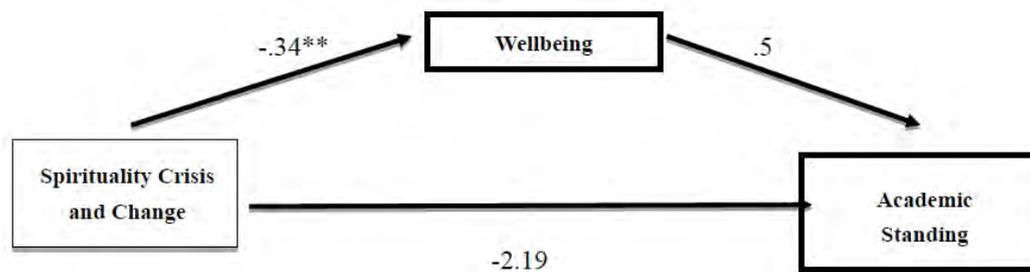
Figure 1. Mediation Model – Spirituality Crisis and Change, Wellbeing, and Academic Standing

Regression analysis was used to investigate the hypothesis that psychological wellbeing mediates the effect of spirituality on academic performance. Results indicated that spiritual crisis and change were a near-significant predictor of psychological wellbeing, B = -2.19, SE = .129, p < .1, and that psychological wellbeing was a non-significant predictor of academic standing, B = .5, SE = 1.29 p =.80. These results do not support the mediational hypothesis, though spirituality is shown by way of mediation model, to be a significant predictor of psychological wellbeing.
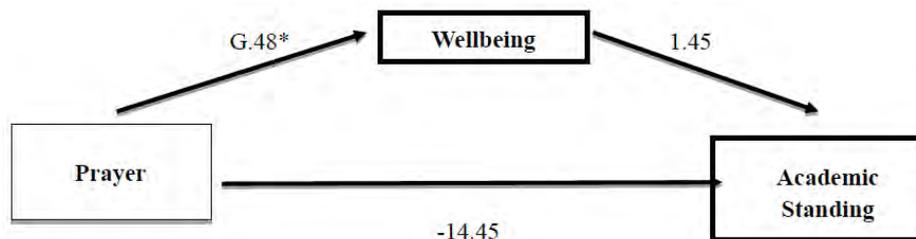

Figure 2. Mediation Model – Prayer, Wellbeing, and Academic Standing

Recalling that prayer, a common spiritual exercise, is practiced by 60% of study participants, consideration was given as to what relationship, if any, it had with psychological wellbeing and academic performance. Considering Kuh and Gonyea's (2006) finding that practices like prayer correlate positively with exemplary

student behaviors like decreased partying and increased involved in volunteering, perhaps prayer could serve as a proxy for spirituality.

Again, regression analysis was used to investigate the hypothesis that psychological wellbeing mediates the effect of spirituality on academic performance. Results indicated that prayer was a significant predictor of wellbeing, B = .48, SE = .2151, p < .05, and that wellbeing was a near-significant predictor of academic performance, B = 1.45, SE = .829 p =.08. These results support the mediational hypothesis. Prayer was no longer a significant predictor of academic performance after controlling for the mediator, psychological wellbeing, B = 14.45, SE = 401.48, ns, consistent with full mediation.

Approximately 31% of the variance in academic standing was accounted for by the predictors (R^2 *McFadden* = .3066). The indirect effect was tested using a percentile bootstrap estimation approach with 5000 samples, implemented with the PROCESS macro Version 3.4 (Hayes, 2013). These results indicated the indirect coefficient was significant, (B = .6904, SE = 18.34, 95% CI = .0469, 60.8110). The indirect effect of prayer as associated with academic standing had an effect size of .69 when potentially mediated by psychological wellbeing.

While Baron and Kenny's (1986) assumptions require for the direct path between x and y (path C) variables to be significant, McFatter (1979) suggested that there may be situations where variable suppression causes x not to predict y in the mediation model, erroneously leading to the conclusion that mediation is not supported. Judd and Kenny (1981) also suggested that this might be possible. While indirect effect is supported in this model, whether mediation exists between the variables was inconclusive.

4. Discussion

According to Creswell (2014), quantitative research is concerned with testing theories by examining relationships between variables. Spirituality, wellbeing, and academic performance, viewed through the Chickering and Reisser's (1993) framework, are the relevant variables of this study.

4.1 Spirituality

Four components of spirituality, defined as the "cognitive, motivational, and social aspects of finding meaning in life", accounted for nearly 50% of the variance among survey respondents: Salient spirituality, Spiritual Change and Crisis, Humanism, Non-spiritually identified, and Spiritual Seeking (Hood, Hill, & Spilka, 2018. p.17). Salient Spirituality described individuals who articulate either strong belief or agreement with spiritual propositions or belief. In principal component analysis, this component of spirituality strongly and positively correlated to survey items regarding spirituality being one of the most important aspects of one's life and lend meaning/purpose to one's life (Hood, Hill, & Spilka, 2018). As it relates to the conceptual framework, this component of spirituality strongly correlated to identity development. Salient Spirituality moderately, negatively correlated with changing one's spiritual belief, suggesting stability, robustness, or rigidity.

The second component, Spiritual Crisis and Change, strongly correlated with questioning and changing one's beliefs. Incidentally, this component moderately connected with experiencing disagreements with loved ones and feeling overwhelmed. Further, Spiritual Crisis and Change negatively, moderately correlated with the belief that difficult times can make someone stronger and slightly-negatively correlated with the belief that it is important to get a high GPA. Of the four components, this type had the strongest positive correlation to attending a retreat on spiritual matters. Whether or not the retreat prompted spiritual crisis or change or was meant to aid in the transition is unknown in this study and represents a future area of inquiry. A spirituality in transition, showing negatively correlations to wellbeing and aspiration of academic performance, may represent an overlooked but needed area of support for college students.

The third component, Humanism, represents beliefs about life and existence that are not derived from a religious or explicitly spiritual source, as suggested by Pargament (2001). This component positively correlated to altruistic beliefs of magnanimity and the inherent goodness of people, more so than even the Spiritually Salient. Humanism, though moderately so, most correlated to feelings of being overwhelmed among the four modes of spirituality in college students. Interestingly, and lending to its designation as its own type, this component most consistently showed a weak, negative correlation to almost all explicit spiritual beliefs about existence.

The fourth and final component, Spiritual Seeking, described three types of behaviors moderately-to-strongly and positively correlated with this component: participating in spiritual retreats, volunteering, and service learning. While spirituality is less salient in the component, it is more demonstrable. For example, this type correlated significantly with volunteer work and service learning, consistent with Yeh (2010). Of the components, Spiritual Seeking was the most moderately, negatively correlated with feeling overwhelmed but also slightly,

negatively correlated with the belief that life is a gift.

4.2 Spirituality and Psychological Wellbeing

For this study, psychological wellbeing is defined using Seligman's (2011) PERMA framework, which has dimensions of positive emotions (P), engagement (E), relationships (M), and achievement (A). In a Pearson product moment correlation, Salient Spirituality modestly and significantly correlated with psychological wellbeing and three of its five dimensions among first generation and low-income students. Conversely, Spiritual Crisis and Change was significantly and slightly, correlated with psychological wellbeing including four of its five dimensions. Further, in mediation analysis, spirituality was found to be a significant predictor of psychological wellbeing. As it pertains to the second research question, there is a statistically significant relationship between spirituality and psychological wellbeing among first-generation and low-income students, which is consistent with known literature (Daaleman & Frey, 2004; Klasses & Greken, 2017; Nelms et.al, 2006).

However, the relationship between spirituality and the dimensions of psychological wellbeing organized differently than described by this study's conceptual framework. Chickening and Reisser's (1993) sixth vector, developing purpose, if one could draw a logical connection with Seligman's (2011) understanding of meaning, showed no significant relationship with spirituality, excepting for the case where spirituality is a negative predictor for meaning among students experiencing spiritual crisis or change. Incidentally, only significantly correlated with positive emotions, engagement, and relationships was salient spirituality.

Further, this study is concerned with, to what extent if any; spirituality serves as a predictor of wellbeing. Results from regression analysis support prayer as a predictor for psychological wellbeing. 6.997 is the expected PERMA, or psychological wellbeing score, when prayer, as a predictor, is at zero. .48 is the expected change in psychological wellbeing among students who pray. This means that prayer to improve aggregate wellbeing scores above the mean, which is 7.2868 is expected. Prayer, as one spiritual practice, is a predictor for psychological wellbeing among students at a public Midwestern university.

These findings suggest that supporting students who identify as spiritual, particularly those who have either a salient sense of spirituality or are in crisis, has promise to support improving wellbeing measures, consistent with Hettler (1984). Further, this finding, is consistent in other contexts, and suggests that hesitance or reluctance to discuss spirituality on college campuses may come at the cost of student wellbeing. Stated directly, if higher education practitioners aspire to deal with the college mental health crisis seriously, they must be willing to address student spirituality authentically and robustly with students who are are/are becoming/no longer are spiritual. The initiatives, while likely inconvenient and uncomfortable for institutions unsure how to navigate within the tensions of spirituality and pluralism, are much more preferable than the present alternative.

4.3 Academic Performance

Academic Performance, defined in this study as cumulative GPA, semester GPA, and Academic Standing, comprised the third variable of analysis. If spirituality and wellbeing were linked, did this relationship extend to student behaviors that impact academic performance? Did students who were more spiritual than others or who reported higher levels of wellbeing than others also do better in a university setting? In this study, salient spirituality had no significant relationship with academic performance, inconsistent with the limited literature (Trockel, Barnes, & Egget, 2000; Walker & Dixon, 2002). However, spiritual crisis and change was significantly negatively correlated with academic standing, one component of academic performance as measured in this study. In addition, spiritual seeking was slightly yet significantly correlated with previous semester GPA.

Due to the significant, though modest, negative correlations between spiritual crisis and the two outcome variables, psychological wellbeing and academic standing, a mediation analysis was conducted to see if spiritual crisis affected academic standing by way of psychological wellbeing, as hypothesized. When spiritual crisis was regressed on psychological wellbeing and academic standing, it was found to be a significant predictor of each though mediation, ultimately, was not supported in the model. However, in a separate mediation analysis, prayer was found to be an indirect predictor of good academic standing when mediated by psychological wellbeing. More analysis is needed to determine how these variables interact, with other proxies for academic performance considered. GPA, while the standard measure for academic performance, has limitations as variable in describing a student's performance and likelihood of retention and graduation. Future research is needed to determine what relationships, if any, spirituality has with various and sundry measures of academic performance beyond grade point averages. Overall, potentially due to the constraints of the definition used in this study, spirituality and psychological wellbeing showed inconsistent or insignificant relationships with academic performance among students at a Midwestern university.

4.4 Conclusions

This study was concerned with three phenomena: spirituality, psychological wellbeing, and academic performance among college students at public Midwestern University. The factors that affect these phenomena are numerous and there is a no study rigorous enough to account for all of the relevant variables. However, the results from this study have implications for scholars and practitioners alike, addressed at the end of this section.

Firstly, it is clear that students continue to have inner experiences and concerns that encroach upon spiritual or ultimate matters. Most pray and many have strong, salient understandings of their reality buttressed by beliefs and practices that prop up how they live. Many, still, struggle with changes or unexpected evolutions regarding their ontological understandings of reality. Whatever the experience, students' experience of spirituality can, does change, and cannot be separated with their experience of the world.

This connection leads to the second point---linked are spirituality and psychological wellbeing. Students who had higher levels of spirituality also tended to have higher levels of self-reported wellbeing, including its sub-dimensions. It is inaccurate to say that the opposite is true, but more that when a student experiences changes to that framework, this can create crisis linked to lesser psychological wellbeing and its sub-dimensions.

Thirdly, and finally, while needed is more research to understand how, if at all, spirituality helps students perform well academically, more focused attention is needed to replicate, confirm, pilot, modify, and scale interventions to help students in times of spiritual growth or change. Put simply, the link between wellbeing and spirituality has implications for research and practice.

5. Implications for Practice

The results of the study may serve as, at best, an illumination and, at worst, a warning, about an aspect of the mental health crisis on college and university campuses. If college and universities continue to, actively or passively, ignore the ultimate concerns of college students, colleges and universities will experience ultimate consequences. At the very least, faculty and staff can begin by talking more openly about spiritual matters, lessening the taboo surrounding the subject. Fears that this will breach constitutionally protected rights are unlikely realized and dissipate under almost universal commitment to academic freedom. An inclusive understanding of spirituality, like one proposed by Hood, Hill, and Spillka (2018), promoted a dialogue that transcends yet includes religion. Continued silence about this topic may not only be disingenuous given our understandings of each other, it may be dishonest given our understandings of ourselves.

In addition, practitioners can create spaces to support the growth and development of spirituality across the student lifecycle. Expecting and anticipating for development, curricula, service learning, organizations, ecumenical campus ministers, and pro-spiritual policies can create environments that support students as they are and as they are becoming. Advisors can, similar to other known student crises that the advisor has no direct experience with, receive training on how to support and guide students encountering existential crises. Other university staff can learn to probe beyond the common transitional concerns of students, moving beyond the superficial, to the spiritual. Institutions can do this without preferring one expression of spirituality or religion to another. To ensure that programs, and policies are effective, scholars can, emboldened with academic freedom, look deeper into the relationships between these phenomena and share the voices of students who have these experiences.

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