

Spirituality and the Health of College Students

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ABSTRACT: Objectives: The purpose of this study was to examine the relationship between spirituality and health risks of college students. *Methods:* Undergraduate students enrolled in Personal Health and Wellness classes at The University of Tennessee were selected to participate in the study. Two-hundred twenty-one students were administered two instruments: The College Student Appraisal of Risks Survey (The CARS) and the Spirituality Scale (SS). *Results:* Significant relationships between self-reported levels of spirituality and the health of college students were indicated during the study. *Conclusions:* College students integrating a spiritual component while processing decisions about risks that could negatively affect their health experienced better health outcomes. The significance of the study is that this research is an important step toward understanding the role that spirituality plays in the various dimensions of health in young adults.

KEY WORDS: college students; young adults; physical health; emotional health; spirituality; health risks.

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Introduction

The current investigation was conducted to determine if there was a relationship between spirituality and the health of college students. The World Health Organization (WHO) defines health as “a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity” (p. 100). Perrin and McDermott (1997) reinforce WHO’s definition, expressing that health is not a passive state of being, but a dynamic process in which higher levels of wellness can be achieved. Miller and Thoresen (1999) write, “as wisdom is not merely the absence of ignorance, nor courage the absence of fear, so health is surely more than a lack of disease...” (p. 4).

In 1976, William Hettler introduced the Six Dimensions of Wellness, a multidimensional hexagonal model of health and wellness including physical, mental, social, occupational, intellectual and spiritual dimensions (Hettler, 2004, Cover page). Hettler’s model broadens WHO’s definition of health and firmly grounds recent research (Perrin & McDermott, 1997; Miller, & Thoresen, 1999) acknowledging health as a more comprehensive and holistic concept. In the Holistic Wellness Model, Chandler, Holden, and Kolander (1992) define Hettler’s six dimensions of wellness as interrelational and interactive and introduce the dimension of spirituality, in partnership with a personal component, at the nucleus of this multidimensional exchange.

A concrete definition of spirituality has confused and challenged today’s experts. Koenig, McCullough, and Larson (2001) place importance in defining religion and spirituality stating the necessity for detailed definitions that can be “operationalized for research purposes” (pp. 17,18). The majority of the literature reviewed concurs with Tuck, Wallace, and Pullen (2001) that, in terms of operationalization and measurement, researchers have not been able to agree on a universal definition of spirituality. Some define spirituality as intrinsically based beliefs in which personal values are used for guidance in day-to-day living (Mackey & Sparling, 2000). Another definition describes spirituality as an article of faith, characterizing a spiritual human being as one who possesses “a right relationship with all that is” (Kaiser, 2002). Using Viktor Frankl’s theoretical basis for spirituality, O’Neil and Kenny (1998) describe an individual’s spirituality as the core of one’s existence. Koenig (2002) suggests that for most individuals spirituality is what gives significance and purpose to their lives.

As institutions of higher learning begin to address the importance of spirituality, some like Jacobsen and Jacobsen (2004) assert that scholars are actively debating secularization, “recognizing thereby the continuing, and perhaps even increasing, strength of spirituality (if not always institutionalized religion)...on the nation’s college campuses” (p. 6). The role of religious habits and attitudes that were once ignored is being addressed by academic leaders in an attempt to advance students’ inner development, in which,

spirituality resides (Coday, 2003). Cavendish et al. (2001) explain that young adults, in particular, are exploring spirituality and describe individuals between the ages of 18 and 24 as operating with newly discovered abstract thought, questioning and drawing upon their own conclusions about world-views. Webber (2002) describes the young adult as actively pursuing a reason for existence and, at times, the search for self is equated with a search for God, a search not always manifested through traditionalized religion. Nonetheless, young adults are seeking spirituality. The author continues, stating that "...there is a hunger for meaning among young people...there is a desire for belonging and to find purpose in life" (p. 42).

The significance of spirituality, as it relates to college students in young adulthood, contributes to overall health and well-being of the individual, especially when observed within multidimensional domains such as represented in the Holistic Wellness Model. Addressing the multiple dimensions of health, Payne, Hahn, and Mauer (2005) explain that college students are particularly susceptible to emotional vulnerability, thereby experiencing feelings that may lead to rejection and failure, reducing their opportunity to be productive and satisfied with life. When analyzing the health trends among college freshman, Sax (1997) discovered that within the ten year period between 1985 and 1995, students' confidence in their perceived level of emotional health had decreased 10%, from 60.3% to 53.2%. In contrast, Hettler (2004) describes emotional healthy college students to be more likely to approach life positively and responsibly. A relationship between positive emotional health and religion is supported by Frankel and Hewitt (1994), who examined the role of faith groups on a Canadian college campus. In regard to religion and well-being, the study found that groups affiliated with religious organizations on campus reportedly were happier ($t = 3.27$; $p < .01$) and more satisfied with life ($t = 4.39$; $p < .001$) than the nonaffiliated student group.

Larson, D.B. and Larson, S.S. (2003) cite significant evidence indicating young adults, who are more religious, tend to be less likely to experiment with alcohol, drugs, and tobacco. Of 14,000 youths surveyed, researchers found that the more religiously committed, the less likely young adults were to experiment with drugs. A study by Wechsler, Seibring, Liu, and Ahl (2004) revealed that 81% of college administrators reported the use of alcohol by college students as a problem on campus, of which 15% considered it a major problem. Grace (1997) cites numerous studies that indicate heavy episodic or binge drinking exceeds 40% on college campuses. College students, who drink alcohol, are more likely to partake in risky health behaviors, e.g. operating a vehicle under the influence of alcohol, binge drinking, drugs, violence and permissive sexual behavior that could negatively affect themselves and the community as a whole (Grace, 1997; Larson, D.B. & Larson, S.S., 2003; Payne et al., 2005). This is consistent with other studies addressing tobacco and alcohol-related health issues on college campuses. The relationship between smoking and the student's level of spirituality was one factor examined by Hestick, Perrino, Rhodes, and Sydnor

(2001) when assessing the extent of cigarette smoking and identifying health risk factors. The study found that whether or not a student chose to smoke contributed, in part, to their level of spirituality and that the individual's level of spirituality was a strong predictor against lifetime smoking.

A recent study by Lenz (2004) discovered that 32% of college students reported tobacco use during the past month. Payne et al. state that while the prevalence for cigarette smoking for college students has decreased in recent years from 21% to 14%, a recent study suggest an upward trend in cigarette use indicating an incidence of 36% in 2004. In addition, a comparative study by Patterson, Lerman, Kaufmann, Neuner, and Andrain-McGovern (2004) identified ethnic differences on college campuses paralleled with tobacco use. White students were more likely to smoke than African American or Hispanic counterparts. Other findings in this study included students that lived in restrictive housing and participated in physical activity were less likely to smoke. In addition, psychological factors such as stress, mood and coping strategies were more likely heightened among students who smoked.

In summary, there has been limited research on the relationship of the health status of college students and their self-reported level of spirituality. Cavendish et al. (2001) expressly delineate the need for and examination of the significance of the role of spirituality and how it plays a part in the lives of well young adults, between the ages of 18 and 24, stating that this population has not been widely studied and understanding of this age group has been limited. Thus the problem for this study was whether or not college students, who intrinsically value spirituality in their life, exercise healthier lifestyle behaviors resulting in better health, well-being and quality of living.

Method

Instruments

The instruments used in the study included the Spirituality Scale (SS), a thirteen item scale that measures the construct, spirituality and The College Student Appraisal of Risks Survey (The CARS), a health risk appraisal that assesses health risk factor values and mortality statistics of college students. A 12 item spirituality scale was originally developed by the principal investigator in a previous study at The University of Tennessee.¹ The goal was to

¹To fulfill academic requirements at The University of Tennessee for a class entitled, *Seminar in Applied Psychometrics* facilitated by Professor John W. Lounsbury, Dr. Nelms implemented a study to develop and establish the reliability and construct validity of an instrument to measure spirituality. The completed scale is entitled the Spirituality Scale (SS). Further explanation of the scale development/validation and a copy of the scale can be found in the following resource: Nelms, L.W. *The Relationship between Spirituality and the Health of College Students in a University Setting* [electronic dissertation]. Knoxville, TN: The University of Tennessee; 2005.

Table 1**Results of Internal Consistency Reliability Estimates of the 12-Item Spirituality Scale (SS)**

Cronbach's alpha	Cronbach's alpha Based on Standardized Items	<i>N</i> of Items
.926	.926	12

create an instrument that was brief and easy to use and could provide meaningful and useful results in measuring spirituality. Spirituality was defined as a belief system characterized as having a presence of God, Creator, or Higher Power serving as an inner voice, making life more meaningful, imparting a feeling of a higher purpose in life and contributing to an individual's level of health, well-being and quality of living.

In the initial psychometric study of the SS, reliability and validity were evidenced. The internal consistency estimate using Cronbach's alpha yielded a coefficient of .93 ($\alpha = .926$) for the 12-item scale (Table 1). As evidence of construct validity, the SS, which purports to measure spirituality, should show convergent and discriminant validity, subcategories of construct validity. Convergent validity was evidenced by the correlations within the construct, spirituality. The correlations between items in the SS were significant. The high-item intercorrelations for all item pairings ranged from $r = .392$; $p < .01$ to $r = .701$; $p < .01$. The correlations provide support that the items are related to the same construct. Discriminant validity was examined by looking at the cross-construct correlations between the SS and four construct subscales chosen from the Neuroticism-Extraversion-Openness Personality Inventory, Revised (NEO-PI-R) scale facets (Costa & McCrae, 1985). The NEO, or better known as the "Big Five Inventory" measures five domains of personality dimensions namely, Openness, Conscientiousness, Extraversion, Agreeableness and Neuroticism, which each are then broken down into six subscales. The four subscales that were chosen included Anxiety (Neuroticism), Positive Emotions (Extraversion), Feelings (Openness) and Tender-mindedness (Agreeableness). The cross-construct correlations ranged from $r = .13$ to $r = .35$.

Table 2**Results of Internal Consistency Reliability Estimates for 13-Item Spirituality Scale (SS)**

Cronbach's alpha	<i>N</i> of Items
.956	13

Table 3**Inter-Item Correlations in the Spirituality Scale (SS)**

	1	2	3	4	5	6	7	8	9	10	11	12	13
1	1												
2	.72*	1											
3	.49*	.65*	1										
4	.57*	.62*	.32*	1									
5	.64*	.70*	.46*	.60*	1								
6	.74*	.76*	.52*	.68*	.76*	1							
7	.53*	.56*	.45*	.60*	.58*	.69*	1						
8	.63*	.71*	.53*	.57*	.60*	.65*	.57*	1					
9	.66*	.72*	.51*	.56*	.65*	.74*	.55*	.74*	1				
10	.65*	.73*	.48*	.63*	.65*	.77*	.59*	.59*	.68*	1			
11	.70*	.81*	.56*	.61*	.67*	.73*	.61*	.73*	.72*	.72*	1		
12	.55*	.64*	.52*	.57*	.48*	.63*	.58*	.63*	.57*	.60*	.69*	1	
13	.65*	.70*	.52*	.72*	.76*	.79*	.59*	.62*	.67*	.78*	.70*	.64*	1

*Correlation is significant at the 0.01 level (2-tailed).

Upon establishing reliability and the validation of the original Spirituality Scale, the principal investigator found that increased reliability of the scale would result with the inclusion of an additional item, therefore a thirteenth item was added to the SS. In the present study, a reliability analysis using SPSS 12.0 for Windows was computed and the internal consistency reliability estimates were determined by using Cronbach's alpha (α) which yielded a coefficient alpha of .96 ($\alpha = .956$), further evidence of the reliability of the SS instrument (Table 2). The high-item inter-item correlations for all item pairings ranged from $r = .32$; $p < .01$ to $r = .81$; $p < .01$ (See Table 3). Ratings for the instrument were given on a 5-point Likert scale format where (1) indicated Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, and (5) Strongly Agree. The mean strength for the SS score among the participants in the study was 3.97 ($SD = .78$) (Table 4).

The College Student Appraisal of Risks Survey (The CARS) is a six-page, self-administered survey comprised of seventy-three health questions relating to baseline data which addresses the multidimensional components of the college student's health and elicits information about health risk factors that, once identified in an individualized health profile, may be reduced by the respondent. Due to the sensitive material addressing certain health behaviors e.g., sexual behavior of college students, in The CARS instrument, thirty of the seventy-three questions were omitted in order to obtain a Letter of Acceptance from the Institutional Review Board (IRB) at The University of Tennessee.

Table 4**Mean Responses for 13-item Spirituality Scale (SS)**

Item Statistics	Mean	Std. Deviation	N
1. My spiritual beliefs help me to be a better person	4.23	.889	154
2. My spirituality is at the core of who I am	3.70	1.061	154
3. My spirituality is my inner voice speaking to me	3.58	1.058	154
4. I believe God, Creator or Higher Power is present in my life	4.59	.653	154
5. My spiritual beliefs are the foundation for my religious background	4.14	.984	154
6. My spiritual beliefs make my life more meaningful	4.12	.945	154
7. I feel as if my life has a higher purpose	4.19	.927	154
8. My spiritual beliefs positively impact my health and well-being	3.94	.978	154
9. My spiritual beliefs guide my relationships with other people	3.88	.970	154
10. I would feel lost without my spiritual beliefs directing my life	3.70	1.097	154
11. I am a very spiritual person.	3.45	1.023	154
12. I try to be a spiritual person	3.93	.856	154
13. My spirituality is my personal connection with God or a Higher Power	4.14	.946	154

Therefore, for the purposes of this study, only the first four pages of the self-administered survey comprised of forty-three health questions were addressed and completed by the respondents. To address each research question independently, demographical questions included on the SS scale and specific questions within the 43 questions framework of the CARS instrument were used to reflect the variables presented for the current research (Table 5).

Sample

The target for this study was a convenience sample of university students from the Health and Safety Programs of the College of Education, Health and Human Sciences at The University of Tennessee. The participants were 221 students enrolled in six *Personal Health and Wellness* courses during the 2004

Table 5**Variable List**

Name of Variable	Scale	Items Used for Analysis
1. Spirituality	SS	Scale [SPIRIT]
2. Current health status	SS	D4. Which of the following best describes your current health status? [CURRHLTH2]
3. Overall physical health	CARS	35. Considering your age, how would you describe your overall physical health? [OVERALLHEALTH2]
4. Physical activity	CARS	36. In an average week, how many times do you engage in physical activity (exercise or work which lasts at least 20 minutes without stopping and which is hard enough to make you breathe heavier and your heart beat faster)? [ACTIVITYLEVEL]
5. Life satisfaction	CARS	40. In general, how satisfied are you with your life? [LIFSATIS2] 41. Have you suffered a personal loss or misfortune in the past year that had a serious impact on your life? [LOSSES2]
6. Tobacco- related risk behaviors	CARS	12. How many cigars do you usually smoke per day? 14. How many times per day do you usually use smokeless tobacco? 16. How many cigarettes a day do you smoke? [NO = Does not use tobacco] [YES = Uses at least one (1) of tobacco product]
7. Alcohol- related risk Behaviors	CARS	23. How many drinks of an alcoholic beverage do you have in a typical week? [Beer + Wine + Wine coolers + Liquor = ALCOHOL]
8. Race	CARS	42a. Race [RACIALGROUP]

fall semester. The data were cleaned and complete data were available for seventy percent ($N = 154$) of the 221 SS survey instruments and 67 percent ($N = 147$) participant The CARS survey instruments. The enrollment schedules, complete with the names identifying students in each of the six health classes, were sent to The Healthier People Network, Inc.² for the purpose of creating individually labeled college student and spirituality scale questionnaires for each of the study participants.

Not directly related to the results of the study but to ensure confidentiality, the combined instruments were distributed in a cover jacket labeled with a random barcode number. In addition, an identification card possessing the same number as the barcode on the health risk appraisal was also attached to the front folder. During the distribution of the instruments, the participants were instructed to remove and retain the ID card to ensure receipt of their personalized computer-generated health risk appraisal. This personalized printout contained the participant's personal lifestyle scores and recommended behavioral changes.

Analyses

Relationships among the self-reported level of spirituality and seven independent variables were examined. The seven independent factors were the self-reported current health risks of college students, overall risk level of physical health, physical activity, life satisfaction, tobacco and alcohol-related health risk behaviors were examined. In addition, the relationship between the self-reported level of spirituality and race was analyzed.

Results

Demographics

The original population in the study included undergraduate college students ($N = 221$) enrolled in *Personal Health and Wellness* health courses in the Health and Safety Programs in the College of Education, Health and Human Sciences at the University of Tennessee in the fall semester of 2004. Upon initial examination of the collected data, a number of missing values were identified in several of the SS and The CARS survey instruments. Ultimately, seventy percent ($N = 154$) participant SS survey instruments were utilized for the statistical treatment in the study and 67 percent ($N = 147$) participant The CARS survey instruments were utilized for the statistical treatment in the study. Thirty percent and 33% of the college student sample measured by the two survey instruments, respectively, were eliminated from the study due to missing values on either or both the SS and The CARs instruments,

²The Healthier People Network, Inc. at Atlanta, Georgia is a non-profit corporation committed to the development and dissemination of Health Risk Appraisals in the public interest.

students were no longer enrolled in the health classes, students chose not to participate at the time the survey instruments were distributed or students were absent on the days of the distribution.

The average age of the participants in the study was 21 years of age. Of the responding participants, 134 (91%) of the participants were between the age of 18–24. Thirteen participants (9%) range in age from 25 to 40. Sixty-seven (46%) were male students and 80 (54%) were female students. The number and percentage of responses from participants in each racial and ethnic group included 2 (1.4%) Aleutian, Alaska native, Eskimo or American Indian, 2 (1.4%) students indicated as Other, 3 (2.1%) Pacific Islander, 29 (20.6%) African American, and 105 White (74.5%) students. The number and percentage of the various residences where students live while attending classes included 1 (.6%) lives in a fraternity or sorority; 2 (1.3%) reported other living arrangements were utilized while attending classes; 11 (7.1%) live at home with parents; 10 (6.5%) live with a spouse and/or children; 13 (8.4%) live alone in an apartment or rented house; 47 (40.5%) live in a dormitory; and 70 (45.5%) live with others in an apartment or rented house. Of those participating in the study, 14% of the participants were Freshmen, 36% were Sophomores, 17% were Juniors, 31% were Seniors and 3% reported Other.

Findings

In examining the relationship of self-reported level of spirituality with current health status of college students, the participants were asked to rate their current health status as either poor, fair, good or excellent. Seventeen participants reported their current health status as poor or fair, scored $M = 3.570$, $SD = 1.078$ on the SS; 95 participants, reported their current health status as good, scored $M = 3.945$, $SD = .759$ on the SS; and 42 participants reported their current health status as excellent, scored $M = 4.187$, $SD = .596$ on the SS.

A one-way ANOVA procedure was employed, to compare the three group mean SS scores with the participant's self-reported health status (Table 6). The ANOVA revealed a statistically significant difference between the three groups and the participants' level of spirituality current health status with

Table 6

ANOVA Reporting for Participant's Self-Reported Level of Spirituality by Current Health Status

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Between Groups	4.752	2	2.376	4.112	.018
Within Groups	87.253	151	.578		
Total	92.005	153			

Table 7**ANOVA Reporting for Participant's Self-Reported Level of Spirituality by Overall Physical Health**

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Between Groups	5.022	2	2.511	4.258	.016
Within Groups	81.373	138	.590		
Total	86.395	140			

regard to the level of spirituality. A Spearman rho correlation ($r = .180$; $p = .026$) determined the strength of association between the participant's self-reported level of spirituality and current health status. While weak, there is an indication that those participants who scored higher on the SS reported a more positive current health status.

In examining the relationship of a self-reported level of spirituality with regard to the overall physical health of college students, the participants were asked to rate their overall physical health as either poor, fair, good or excellent. Twenty participants reported their overall physical health as poor or fair, scored $M = 3.565$, $SD = 1.035$ on the SS; 82 participants reported their overall physical health as good, scored $M = 3.962$, $SD = .768$ on the SS; and 39 participants reported overall physical health as excellent, scored $M = 4.182$, $SD = .589$ on the SS.

A one-way ANOVA procedure was employed to compare the three group mean SS scores with the participant's overall physical health (Table 7). The ANOVA revealed a statistically significant difference between the three groups and the level of overall physical health with regard to the level of spirituality. The group means suggest a trend which indicates that as spirituality increases, the participant's self-reported overall physical health increases. A Spearman rho correlation ($r = .186$; $p < .027$) was used to determine the strength of association between the participant's self-reported level

Table 8**ANOVA Reporting for Participant's Self-Reported Level of Spirituality by Physical Activity**

	Sum of Squares	<i>df</i>	Mean Square	<i>F</i>	Sig.
Between Groups	4.990	2	2.495	4.232	.016
Within Groups	80.756	137	.589		
Total	85.745	139			

of spirituality and overall physical health. Those participants who scored higher on the SS reported a greater, more positive overall physical health.

In examining the relationship of a self-reported level of spirituality with regard to the physical activity of college students, descriptive statistics indicate that 22 participants, who reported spending less than one time per week on physical activity, scored $M = 3.535$, $SD = .962$ on the SS; 39 participants, reporting physical activity 1 or 2 times per week scored $M = 3.972$, $SD = .819$ on the SS; and 79 participants reporting physical activity at least 3 times per week scored $M = 4.073$, $SD = .678$ on the SS.

A one-way ANOVA procedure revealed a statistically significant difference between the three groups and the level of physical activity with regard to the level of spirituality (Table 8). The ANOVA revealed a statistically significant difference between the three groups and the level of physical activity with regard to the level of spirituality. Participants with an increased level of physical activity scored higher on the SS.

Participants were asked whether they were (1) mostly satisfied, (2) partially satisfied or (3) not satisfied with their life. Due to the small number of participants who indicated that they were not satisfied with their life (1.9%), this group was combined with the participants who indicated that they were partially satisfied with their life (22.7%). Of the 139 participants that responded, 73% indicated that they were mostly satisfied. In examining the relationship of a self-reported level of spirituality with regard to life satisfaction of college students, SS scores indicated that 27% of participants reported being unsatisfied with life ($M = 3.652$, $SD = .878$) while those who reported being mostly satisfied scored $M = 4.085$, $SD = .726$. The means of the two groups were compared using an independent-samples *t*-test ($t = -2.959$, $df = 137$, $p = .004$) which indicated significant group differences.

As an addendum to the life satisfaction factor, 54 participants reported that they had suffered a personal loss or misfortune in the past year which had an impact on their life, scoring $M = 3.903$, $SD = .808$ on the SS and 85 participants reported that they had not suffered a personal loss or misfortune in the past year, scoring $M = 4.012$, $SD = .781$ on the SS. An independent-samples *t*-test compared the means of the two groups ($t = -.789$, $df = 137$, $p = .431$). The lack of group differences showed that the participant's self-reported level of spirituality was not affected by previous loss or misfortune.

Tobacco-related health risk behavior was calculated from the number of cigars, cigarettes and smokeless tobacco reportedly used by the participants in the past two years. Twenty-nine participants, reporting that they used tobacco, scored $M = 3.655$, $SD = .778$ on the SS and 118 participants, reporting that they have never used tobacco, scored $M = 4.054$, $SD = .762$. The means of the two groups were compared using an independent-samples *t*-test procedure ($t = 2.515$, $df = 145$, $p = .013$) showing a significant difference between the group means. Participants who indicated that they never used

Table 9**Descriptives Reporting Participant's Self-Reported Weekly Alcohol Consumption**

	<i>N</i>	Minimum	Maximum	Mean	<i>SD</i>
Alcohol	99	1.00	50.00	13.283	11.131
Beers Per Week	80	1	35	11.33	9.507
Liquor Per Week	78	1	15	4.12	3.036
Valid <i>N</i> (listwise)	62				

tobacco produced a higher self-reported level of spirituality than those participants who used tobacco.

In examining the relationship between a self-reported level of spirituality with regard to alcohol related health risk behavior, ninety-nine (69.5%) participants consume, on a weekly basis, one (1) to fifty (50) alcoholic beverages, with a mean score of thirteen (13) drinks ($M = 13.283$, $SD = 11.131$), consisting either of beer, wine, wine coolers or liquor. Beer, with a mean score of eleven (11) drinks ($M = 11.33$, $SD = 9.507$) and liquor consumption, with a mean score of four (4) drinks ($M = 4.12$, $SD = 3.036$) account for the most alcohol consumed by the reporting participants (Table 9). A Spearman rho revealed that the SS score and the participants' weekly alcohol consumption were significantly negatively correlated ($r = -.327$; $p < .001$) indicating that as alcohol consumption increased, the participants' self-reported level of spirituality decreased. Only descriptives reporting the participant's self-reported weekly alcohol consumption were analyzed. The analysis did not include non-drinkers.

To determine if significant group differences exist between African American and White college students and a self-reported level of spirituality, twenty-nine (29) African American participants scored $M = 4.374$, $SD = .382$ on the SS and one-hundred five (105) White participants scored $M = 3.865$, $SD = .833$. An independent-samples *t*-test was used to compare the means of the two groups ($t = 4.721$, $df = 102$, $p < .001$) indicating that there was a significant difference in the participants' self-reported level of spirituality between African American and White college students. Although the number of African American participants was somewhat limited, the data suggest a trend that the African American participants may regard spirituality differently than the White study participants.

Comment

The research findings in this study were consistent with the hypothesis that there is a statistically significant relationship between spirituality and the

self-reported health of college students in a university setting. The conclusions are based upon the analysis of the research questions that were designated to determine if certain health areas, risks and behaviors, of particular interest when studying the college student population, were correlated with the students' self-reported level of spirituality. The lack of investigation with regard to spirituality and the health of young adults fueled the importance of the research. Additionally, results were consistent with regard to a self-reported level of spirituality and the ethnicity of the study population. The validity and reliability of the Spirituality Scale (SS) were also found to be consistent with initial psychometric study.

Based upon the results presented in this study, the following conclusions were drawn: (1) The positive relationship that exists between the college students' current self-reported health status and overall health with regard to a self-reported level of spirituality suggests that college students who regard themselves as healthy individuals appear to be integrating a spiritual component into the concept of what defines health and wellness for the individual. (2) The positive relationship between the college students' increased participation in physical activity, e.g. exercise or work with regard to a self-reported level of spirituality is evidence that college students may be integrating a spiritual component with in their pursuit of physical fitness. Because few studies were found with regard to a level of spirituality and physical activity particularly, for young adults, the need for further investigation into the relationship between spirituality and physical activity of young adults is evident. (3) The positive relationship between college students, who reported experiencing more life satisfaction with regard to a self-reported level of spirituality is an indication that college students are integrating a spiritual component into the emotional dimension of health.

The integration of a spiritual component suggests a more harmonious and enlightened experience when confronting emotional challenges. College students in the current study, who reported suffering a personal loss[es] or misfortune[s] within the past year was found not to be significant. Therefore, while spirituality is significantly related to life satisfaction, there is no evidence indicating that an individual's level of spirituality is related to personal loss or misfortune, life stressors associated with defining a level of life satisfaction. While an individual's level of spirituality may contribute to an overall state of perceived life satisfaction, the college student may counter specific stressful life events using other strategies not identified in the current study. In a study by Kolchakian and Sears (1999), who examined the health promoting effects of religious coping, the investigators found that religious coping may be used only in extreme cases of severe life stress and that college students were more likely to utilize family and social encounters to relieve stressful episodes. Although not addressed in the current study, a similar explanation may exist for the lack of association between a self-reported level of spirituality and personal loss and/or misfortune. (4) The positive relation-

ship between college students, who are less likely to practice risky tobacco-related health behaviors, with regard to a self-reported level of spirituality is evidence that college students are integrating a spiritual component into the social, emotional and physical dimensions related to health and well-being. Non-smoking college students, fortified with spirituality, are less likely to succumb to peer pressure in regard to using tobacco, more likely to promote healthy behavior, practice independence and experience better physical health. (5) The positive relationship between college students, who are less likely to drink alcohol, with regard to a self-reported level of spirituality, indicate that college students are integrating a spiritual component into the social, emotional, and physical dimensions of health. (6) Finally, although there were group differences between African American college students and White college students with regard to a self-reported level of spirituality, due to insufficient numbers in the African American study population, making comparisons in this study based on race and ethnicity, was not possible.

The study was conducted with the assumption that the participants were a representative sample of the college students from a university setting and that the participants understood how to answer the questions posed by the self-reporting CARS health risk appraisal and the SS spirituality scale. Delimitations of the study included research confined to a convenience sample of college students who participated in a health course³ at The University of Tennessee. In addition, the study was restricted to only those specific health areas extracted from The CARS instrument and addressed in each of the research questions. Limitation of the study included self-reports that may not have accurately depicted the health status and risky health behaviors of the college student. The findings in this study are limited and cannot be generalized to other college students at The University of Tennessee or other universities.

Implications which evolved from the study included the following: (1) Although spirituality is significantly related to life satisfaction, the study produced no evidence indicating that an individual's level of spirituality is related to personal loss or misfortune, life stressors which could be associated with defining a level of life satisfaction. The implications of this finding may indicate that while an individual's level of spirituality may contribute to an overall state of perceived life satisfaction, the college student may counter specific stressful life events using other strategies not identified in the current study. Kolchakian and Sears found that religious coping may be used only in extreme cases of severe life stress and that college students were more likely to utilize family and social encounters to relieve stressful episodes. Although

³The course is entitled *Personal Health and Wellness* and the text used is Payne WA, Hahn DB, Mauer EB. *Understanding Your Health*. 8th ed. Boston: McGraw-Hill; 2005. One of the central themes of the text used in this course is the multiple dimensions of health namely, physical, emotional, social, intellectual, spiritual and occupational.

not addressed in the current study, a similar explanation may exist for the lack of association between a self-reported level of spirituality and personal loss and/or misfortune. (2) Health, from a holistic viewpoint, involves several dimensions namely, biological, emotional, social, intellectual, spiritual and occupational. A review of the literature produced no studies with regard to a level of spirituality and physical activity particularly, for young adults. Findings of this study included a positive relationship between the college students' increased participation in physical activity, e.g. exercise or work with regard to a self-reported level of spirituality. This implication represents a need for further investigation into the relationship between spirituality and physical activity in young adults. (3) Finally, the findings suggested that the African American student sample embraces spirituality somewhat differently than the White student sample. The study revealed significant group differences among the groups with regard to a level of spirituality and health risk factors associated with a university setting. While the percentage of African American participants was low, the group differences did imply the need for further study of cultural characteristics contributing to the relationship between spirituality and health.

To determine more precisely the effectiveness of the relationship between spirituality and health, further research should be conducted. Areas in which future study may broaden the concepts introduced in the current study include the following recommendations for future research: (1) research additional major health risk issues conducive to the college student population including sexual behavior, drug use, violence and suicide, (2) research other population samples e.g., college students enrolled in other disciplines in university settings using the same instruments, (3) address health risk issues that involve cultural characteristics of diverse student populations, and (4) research the physical activity of college students with regard to the level of spirituality.

Overall, the current study found a relationship between a self-reported level of spirituality and the health risks of college students in a university setting. The conclusions suggest that young adults are partnering a spiritual component with other health dimensions to address today's important health issues. Understanding the significance of the role spirituality plays in other health dimensions should lead to a better understanding of its contribution to health and wellness within the university community as a whole.

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