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THE DEVELOPMENT OF A MULTIDIMENSIONAL
SPIRITUALITY QUESTIONNAIRE
AND ITS RELATIONSHIP WITH QUALITY OF LIFE

by

Laura L Fazakas-DeHoog

Department of Psychology

Submitted in partial fulfillment of the requirements
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Faculty of Graduate Studies
The University of Western Ontario
London, Ontario

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ABSTRACT

To date, although research has supported a complex multidimensional conceptualization of spirituality, most extant measures assess spirituality in terms of only one or two components. The Spirituality Questionnaire, which assesses the ritualistic, experiential, ideological, and functional aspects of spirituality, provides a broad measure that is consistent with a multidimensional conceptualization of spirituality. Based on the responses of 222 first year university students, the four scales of this 40 item questionnaire were developed utilizing the Rational-Empirical method of test construction. The four scales have high internal consistency, as well as good construct validity, as measured by significant positive correlations with several measures of subjective well-being. The four developed scales, as well as the internal consistency and construct validity of the Spirituality Questionnaire were replicated in a second and third study using cross validation samples of 210 and 242 first year university students. The construct validity of this new measure was further established in the third study, where the Spirituality Questionnaire was found to have significant positive correlations with measures of Intrinsic Religiousness and Purpose in Life, but no significant correlation with Extrinsic Religiousness. In a preliminary investigation of the discriminant validity of the Spirituality Questionnaire, mean subscale and total scores from this new measure differed significantly for individuals who had no religious affiliation, and those who reported an affiliation with a specific religion. Additional research is required to further establish the discriminant validity of the Spirituality Questionnaire, as well as the degree to which this new measure can be generalized to the larger population for use with

various religious groups. The Spiritual Behavior and Experience Checklist was developed as an extension of the Spirituality Questionnaire. The four scales of this measure, including the Experiential, Spirituality Seeking, Ritualistic, and Functional scales, were developed utilizing the Rational-Empirical method of test construction. The four scales of the Spiritual Behavior and Experience Checklist have excellent internal consistency, and good construct validity, as measured by highly significant positive correlations with several related constructs including Purpose in Life, Intrinsic Religiousness, the four scales of the Spirituality Questionnaire, and several measures of subjective well-being. Further research is required to establish the test-retest reliability and discriminant validity of this new measure.

A growing number of researchers have criticized current models of subjective well being as incomplete, and have urged theorists to include a spiritual component in subsequent models of quality of life. As such, a secondary goal of the present study involved testing a hypothetical model relating spirituality and quality of life. In the first study, the results of the structural equation modeling were indicative of a reciprocal relationship between spirituality and quality of life. This reciprocal relationship between spirituality and quality of life was further supported by the results of structural equation modeling in the second and third study. On the basis of the results of the three studies reported, it was concluded that spirituality should indeed be integrated into subsequent models of quality of life. Implications of the present findings and limitations of the studies presented herein were discussed. In addition, directions for future research were recommended.

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CHAPTER 1: INTRODUCTION

Numerous authors have proposed that holistic client care should involve a dynamic interplay between mind, body and spirit. Ellison (1983) rather eloquently stated the importance of the human spirit, in the following passage. "It is the spirit of human beings which enables and motivates us to search for meaning and purpose in life, to seek the supernatural or some meaning which transcends us, to wonder about our origins and our identities, to require morality and equity. It is the spirit which synthesizes the entire personality and provides some sense of energizing directions and order. The spiritual dimension does not exist in isolation from our psyche, or soma, but provides an integrative force" (Ellison, 1983, p. 335).

Numerous researchers have reported findings that support a strong relationship between various religious factors and health and well-being. After a comprehensive review of more than two hundred relevant articles, Levin and Schiller (1987) reported that involvement in religion, is highly correlated with positive health outcomes. This relationship applies to both physical and mental health domains (Baker & Grosuch, 1982; Gartner, Larson, & Allen, 1991).

Researchers have also investigated the relationship between health and subjective well-being. Quality of life or subjective well-being has been reported to be related to both health and psychological well-being (Evans, Thompson, Browne, Barr, & Barton 1993; Evans, 1997), as well as physical well-being (Hawkins & Larson, 1984). Evans (1994,

1997) has recommended that health may be promoted by increasing quality of life, at either the level of the individual or the population at large. Further, researchers have recommended that spirituality should be considered an important factor in models of quality of life (Poloma and Pendleton, 1991).

Researchers have reported that a number of particular components of spirituality have been found to be correlated with subjective well-being. A belief in God (Kehn, 1995), and the reporting of peak experiences (Poloma & Pendleton, 1991) have been found to be positively associated with subjective well-being. A clearly defined purpose in life has also been demonstrated to have a small, but significant positive correlation with subjective measures of life satisfaction (Chamberlain & Zika, 1988, Bissell & Hardin, 1995). Further, individuals who reported having experienced the presence of God or a higher power (Poloma & Pendleton, 1991), or a close affiliation with God or a "divine other" (Pollner, 1989), also reported higher measures of quality of life, as compared to those individuals who have not reported experiencing a divine presence.

The results of studies designed to assess the relationship between church attendance and subjective well-being have been mixed. Although Kehn (1995) found that church attendance had a negative correlation with quality of life, Hadaway (1978) reported that church attendance had been found to have a positive correlation with subjective well-being. In general, both religious beliefs, as well as participation in religious activities have been found to be positively correlated with high measures of subjective well-being (Diener, 1984).

Further, spiritual beliefs are important for the vast majority of North Americans.

The results of a large survey reported by Gallup & Castelli (1989), indicated that approximately 95% of North Americans believed in God and valued spirituality, and that approximately 50% of these individuals were actively involved in regular religious activities, such as church attendance. Despite the well-documented importance of religious beliefs and behavior, the spiritual component is typically forgotten or ignored in programs designed to enhance health and well-being (Duhl, 1986; Archer, Probert & Gage, 1987; Brack, Brack, & Carlson, 1997).

Researchers also have criticized available models of subjective well-being, as being incomplete, and have urged theorists to include spiritual or religious variables in subsequent models of quality of life (Moberg & Brusek, 1978; Moberg, 1979; Poloma & Pendleton, 1991). However, before spirituality can be integrated into available models of quality of life, the relationship between spirituality and subjective well-being requires further investigation. Thus, one goal of the present study was to test a hypothetical model relating spirituality and quality of life. As was previously discussed, many aspects of spirituality, including a belief in God (Kehn, 1995), the reporting of religious beliefs (Diener, 1984), personally experiencing the presence of God or a higher power or peak experiences (Poloma & Pendleton, 1991), and participation in religious activities (Diener, 1984) have been found to be positively correlated with high measures of subjective well-being. Thus, in the present study it was hypothesized that a significant and positive reciprocal relationship would be found between spirituality and quality of life (see Figure 1).

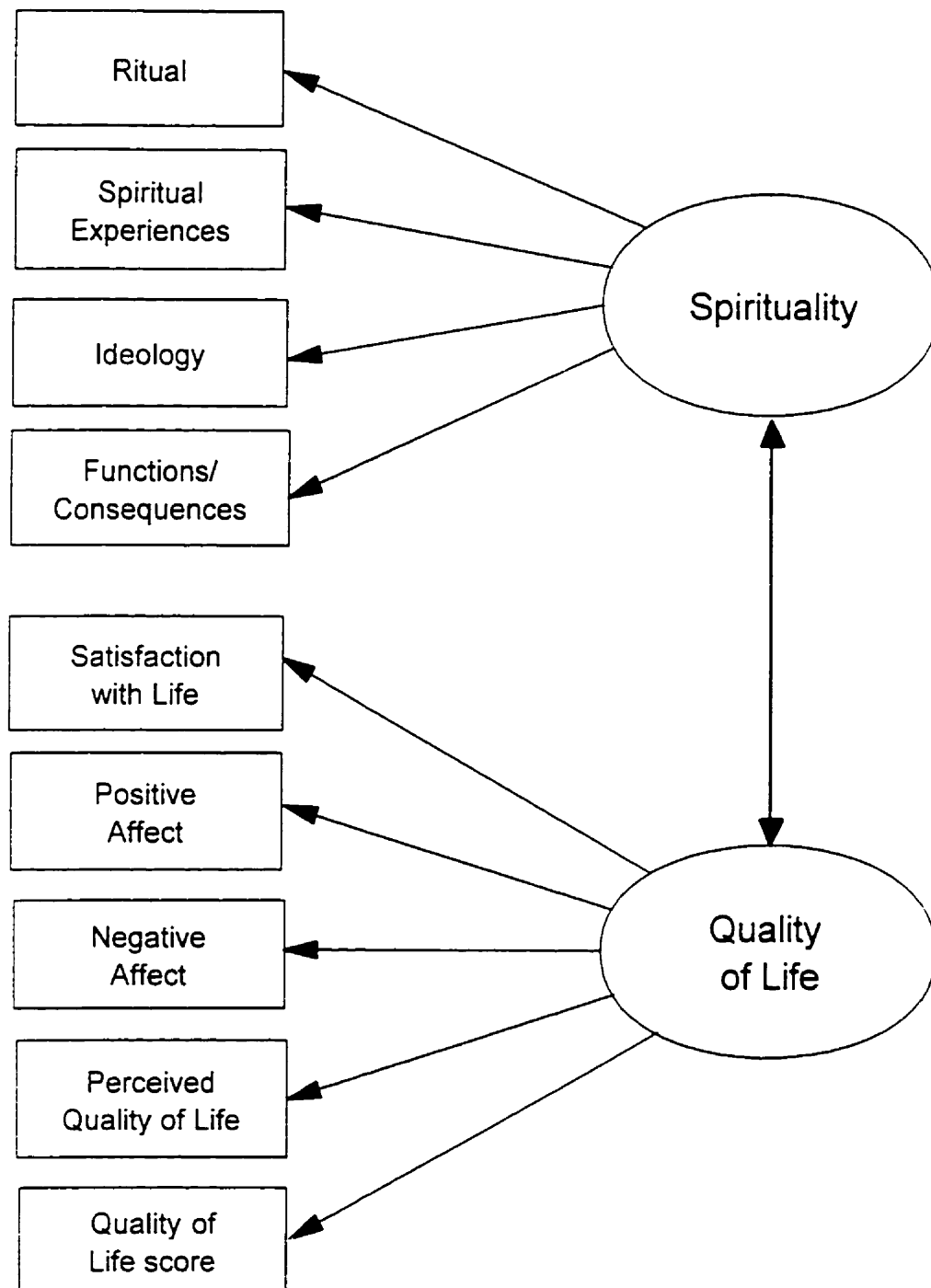


Figure 1. Hypothetical Model Relating Spirituality and Quality of Life

When testing the proposed hypothetical model between spirituality and quality of life several measures were utilized to measure the construct of quality of life. Researchers have reported that quality of life involves both an affective and a cognitive component (Diener, 1984). In the present study, the affective component was assessed using the Positive and Negative Affect Scale (Watson, Clark & Tellegen, 1988), and the cognitive component was assessed utilizing three measures of quality of life including the Satisfaction with Life Scale (Diener et al., 1985), the Perceived Quality of Life Scale (Pellizzari, 1992), and a shortened version of the Quality of Life Questionnaire (Evans & Cope, 1989). Research has supported significant positive correlations between these measures of quality of life, with the exception of negative affect, which is generally found to be negatively correlated with measures of subjective well being (Evans, 1997).

A comprehensive review of extant literature was conducted to identify a reliable and valid measure with which to assess spirituality in the proposed model. However, all of the measures which were identified were associated with serious conceptual or psychometric limitations. Thus, another primary goal of the present study involved the development of a reliable and valid comprehensive measure of spirituality.

Review of Extant Measures of Spirituality

One of the earlier measures of religiosity, the Intrinsic/Extrinsic Religious Orientation scale was published by Allport and Ross (1967). According to these researchers, religiosity was best conceptualized as a one-dimensional trait, with Intrinsic Religious Orientation, and Extrinsic Religious Orientation at opposite ends of this continuum. Individuals who measured high on Intrinsic Religious Orientation, were those

individuals who experienced religion as a primary motivating factor, which was fully integrated into their lives. In contrast, those individuals who measured high on Extrinsic Religious Orientation, were those individuals who utilized religion to obtain specific goals, such as securing social status or emotional and social support. (Allport & Ross, 1967). However, in subsequent studies, it was found that many individuals highly endorsed items on both the Intrinsic and Extrinsic Religious Orientation scales. If the Intrinsic and Extrinsic scales measure opposite ends of a single continuum, as Allport and Ross had proposed, any given individual should measure high on only one of these scales, but not both. Allport & Ross (1967) explained these findings by suggesting that some individuals tend to indiscriminately endorse all items with religious content in either a positive or negative manner. Thus, two new categories, "indiscriminate pro-religiousness" and "indiscriminate anti-religiousness" were developed for such religious "yeasayers" or "naysayers" respectively.

However, there is an alternative explanation why an individual may simultaneously endorse items on both the Intrinsic and Extrinsic scale, and consequently receive a high score on both scales. Specifically, it is possible that Intrinsic and Extrinsic Religiousness are actually distinct constructs, that do not represent opposite ends of a single continuum, as was originally proposed by Allport and Ross (1967). The provision of a sample item from each of these two scales will help to clarify this point. "My religious beliefs are what really lie behind my whole life" and "Religion is especially important to me because it answers many questions about the meaning of life" represent sample items from the Intrinsic and Extrinsic Religiousness scales respectively. It is

entirely possible that an individual may not only live his or her religion, but also find religion useful for finding meaning in life. In fact, researchers have reported findings that support this alternative explanation.

Specifically, although Allport conceptualized Intrinsic/Extrinsic Religiousness as polar opposites on a continuum, researchers have not reported findings, which support this conceptualization. Rather, researchers have empirically demonstrated that Intrinsic and Extrinsic Religiousness function as orthogonal dimensions, rather than as a single dimension (Kirkpatrick, 1989). In addition, the results of more recent studies have suggested that religiosity is not a single dimension, but rather, must be conceptualized as a multidimensional construct, composed of numerous factors (Ventis, 1995). Thus, although Allport and Ross' Intrinsic/ Extrinsic Religiousness scales have stimulated a rather large body of research, the conceptualization upon which this measure was based has been challenged by recent empirical findings. Some researchers have suggested that the Allport and Ross Intrinsic and Extrinsic Religiousness scales are still valuable research tools, providing that the Intrinsic and Extrinsic scales are used as two distinct measures, rather than opposite ends of a single continuum (Hood, 1971;. Hunt & King, 1971, and Hood, 1973).

Other theorists have defined religiosity in terms of five dimensions, which include the following: ideological, experiential, ritualistic, intellectual and consequential/functional components (Glock & Stark, 1965). Based on the results of a large cross-cultural study, Glock and Stark (1965) proposed that these five dimensions are

universal to all world religions. On the basis of this five-dimensional conceptualization, Glock and Stark (1965) developed the 23 item “5-D scales of Religiosity”.

However, subsequent factor analytic studies utilizing Glock and Stark’s 5-D Scales of Religiosity have generally supported a four dimensional conceptualization of religiosity, as opposed to the five dimensional model which was originally proposed by Glock and Stark (1965). For example, Weigert and Thomas (1969) reported that the intellectual scale items tended to load onto the ideological scale. Clayton and Gladden (1973) also reported findings that supported a four, as opposed to five dimensional conceptualization of religiosity. This four factor structure (ideological, experiential, ritualistic, and consequential/ functional), which has received empirical support, has subsequently been accepted by many researchers (Faulkner & De Jong, 1966, Gibbs & Cradler, 1970; Chalfant, Beckley, & Palmer, 1987).

Glock and Stark’s 5-D Scales of Religiosity have other limitations. First, some of the scale items have poor face validity. For example, consequential scale items assess the individuals attitudes about sex and lying. Further, as a result of the terminology of the items, the 5-D scales are only applicable to Christian religious affiliations, as opposed to a more universal concept of spirituality. In addition, evaluations of this particular measure have omitted information about the reliability and validity of the 5-D scales. In summary, Glock and Stark’s 5-D Scales of Religiosity have questionable psychometric integrity. However, four of the original five dimensions upon which the scales were designed, have received good empirical support.

Another recently published questionnaire, the Spiritual Well-Being Scale [SWBS], measures spirituality in terms of two dimensions (Paloutzian & Ellison, 1979). The two dimensions include a vertical dimension, which represents the individual's relationship with God, and a horizontal dimension, which represents the individual's relationship with others and satisfaction with life. The SWBS has been reported to have acceptable levels of internal consistency (.84) and test-retest reliability (.84) (Brinkman, 1989).

Despite the fact that the SWBS, has been found to have good reliability, researchers have reported a number of limitations with this particular measure. First, researchers have found that the Spiritual Well-Being Scale demonstrates ceiling effects, and consequently is not useful for identifying individuals who have high levels of spirituality (Bufford, Paloutzian, & Ellison, 1991). In addition, certain researchers have reported that the SWBS has an unstable factorial structure (Scott, Agresti, & Fitchett, 1997). Based on subsequent factor analytic studies of the SWBS, Scott and associates (1997) reported that this measure was better represented by a three factor solution ("Affiliation", "Alienation", and "Dissatisfaction with Life") as opposed to the two-factor solution as originally proposed by Paloutzian & Ellison (1979).

In another study, which was conducted to investigate the validity of the SWBS utilizing a confirmatory factor analytic approach, the researchers found that neither a two factor, nor a three factor solution was sufficient to explain spirituality (Ledbetter, Smith, Vosler-Hunter, & Fischer, 1991). Based on the results of this study, the authors have recommended a complex multidimensional conceptualization of spiritual well-being, and

have suggested that further studies utilizing exploratory factor analytic techniques are needed to investigate the dimensionality of spirituality (Ledbetter et al., 1991). Based on the results of these numerous factor analytic studies, certain authors have questioned the validity of the Spiritual Well-Being Scale (Scott, Agresti, & Fitchett, 1997).

After conducting a comprehensive review of extant measures of spirituality, Ellerhorst-Ryan (1996) concluded that there is a lack of reliable and valid measures of spirituality. Most available measures assess only some narrowly defined aspect of religion or spirituality. A summary of the reviewed measures, and their associated psychometric characteristics are presented in Table 1.

In summary, most existing measures assess very narrowly defined aspects of religious behavior, such as prayer or church attendance, as opposed to the broader concept of spirituality (for a review of measures of specific religious behaviors, see Hall, Tisdale, & Fletcher Brokaw, 1994). Although the results of numerous studies have indicated that spirituality is a multidimensional construct, researchers have typically defined spirituality in terms of one or two components, when designing questionnaires to assess spirituality. Consequently, none of the questionnaires, which have been published in the available literature, have been found to be viable measures of spirituality, which are conceptually consistent with research findings. Although four of the five 5-D Scales of Religiosity (Glock & Stark, 1965) are consistent with a multidimensional conceptualization, this measure has poor face validity, limited psychometric integrity, and assesses only very narrowly defined behaviors and attitudes associated with Christian religious affiliations.

Table I

Summary of Instruments to Measure Spiritual Status

Measurement Instrument	Construct	Reliability	Validity	Factorial Structure
1. Spiritual Perspective Scale (Reed, 1987)	(10 items) -extent to which religion permeates the individual's life	I.I. (.57-68) C.A. (.95)	-correlated to religious background.	-none reported
2. Serenity Scale (Roberts, in press)	(40 items) -extent to which individual experiences peace and serenity	C.A. (.92)	• questionable for low literacy patients	-nine factors (58.2% variance)
3. Spiritual Needs Survey (Hess, 1988)	(5 items) -patient's awareness of his/her spiritual needs	-none reported	-none reported	-none reported
4. Reed Interview Schedule (Reed, 1991)	(2 items) -to assess spiritual intervention from nursing staff	-none reported	-none reported	-none reported
5. Hope Scale (Dufault & Martacchio, 1986)	(29 items) -to assess 6 components of hope	C.A. (.90)	-correlated with Beck Hopelessness Scale ($r = -.47, p < .001$)	-none reported
6. Spiritual Support Scale (Maton, 1989)	(3 items) -to assess perceived support	C.A. (.81)	-none reported	-none reported
7. Indexes of Spiritual Well-Being (Moberg, 1984)	(45 items) -assesses factors (attitudes, piety, faith) which affect spiritual well-being	-none reported	-limited for non-Christian clients	-7 factors

NOTE:

C.A. = Cronbach's Alpha of internal consistency

I.I. = Inter-item reliability

% variance = per cent of variance accounted for by the reported factor solution

Thus, a primary goal of the present study was to design a comprehensive multidimensional measure of spirituality that would have broad utility.

The Development of the Spirituality Questionnaire

A number of difficulties, which were inherent in the previously reviewed questionnaires were addressed in the present study. First, when publishing measures of religiosity or spirituality, the authors have rarely provided concise definitions of these constructs. This lack of precise description, makes it very difficult, if not impossible, to compare the various measures and associated empirical findings. Some authors differentiate between religiosity and spirituality, while other authors use the two terms interchangeably.

For the purposes of the present study, a distinction is made between the two terms. Religiosity is used when referring to the quality of being devoutly affiliated with one of the prevalent systems of faith or worship (from The Concise English Dictionary). In contrast, the term spirituality is used when referring to the degree to which an individual's beliefs and behavior represent a concern with inner or immaterial and existential well-being. The definition of spirituality which has been proposed by Chandler, Holden, and Kolander (1992) is also relevant for the present study. These authors defined spirituality as "pertaining to the innate capacity to, and tendency to seek to, transcend one's current locus of centrality, which transcendence involves increased knowledge and love" (Chandler et al., 1992, p.169). Further, an individual's spirituality may be nurtured and expressed in many different ways, only one of which is affiliation with, and participation in standard religious activities.

An additional difficulty with available measures of spirituality is that most questionnaires have measured spirituality only in terms of standard religious behavior. In fact, there may be a large number of individuals who may not express their spirituality through standard religious activities, such as church attendance, but for whom spirituality and spiritual growth may still be very important. Accordingly, when designing the Spirituality Questionnaire in the present study, a broader range of beliefs and behaviors was used to measure spirituality.

As was previously mentioned, all of the available measures of religiosity or spirituality, have measured these constructs, in terms of one or two concepts, when in fact researchers have reported that spirituality is a multidimensional construct. Accordingly, in the present study, spirituality was measured in terms of numerous beliefs and behaviors. As four of the five factors of religiosity/spirituality reported by Glock and Stark (1965) have been substantiated by research findings, these dimensions which included, ideological, experiential, ritualistic and consequential/ functional, were used as the conceptual basis for the present questionnaire.

Based on an extensive review of the relevant literature, several categories were subsumed within the ideological component. Numerous theorists have suggested that spirituality involves the acknowledgment of a higher power (Kass, Friedman, Leserman, Zuttermeister, & Benson, 1991; Westgate, 1996). Further, researchers have indicated that the knowledge of a higher power provides meaning in life (Hall, 1986, Kass et al., 1991; Westgate, 1996). Thus, in the present study, items which were designed to measure the ideological component of spirituality, included true/false statements to assess the

following components: a belief in God or a higher power, a belief that humans have a spiritual component, and the presence of spiritual beliefs or a philosophy of life, which provide meaning for the individual. (see Table 2 for theoretical components of the spirituality construct).

Researchers investigating the experiential component of spirituality have indicated that experiences of transcendence are universal, and not dependent upon any particular religious ideology (Stace, 1960; Hood, 1973). Stace (1960) has defined transcendent experiences as those experiences which are non-spatial, non-temporal, and devoid of all content. He also suggested that experiences of transcendence which are characterized by objectivity, and a loss of sense of self, are often ineffable, considered sacred, and associated with positive affect.

When constructing and validating a measure of mystical experience, Hood (1975) reported that there are two basic types of mystical experiences. He described one type as an intense mystical experience, which is not necessarily interpreted as religious, and the second type as an intense and joyful experience, which is more traditionally religious in quality. Thus, in the present study, those questions that were written to measure the experiential component of spirituality, included items designed to assess the following: an individual's personal affiliation with and experience of God or a higher power, the experience of a deep sense of peace and well-being, as well as peak, transcendent, or other profoundly spiritual experiences.

In the present study, the ritualistic component of spirituality was assessed by items written to measure both public and private behaviors. Items designed to assess public

Table 2

Four Theoretical Component of the Spirituality Questionnaire

I. IDEOLOGICAL/PHILOSOPHICAL

- i) Belief in God or a higher power
- ii) Belief that all humans have a soul or spiritual component.
- iii) Belief that life has a special meaning or higher purpose.
- iv) The presence of a clearly defined set of spiritual beliefs or philosophy of life.

II. EXPERIENTIAL

- i) Experiencing a closeness to God or a higher power (either during rituals or daily activities).
- ii) Experiencing divine guidance (or the answer to a specific prayer request).
- iii) Peak experiences.
- iv) Experiencing a profound sense of peace or spiritual well-being.
- v) Experiencing a sense of fellowship or belonging as a part of a larger whole.

III. RITUALISTIC

- i) Public -Active membership in a group associated with one's own spiritual beliefs.
-Attendance or involvement in activities associated with one's spiritual beliefs.
-Discussions or studies associated with one's beliefs.
- ii) Private -Meditation, prayer, and/or introspection

IV. FUNCTIONAL

- i) Spiritual beliefs or philosophy of life provide the individual with hope and comfort.
 - ii) Belief that one's spirituality is important in identifying direction and values.
 - iii) Spiritual beliefs or philosophy of life provides meaning.
-

ritualistic behavior included questions related to active participation or involvement in overt rituals or ceremonies which were related to the individual's spiritual beliefs. Those items which were designed to measure private ritualistic behavior, included true/false statements about participation in covert behaviors, such as meditation, prayer, introspection, or studying doctrines associated with the individual's spiritual beliefs or philosophy of life.

The functional component of spirituality was measured by items, which were written to assess the potential benefits or functions of an individual's religious or spiritual beliefs and practices. These items included true/false statements about receiving hope and comfort, or deriving meaning from one's spiritual beliefs or philosophy of life. Further, the consequences of spirituality were assessed with a number of measures of subjective well-being. These measures included the Quality of Life Questionnaire (Evans & Cope, 1989), the Perceived Quality of Life Scale (Pellizzari, 1992), the Positive and Negative Affect Scale (Watson, Clark & Tellegen, 1988) and the Satisfaction with Life Scale (Diener et al., 1985).

In summary, researchers have generally reported that spirituality is associated with physical, psychological, and subjective well-being. Despite the obvious importance of this relationship, researchers have typically omitted the spiritual component, when designing models of quality of life and health promotion. Thus, a fundamental goal of the present study involved testing a hypothetical model relating spirituality and quality of life. Based on the results of an extensive review of the literature, it was predicted that spirituality and quality of life would be related in a direct and reciprocal manner.

After completing an extensive review of the relevant literature in an attempt to locate a broad measure of spirituality with acceptable psychometric integrity, it became apparent that existing measures of spirituality have numerous limitations. Many of the existing measures, such as Glock and Stark's 5-D scales of Religiosity (1965), and Moberg's (1984) Index of Spiritual Well-Being, use only a few items to assess very limited aspects of religious behavior, which are specific to a particular religious affiliation. As such, these measures have limited value in assessing the broader concept of spirituality.

Other measures, such as the Spiritual Well-Being Scale (Paloutzian & Ellison, 1979) and the Spiritual Support Scale (Maton, 1989) were designed to measure the more universal aspects of spirituality as opposed to specific religions. Although these measures have good psychometric properties, they are narrowly defined in terms of only one or two dimensions, when in fact, researchers have consistently reported that spirituality is a multidimensional construct. Thus, another goal of the present study involved developing a broad measure of spirituality, which is consistent with a multidimensional conceptualization of spirituality.

CHAPTER 2:

**THE DEVELOPMENT OF THE ITEMS AND SCALES
OF THE SPIRITUALITY QUESTIONNAIRE AND THEIR RELATIONSHIP
WITH QUALITY OF LIFE**

The findings of three separate studies are reported in the following 3 chapters. For the sake of clarity, a brief summary of the sample characteristics and goals of each of the three studies are presented here. The samples for all three studies were composed of first year university students, who participated in the present research to fulfill the requirement for a research component of an introductory Psychology course. The data for Study 1 and Study 2 were gathered during the same 5 month period. After a total of 455 participants had completed the questionnaire packages, the participants were randomly assigned to either Study 1 or Study 2. On the basis of this procedure 222 participants were assigned to Study 1 and 210 participants were assigned to Study 2.

The main goals of Study 1 involved developing the items and scales of the Spirituality Questionnaire, and verifying the multidimensional conceptualization upon which this questionnaire was designed. An additional goal of Study 1 involved investigating relationship of this new measure with quality of life.

The primary goal of Study 2 was to replicate the procedures of the first study with the aim of verifying the findings of Study 1. Thus, the specific goals of Study 2 included verifying both the Spirituality Questionnaire scales that were developed in Study 1 and the multidimensional structure of spirituality, as well as further investigating the relationship between spirituality and quality of life.

The data from the sample of the 242 individuals that participated in the third study was collected one year following the completion of Studies 1 and 2. One goal of Study 3 involved verifying the scales and the internal consistency of the Spirituality Questionnaire, which had been established in Studies 1 and 2, as well as further investigating the relationship between spirituality and quality of life.

However, Study 3 involved several goals that were distinct from Studies 1 and 2. First, an initial investigation of the construct and discriminant validity of the Spirituality Questionnaire were undertaken in the third study. In addition, the participants of the third study were asked to return three months following the initial session to establish the test-retest reliability of the Spirituality Questionnaire. Another goal of the third study, which was distinct from the first two studies involved developing a spirituality behavior and experience checklist as an extension of the Spirituality Questionnaire.

STUDY 1

The Spirituality Questionnaire was designed using the Rational-Empirical approach to test construction, which was proposed by Jackson (1970). Within the first phase of this five-phase study, the domains comprising spirituality were identified and defined. Items were then written to measure each of these four domains, on the basis of these definitions. Items were subsequently selected for each of the four domains during the second phase of the study. The internal consistency and the construct validity of the Spirituality Questionnaire were assessed during the third and fourth phases of the study respectively.

Method

Participants

Two hundred and twenty-two of the 455 first year psychology students who participated in the present study were randomly assigned to Study 1. Each subject earned one credit towards the research component of an introductory Psychology course for participating in the study. Of the 222 participants, 164 were female and 58 were male. The age of the participants ranged from 17 to 55, with a mean age of 20 years. In addition, 97 % of the participants in the first study were single with no children. Due to the nature of the sample all participants had completed at least some university courses (see Table 3).

Over 40% of the participants listed no affiliation with any particular religion. Although more than 20 different religious affiliations were reported by various participants in the sample, the majority of those students who reported a specific religious affiliation, indicated involvement with a Christian denomination. A summary of the religious affiliations, which were reported by the participants is presented in Appendix A. Twenty-three of the 455 questionnaire packages which had been completed by the participants were not included in the study, as the Spirituality Questionnaires in these envelopes had been left incomplete by the participants.

Phase 1: Scale Determination and Item Development

First, a comprehensive literature review was conducted to determine how to conceptualize spirituality. As was previously mentioned, a multidimensional conceptualization for spirituality, has been recommended by numerous researchers. In the

Table 3

Participant's Demographic Information for the Initial and Two Cross-Validation Studies

		STUDY 1		STUDY 2		STUDY 3	
		Frequency	Percent	Frequency	Percent	Frequency	Percent
<u>Sex</u>	Male	58	26.1	48	22.9	53	21.9
	Female	164	73.9	162	77.1	188	77.7
<u>Age</u>	Under 21	180	90.2	191	90.9	206	85.1
	21-25	13	5.0	16	7.7	23	9.5
	26-30	4	2.0	3	1.5	1	0.4
	31-35	2	1.0	0	0.0	6	2.4
	36-40	1	0.5	0	0.0	6	2.4
	41-45	0	0.0	0	0.0	1	0.4
	46-50	1	0.5	0	0.0	0	0.0
	51-55	1	0.5	0	0.0	0	0.0
<u>Marital Status</u>	Single	217	97.7	202	96.2	226	93.4
	Married	5	2.3	6	2.9	7	2.9
	Common-law	0	0.0	2	1.0	3	1.2
	Divorced	0	0.0	0	0.0	5	2.1
<u>Children</u>	No	216	97.3	207	98.6	227	93.8
	Yes	5	2.7	3	1.4	15	6.2
<u>Education Level Completed</u>	High School	207	93.2	200	95.2	221	91.3
	College	10	4.5	7	3.3	13	5.4
	Undergrad	3	1.4	2	1.0	6	2.5
	Graduate	2	0.9	1	0.5	2	0.8
<u>Employment</u>	None	201	90.5	188	89.5	199	82.2
	Part-time	17	7.7	17	8.1	33	13.6
	Full-time	4	1.8	5	2.4	10	4.2
Total participants per sample:		222		210		242	
Mean age per sample:		19.90		19.25		20.70	

present study, spirituality was conceptualized as a four dimensional construct, including the four components (Ritualistic, Experiential, Ideological, and Consequential) that have been supported by research findings (Glock & Stark, 1965; Clayton and Gladden, 1973; Chalfant, Beckley, & Palmer, 1987). A description of individuals either high or low on each of these four components is presented in Table 4.

On the basis of these definitions, an initial pool of 100 dichotomous (True/False) items was written to measure the four theoretical components (Ritualistic, Experiential, and Ideological and Functional). Subsequently, two item writers, who had written the questions, met with another authority to choose the best 50 items for the questionnaire, on the basis of each item's face validity. Further, to control for response acquiescence, half of the items for each component were positively-keyed and half were negatively-keyed.

Phase 2: Item Selection and Scale Construction

Measures

Demographics

Prior to completing the package of questionnaires, each participant filled out a demographic information sheet, which obtained information about the participant's gender, age, marital status, completed education, current occupation, and religious affiliation (if any).

Spirituality

The initial version of the 50 item Spirituality Questionnaire, which was developed in the first phase of Study 1, was administered to the the participants in the first study.

Table 4

Initial Individual Definitions for Scales of the Spirituality Questionnaire

Spirituality Questionnaire Scale	An individual who measures high on given scale	An individual who measures low on given scale
RITUALISTIC	-frequently engages in private ritualistic activities, such as prayer, introspection, and meditation. as well as public ritualistic activities, including participation in rituals, or ceremonies associated with his or her spiritual beliefs or philosophy of life.	-rarely (if ever) engages in private ritualistic activities, such as prayer, introspection, and meditation. or public ritualistic activities, including participation in rituals, or ceremonies associated with his or her spiritual beliefs or philosophy of life.
EXPERIENTIAL	-frequently experiences a close affiliation with God or a higher power in his or her life and has profound spiritual or peak experiences, and a deep sense of peace, & spiritual well-being.	-rarely (if ever) experiences a close affiliation with God or a higher power in his or her life and does not have profound spiritual or peak experiences or a deep sense of peace. & spiritual well-being.
IDEOLOGICAL	-has a clearly defined set of spiritual beliefs or philosophy of life, believes in the existence of God or a higher power, and believes that humans have a soul or an important spiritual component.	-does not have a clearly defined set of spiritual beliefs or philosophy of life, does not believe in the existence of God or a higher power or that humans have a soul or important spiritual component.
FUNCTIONAL	-derives meaning and understanding a sense of belongingness, and affective benefits, such as hope and comfort, from his or her spiritual beliefs or philosophy of life	-does not derive meaning and understanding, a sense of belongingness, and affective benefits such as hope or comfort from his or her beliefs or philosophy of life

Quality of Life

Satisfaction with Life Scale (SWLS) The Satisfaction with Life Scale (Diener et al., 1985), which is a self-report questionnaire comprised of five items, was used to measure each individual's subjective satisfaction with his or her life in general. Each of the five items was scored on a Likert type scale from 1 (strongly disagree) to 7 (strongly agree). Each participant received a single score on the scale which represented the sum of the five responses. Each individual's score could range from 5 (lowest score) to 35 (highest possible satisfaction score) The Satisfaction with Life Scale has a high level of reliability. Diener and associates (1985) have reported a coefficient alpha of .87 and a two month test-retest correlation coefficient of .82.

The Positive and Negative Affect Scale (PANAS) The PANAS scale (Watson, Clark & Tellegen, 1988) is a self-report inventory which measures two different mood factors. High Positive Affect (PA) is characterized by enthusiasm, alertness and a high level of activity. In contrast, low PA is associated with lethargy and sadness. High Negative Affect (NA) is associated with subjective distress, anxiety, guilt and anger, whereas low NA is characterized by serenity and calmness (Watson et al., 1988). In addition, Evans (1997) has demonstrated that the dimensions of PA and NA have high loadings on a general quality of life factor.

The PANAS is a self-report checklist, which is comprised of twenty adjectives, ten for each of the two scales. The participants were asked to indicate the extent to which each adjective characterized his or her feelings in general on a Likert scale ranging from 1 (not at all) to 5 (extremely). Two scores, a total PA score and a total NA score was

calculated for each of the participants, with a possible range from 10 (lowest) to 50 (highest) for each of the two dimensions.

Watson and associates (1988) have reported high levels of internal consistency for both the PA ($\alpha = .86-.90$) and the NA ($\alpha = .84-.87$) scales. In addition, acceptable test-retest reliabilities of .68 and .71 have been reported for the PA and NA scales respectively (Watson et al., 1988).

Perceived Quality of Life Questionnaire (PQOL) This fourteen item questionnaire (Pellizzari, 1992) was designed in accordance with a "bottom-up" additive model of quality of life. In the present study, the PQOL was utilized to measure each participant's subjective satisfaction on thirteen different life domains and the individual's life in general. The participants were asked to rate each domain on a scale of 1 (completely dissatisfied) to 7 (completely satisfied), and a score based on the total ratings from the fourteen domains was calculated for each participant, with a possible range from 14 (completely unsatisfied on all domains) to 98 (completely satisfied on all domains). Pellizzari (1995) has reported that the PQOL an internal consistency of .78 .

Quality of Life Questionnaire (QLQ) A shortened version of the QLQ (Evans & Cope, 1989) was used to measure the quality of life of each of the participants. The shortened QLQ [QLS-10] is a 120-item questionnaire, which measures an individual's quality of life in ten different life domains. The 10 domains are material well-being, physical well-being, personal growth, marital relations, parent-child relations, extended family relations, extrafamilial relations, altruistic behavior, political behavior.

creative/aesthetic, sports activities, and vacation behavior (Evans, Burns, Robinson & Garrett, 1985).

The QLQ has repeatedly demonstrated good reliability, with a mean internal consistency of .74 (Evans & Cope, 1989). Further, Evans (1997) has reported correlations between the Quality of Life Questionnaire and the Perceived Quality of Life Questionnaire ($r = .62$), the Satisfaction with Life Scale ($r = .57$), Positive Affect ($r = .49$) and Negative Affect ($r = -.51$).

Procedure

The participants were informed that the purpose of the present study was to develop a questionnaire and test a model relating spirituality, personality, the appraisal of life events and the perception of quality of life. However, the participants in the present study remained experimentally naive, with regards to the specific experimental hypotheses. Prior to the study, each participant was advised that his or her participation was entirely voluntary and was assured that he or she could withdraw from the study at any time without any penalty. Further, all participants in the present study were assured of the anonymity and confidentiality of all responses.

The participants were instructed to carefully read the instructions and to answer the self-report questionnaires in the order in which they appeared on the instruction sheet. Although small groups of subjects simultaneously completed the study, each participant worked privately and independently on his or her own questionnaires. Each participant earned one credit towards a research component of an introductory Psychology course for participating in the study. Upon completion of the questionnaires, each subject was

individually thanked for his or her participation in the study and was debriefed. At this time, any additional questions and concerns were addressed. After all 455 participants had completed the questionnaires, the subjects were randomly assigned to either Study 1 or Study 2.

Results

Response frequencies were calculated for each of the fifty items on the Spirituality Questionnaire. Next, the four scales of the Spirituality Questionnaire were scored utilizing the Neill True-False scoring program (Jackson, Skinner, & Strasberger, 1977). Subsequently, item analysis of the fifty items was conducted using the Neill-Paunonen item analysis program (Jackson et al., 1977). The scales were further refined, according to a number of decision rules as follows:

1. All items which had a p value of greater than .85 or less than .15 were deleted, as these items were judged to have poor discriminant validity.
2. All items which had a greater correlation with another scale were also deleted.
3. All items which had a higher correlation with the infrequency scale than their own scale were also deleted.
4. Finally, all items which had an item efficiency index of less than or equal to zero were deleted, as these items were judged to be contaminated by higher mean correlations with other scales than their own.

On the basis of these decision rules, ten of the original fifty items (including SQ01, SQ04, SQ05, SQ06, SQ17, SQ19, SQ31, SQ33, SQ36 and SQ40), were deleted from the questionnaire and four scales were developed. The item-related statistics for the scales in the Spirituality Questionnaire are presented in Table 5.

Table 5

Item-Related Statistics for the Spirituality Questionnaire Subscales

	Mean Item <i>p</i> value	Mean item total correlation	Mean item efficiency index
<u>Study 1</u>			
Ritual	.48	.62	.57
Experiential	.39	.67	.62
Ideological	.53	.59	.53
Functional	.60	.68	.63
<u>Study 2</u>			
Ritual	.48	.62	.57
Experiential	.39	.68	.62
Ideological	.54	.59	.53
Functional	.61	.68	.62
<u>Study 3</u>			
Ritual	.50	.59	.42
Experiential	.44	.67	.49
Ideological	.55	.60	.42
Functional	.62	.70	.52

Phase 3: Internal Consistency of the scales and Spirituality Questionnaire

The internal consistency of each of the developed scales was assessed utilizing a reliability analysis program in Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). The Cronbach's alpha estimate of internal consistency for each of the scales is presented in Table 6. The internal consistency of each of the four scales were (.85), (.87), (.79) and (.87) for the Ritualistic, Experiential, Ideological, and Functional scales respectively. Further, the internal consistency of the 40 item Spirituality Questionnaire Full Scale was (.95).

The matrix of intercorrelations for the four Spirituality Questionnaire scales, and the Spirituality Questionnaire Full Scale score are presented in Table 7. Each pair of scales were positively correlated and significant at ($p < .001$).

Phase 4: Construct Validation

Pearson product-moment correlations were calculated for each combination of Spirituality Questionnaire scales and measures of quality of life, to evaluate the relationship between the derived Spirituality Questionnaire scales and various measures of quality of life. The resulting correlation matrix is presented in Table 8. All four of the Spirituality Questionnaire scales, as well as the Spirituality Questionnaire Full Scale score were positively correlated with the four measures of subjective well-being, administered in the present study. With very few exceptions, these positive correlations were significant at ($p < .01$). With the exception of a significant negative correlation with

Table 6

Scale Related Statistics of Spirituality Questionnaire

<u>Scale</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>Cronbach's alpha</u>
<u>Study 1</u>				
Ritualistic	222	5.53	3.63	.85
Experiential	222	3.61	3.25	.87
Ideological	222	4.74	2.77	.79
Functional	222	5.10	3.19	.87
SQ Full Scale	222	18.98	11.62	.95
<u>Study 2</u>				
Ritualistic	210	5.78	3.72	.87
Experiential	210	4.00	3.28	.86
Ideological	210	5.02	2.94	.86
Functional	210	5.37	3.32	.91
SQ Full Scale	210	20.17	12.02	.96
<u>Study 3</u>				
Ritualistic	242	5.82	3.41	.84
Experiential	242	3.98	3.32	.86
Ideological	242	4.90	2.67	.75
Functional	242	5.43	3.09	.86
SQ Full Scale	242	20.13	11.18	.92

Note. For each scale the total possible score was as follows: Ritualistic (12), Experiential (10), Ideological (9), and Functional (9).

SQ = Total score from 40 item Spirituality Questionnaire

Table 7

Matrix of Intercorrelations Between Spirituality Questionnaire Scales and the Spirituality Questionnaire Full Scale Score

<u>Scale</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
<u>Study 1</u>					
1. Ritualistic	-	.76**	.81**	.73**	.92**
2. Experiential		-	.76**	.72**	.89**
3. Ideological			-	.77**	.92**
4. Functional				-	.89**
5. Spirituality Questionnaire Score					-
<u>Study 2</u>					
1. Ritualistic	-	.75**	.80**	.73**	.91**
2. Experiential		-	.75**	.73**	.89**
3. Ideological			-	.83**	.93**
4. Functional				-	.91**
5. Spirituality Questionnaire Score					-
<u>Study 3</u>					
i. Ritualistic	-	.78**	.80**	.72**	.94**
2. Experiential		-	.73**	.65**	.90**
3. Ideological			-	.73**	.90**
4. Functional				-	.86**
5. Spirituality Questionnaire Score					-

Note. ** ($p < .001$).

Table 8

Intercorrelations Between Spirituality Questionnaire Scales and Measures of Subjective Well-Being :

<u>SQ</u>	<u>SWLS</u>	<u>PQOL</u>	<u>P/AFF</u>	<u>N/AFF</u>	<u>QLQ</u>
<u>Study 1</u>					
1. Ritualistic	.17 **	.14 *	.21 **	-.04	.20 **
2. Experiential	.22 **	.18 **	.24 **	-.09	.20 **
3. Ideological	.24 **	.21 **	.25 **	-.07	.27 **
4. Functional	.31 **	.29 **	.32 **	-.14 *	.25 **
5. SQ Full Scale	.26 **	.22 **	.28 **	-.09	.26 **
<u>Study 2</u>					
1. Ritualistic	-.01	.12	.16 *	.04	.14 *
2. Experiential	-.04	.12	.13	.04	.12
3. Ideological	.11	.26 **	.27 **	-.05	.21 **
4. Functional	.11	.21 **	.26 **	-.02	.18 **
5. SQ Full Scale	.04	.19 **	.22 **	.01	.18 **
<u>Study 3</u>					
1. Ritualistic	.08	.17**	.04	.00	.16*
2. Experiential	.10	.16*	.05	.06	.10
3. Ideological	.07	.17**	.07	-.04	.17**
4. Functional	.15*	.30**	.17**	-.05	.21**
5. SQ Full Scale	.11	.22**	.09	.00	.17**

Note. SQ = Spirituality Questionnaire; SWLS = Satisfaction with Life Scale; PQOL= Perceived Quality of Life Scale; P/AFF= Positive Affect; N/AFF = Negative Affect; QLQ = Quality of Life Questionnaire (120 item student version).

* ($p < .05$)

* * ($p < .01$).

the Functional scale, Negative Affect was not found to be related to the Spirituality Questionnaire scales.

The Discriminant validity of the Spirituality Questionnaire was investigated by comparing the Spirituality Questionnaire scores of those individuals who were judged to belong to a "high spirituality" group, with those individuals who were judged to belong to a "low spirituality" group. Each participant's membership in either the high or the low spirituality group was decided based on whether or not the participant indicated that he or she was affiliated with any particular religion. The mean scores from the Spirituality questionnaire scales for the "religious affiliation" and "no religious affiliation" groups are presented in Table 9. The mean scores for the "no religious affiliation" group ranged from 2.39 for the Experiential scale to 13.21 for the SQ Full Scale score. All mean scores for the "religious affiliation" group, which ranged from 4.53 [Experiential to 23.34 [SQ Full Scale score], were higher than the corresponding means for the "no religious affiliation" group.

An analysis of variance was conducted to determine whether these mean Spirituality Questionnaire scale scores differed significantly as a function of the absence or presence of religious affiliation. The F-ratios for the Ritual, Experiential, Ideological, Functional, and Total scale scores, which were all significant at ($p < .001$) are presented in Table 9. These results indicated that the Spirituality Questionnaire scores differed significantly as a function of the absence or presence of a religious affiliation.

Table 9

Mean Scores on the Spirituality Questionnaire Scales as a Function of the Presence or Absence of Religious Affiliation

<u>SQ SCALE</u>	GROUP			
	Mean Scale Scores for No Religious Affiliation Group	Mean Scale Scores for Religious Affiliation Group	F-ratio	Significance level
	<u>Study 1</u>			
RITUAL	3.74	6.90	41.78	.001
EXPERIENTIAL	2.39	4.53	28.82	.001
IDEOLOGICAL	3.40	5.76	70.36	.001
FUNCTIONAL	3.68	6.18	38.64	.001
SQ TOTAL	13.21	23.34	53.85	.001
N/ GROUP	96	126		
	<u>Study 2</u>			
RITUAL	2.66	5.33	81.73	.001
EXPERIENTIAL	4.03	7.53	101.62	.001
IDEOLOGICAL	3.76	6.27	194.18	.001
FUNCTIONAL	3.99	6.76	177.93	.001
SQ TOTAL	14.44	25.89	176.92	.001
N/ GROUP	105	105		
	<u>Study 3</u>			
RITUAL	3.95	7.06	60.65	.001
EXPERIENTIAL	2.34	5.05	45.87	.001
IDEOLOGICAL	3.35	5.92	68.10	.001
FUNCTIONAL	4.05	6.34	36.27	.001
SQ TOTAL	13.69	24.36	67.31	.001
N/ GROUP	96	146		

NOTE:

SQ = Spirituality Questionnaire; SQ TOTAL = Spirituality Questionnaire Total Score summed across all 4 subscales; No religious affiliation = the participant that indicated on the demographic sheet that he/she had no particular religious affiliation; N/ GROUP = Number of participants in each category.

Phase 5: Hypothetical Model Testing

Structural Equation Modeling [SEM] is a comprehensive statistical technique, which uses a combination of factor analysis and path regression to test hypotheses about the relationships among latent and observed variables. In general, a number of different indices are used to assess the adequacy of the hypothesized model. The first of these, the χ^2 test is an overall test of fit between the fitted and sample covariance matrices. For the χ^2 test, smaller values are associated with a better fit, with values of zero indicating a perfect fit between the data and the hypothesized model. Despite the popularity of this test, certain authors have reported several limitations which are associated with the χ^2 test. For example, increased power of the test, and associated increases in sample size may result in rejection of the specified model, even in cases where the difference between fitted model and sample covariance matrices are trivial (Bentler, 1990; Gardner, 1999).

As a result of the limitations associated with the χ^2 test, several other indices have been developed for assessing the goodness of fit of the tested models. In general, these indices are derived from the comparison of the fit of a null model and the fit of a specified model, with the null model representing a model in which no relationships are specified between variables (Hoyle, 1995). Several goodness of fit indices which are reported with SEM output include the normed fit index [BBNFI], the non-normed fit index [BBNNFI], and the comparative fit index [CFI] (Bentler & Bonett, 1980; Bentler, 1990). Goodness of fit indices may assume a value between zero and one. There is a general consensus in the literature that a goodness of fit index which exceeds .90 is

indicative of a good fit between the hypothesized model and any data set (Byrne, 1994; Hoyle, 1995).

Hoyle (1995) has recommended that it is important to consider both the χ^2 test, and the adjunct fit indices, when assessing the adequacy of fit between the hypothesized model and the obtained data set. There is a general consensus in the literature, that a hypothesized model may be considered adequate if either the χ^2 test is non significant, or the goodness of fit indices exceed the value of .90 (Byrne, 1994; Hoyle, 1995).

Another statistical test, which is available only with the EQS program for structural equation modeling (Byrne, 1994) is the Wald test. This particular test is a multivariate test which is used to determine whether any of the paths in the model are redundant, and could thereby be eliminated without compromising the overall fit of the model being tested. The Wald test produces a Chi-square value for each path in the model, which if significant indicates that the path is redundant and should therefore be eliminated from the tested model. The Wald test is especially important when performing confirmatory factor analytic procedures.

Model Assessing the Relationship between Spirituality and Quality of Life

A fundamental goal of the present study involved investigating the relationship between spirituality and quality of life. Based on the results of a comprehensive literature search, it was hypothesized that spirituality and quality of life would be related through a direct and reciprocal interaction. A pictorial representation of this hypothesized model is presented in Figure 1. Structural Equation Modeling [SEM] was used to determine how well the data from the present study conformed to this hypothesized model.

For each of the hypothetical models tested in the three studies, the Spirituality factor was defined in terms of the participant's scores on the four Spirituality Questionnaire scales [SQ Ritual (RITTOT), SQ Experiential (EXPTOT), SQ Ideological (IDETOT), and SQ Functional (FUNTOT)]. Further, Quality of Life was defined in terms of each participant's score on the [Satisfaction with Life Scale (SWLS), PANAS Positive Affect (POSAFF) and Negative Affect (NEGAFF), Perceived Quality of Life (PQOL), and Quality of Life Questionnaire (QLS10)].

A few trends were apparent in the results of the Structural Equation modeling for all of the models which were tested for each of the three studies. For the sake of clarity, these trends will be summarized here and will not be repeated in the reported results of each of the two subsequent studies. First, a trend was evident in the specific variables which contributed significantly to Quality of Life in the tested models. Specifically, the participant's scores on the Perceived Quality of Life, Positive Affect and Quality of Life contributed significantly to Quality of Life in a positive direction, while Negative Affect contributed significantly to Quality of Life in a negative direction. As the Satisfaction with Life scores were a fixed variable in the tested model, the contribution of this variable to Quality of Life could not be determined in the present model solutions.

A second trend was apparent in the variables which significantly contributed to the Spirituality factor in the tested model for each of the three studies. Specifically, the Experiential, Ideological, and Functional scales of the SQ contributed significantly to the Spirituality factor in all tested models. The degree to which the Ritual scale contributed to

the Spirituality factor could not be determined, as this particular factor was fixed in each of the tested models.

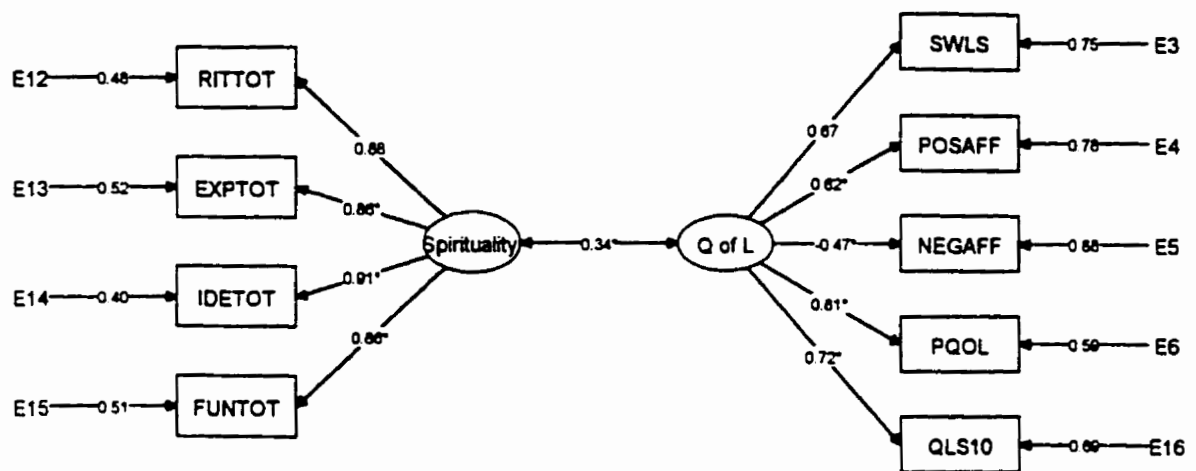
The results of the first SEM analysis, which was used to test the hypothetical model of the relationship between spirituality and QOL is presented in Figure 2. The path coefficient between spirituality and quality of life (.34) was significant indicating that there is reciprocal influence between spirituality and QOL. The χ^2 test was non significant ($\chi^2(26) = 36.95$, ns), indicating a good fit between the sample and fitted covariance matrices. Further, the resulting goodness of fit indices were (.99), (.97), and (.99) for the CFI, BBNFI, and BBNNFI respectively. Thus, the results of the SEM analyses are indicative of an almost perfect fit between the hypothesized model and the data from the present study.

A concern in the present research was the dimensionality of spirituality. Based on the findings of research which has supported a multidimensional conceptualization of spirituality, the Spirituality Questionnaire was developed as a four dimensional measure. Thus, another essential goal of the present study involved verifying this multidimensional conceptualization of spirituality. To this end, a confirmatory factor analysis was performed on the Spirituality Questionnaire, to determine whether the four developed scales represented an accurate conceptualization of the latent structure of spirituality.

The results of this confirmatory factor analysis is presented in Figure 3. The path coefficients for the Ritual (.87), Experiential (.86), Ideological (.92), and Functional (.87) scales were all highly significant, indicating that all four scales contributed to the construct of spirituality. The χ^2 test was non significant ($\chi^2(2) = 3.96$, ns), indicating a

good fit between the sample and fitted covariance matrices. Further, the resulting goodness of fit indices were (.99), (.99), and (1.00) for the CFI, BBNFI, and BBNNFI respectively. Thus, the results of the SEM analyses are indicative of an almost perfect fit between the hypothesized model and the data from the present study.

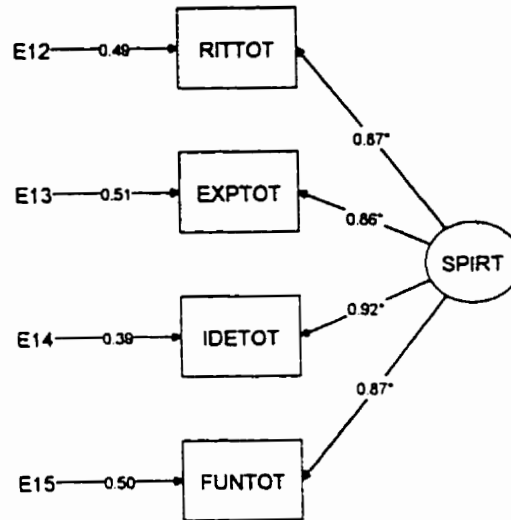
In addition, the Wald test was utilized to determine whether any of the four scales were redundant in the model. The results of the Wald test indicated that all of the all paths in the model were significant at ($p < .000$). These results indicated that none of the paths could be eliminated without compromising the overall fit of the model. Consequently, the results of this analysis provide support for the inclusion of all four scales in the Spirituality Questionnaire. As such, these results support a multidimensional conceptualization of spirituality.



EQS Summary Statistics

Method:	ML
Chi-Square:	36.95
df =	26
pvalue =	0.0755
BBNFI =	0.966
BBNNFI =	0.985
CFI =	0.989

Figure 2. Hypothetical Model Relating Spirituality and Quality of Life: Study 1



EQS Summary Statistics

Method:	ML
Chi-Square:	3.96
df =	2
pvalue =	0.1383
BBNFI =	0.994
BBNNFI =	0.991
CFI =	0.997

Figure 3: Confirmatory Factor Analysis of Spirituality - Study 1

CHAPTER 3:

**THE FURTHER DEVELOPMENT OF THE ITEMS AND SCALES
OF THE SPIRITUALITY QUESTIONNAIRE AND THEIR
RELATIONSHIP WITH QUALITY OF LIFE USING A SECOND SAMPLE
STUDY 2**

The second study was conducted with the aim of replicating the scales of the Spirituality Questionnaire, utilizing a second sample.

Method

Participants

Of the two hundred and ten first year psychology students who were randomly assigned to Study 2, 162 were female and 48 were male. The age of the participants ranged from 17 to 35, with a mean age of 19 years. Further, 96 % of the participants in the second study were single with no children. Due to the nature of the sample, all participants had completed at least some university education. Similar to the composition of the sample in Study 1, almost half of the participants listed no affiliation with any particular religion. A summary of the religious affiliations which were reported by the participants is presented in Appendix A.

Phase 1: Scale Determination and Item Development

Measures

Demographics

A demographic information sheet was utilized in the second study to obtain information about the participants' gender, age, marital status, completed education,

current occupation, and religious affiliation (if any) (see Appendix F).

Spirituality

The 50 item Spirituality Questionnaire which was developed in Study 1 was used to assess the spirituality of the participants in Study 2.

Quality of Life

Four scales were used in Study 2 to assess the participants subjective well being, as follows: the Satisfaction with Life Scale (Diener et al., 1985), the Positive and Negative Affect Scale (PANAS) (Watson, Clark & Tellegen, 1988), the Perceived Quality of Life Questionnaire (PQLQ) (Pellizzari, 1992), and a shortened version of the Quality of Life Questionnaire (QLS-10) (Evans & Cope, 1989). (for further description and psychometric properties of the measures, see Study 1).

Procedure

The same procedures used in the first study were replicated in the second study.

Results

Phase 2: Item Selection and Scale Construction

The four scales of the Spirituality Questionnaire were scored and item analyzed utilizing the Neill-Paunonen item analysis program (Jackson et al., 1977). The item-related statistics for the Spirituality Questionnaire for the second study are presented in Table 5. The item analysis from the second study confirmed the four scales (Ritualistic, Experiential, Ideological, and Functional) which were produced in Study 1.

Phase 3: Internal Consistency of the scales and Spirituality Questionnaire

The item related statistics for the second sample are presented in Table 5. Further, the scale related statistics and the Cronbach's alpha estimate of internal consistency for the cross validation sample are presented in Table 6. The Cronbach's alpha was (.87), (.86), (.86) and (.91) for the Ritualistic, Experiential, Ideological, and Functional scales respectively. Further, the internal consistency of the final resulting 40 item Spirituality Questionnaire was (.96). Thus, the internal consistency of each of the four scales was very similar, and in some cases even higher, than those estimates which were reported in Study 1. The intercorrelations between the individual scales and the Spirituality Questionnaire Full Scale score are summarized in Table 7. Similar to the results which were reported in Study 1, each combination of scales produced a positive Pearson product moment correlation which was significant at ($p < .001$).

Phase 4: Construct Validation

The relationship between the derived Spirituality Questionnaire scales and subjective well-being was evaluated by calculating Pearson product-moment correlations, for each combination of Spirituality Questionnaire scales and the four measures of subjective well-being. The resulting correlation matrix is presented in Table 8. With the exception of the Experiential scale, the Spirituality Questionnaire scales were significantly correlated with three of the measures of subjective well-being, including the Perceived Quality of Life Scale, the Positive Affect Scale and Quality of Life Questionnaire. Unlike the results reported in Study 1, none of the Spirituality scales were

significantly related to the Satisfaction with Life Scale scores in the second study.

However, similar to the results of the first study, Negative Affect was not found to be related to the Spirituality Questionnaire scores.

The Discriminant validity of the Spirituality Questionnaire was further investigated in the second study by comparing the Spirituality Questionnaire scores of those individuals who were judged to belong to a "high spirituality" group, with those individuals who were judged to belong to a "low spirituality" group. A participant was assigned to the high spirituality group if he or she endorsed affiliation with any religious group, or to the low spirituality if he or she reported "none" when asked to provide a religious affiliation.

The mean scores from the Spirituality questionnaire scales for the "religious affiliation" and "no religious affiliation" groups are presented in Table 9. The mean scores for the "no religious affiliation" group ranged from 2.66 for the Ritual scale to 14.44 for the SQ Full Scale score. The mean scores for the "religious affiliation" group, ranged from 5.33 (Ritual) to 25.89 (SQ full scale score). Thus, as was reported in Study 1, the mean Spirituality Questionnaire scale scores were higher for the "religious affiliation" group than the "no religious affiliation" group. These differences applied to all subscales, as well as Spirituality Questionnaire full scale score.

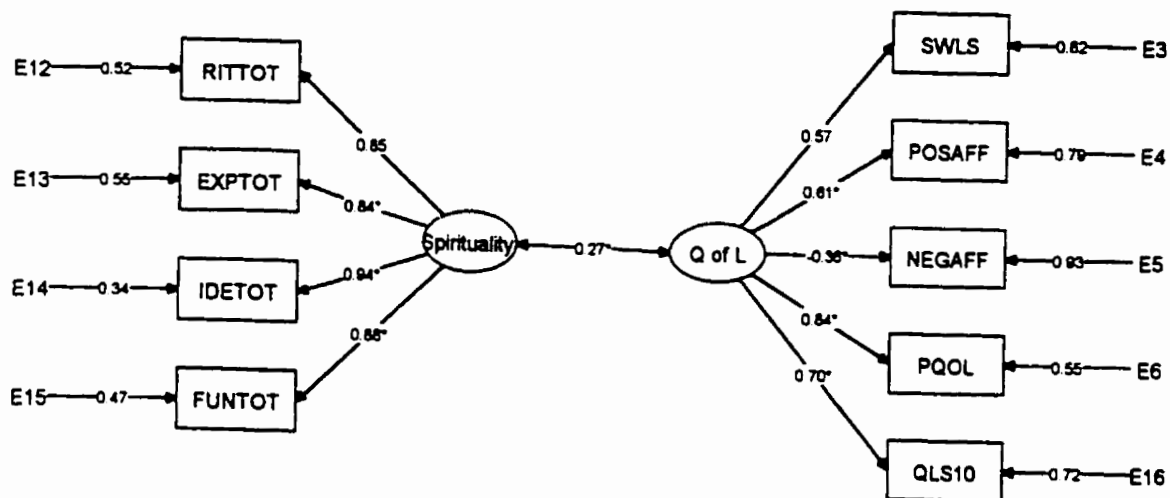
This trend was further investigated by conducting an analysis of variance to determine whether the scores on the Spirituality Questionnaire differed significantly as a function of the absence or presence of any religious affiliation. The F-ratios for the Ritual, Experiential, Ideological, Functional, and Total scale scores, which were all significant at

($p < .001$), are presented in Table 9. These significant results indicated that the Spirituality scores differed as a function of the absence or presence of a religious affiliation across all SQ scales, more than could be expected on the basis of chance.

Phase 5: Hypothetical Model Testing

To further investigate the relationship between spirituality and quality of life, the hypothetical model outlined in Figure 1, was also tested in the second study utilizing the structural equation modeling technique. The resulting model, path coefficients, and fit indices are presented in Figure 4. Spirituality and quality of life demonstrated a significant reciprocal interaction, with a significant path coefficient of (.27). The χ^2 test was significant ($\chi^2(26) = 52.49, p < .01$), indicating a less than perfect fit between the fitted and sample covariance matrices. Considered alone, this χ^2 value would result in the rejection of the specified model. However, as was previously discussed, when sample size is sufficiently large, the χ^2 value may result in rejection of the specified model, even in cases where the difference between fitted model and sample covariance matrices are trivial (Bentler, 1990). Given the very large sample size in the second study ($N=210$), it is important to also consider all of the adjunct fit indices before drawing any conclusions about the results of the model testing. .

The Goodness of fit indices from the SEM analysis in the second study were (.97), (.95), and (.96) for the CFI, BBNFI, and BBNNFI respectively. These fit indices are indicative of an excellent fit between the hypothesized model and the data in the



EQS Summary Statistics

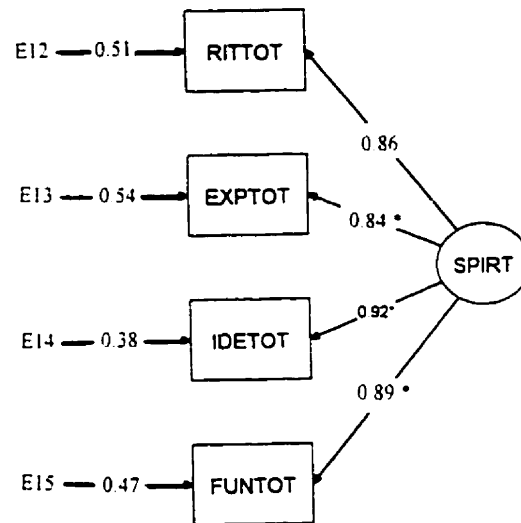
Method:	ML
Chi-Square:	52.49
df =	26
pvalue =	0.0016
BBNFI =	0.946
BBNNFI =	0.961
CFI =	0.972

Figure 4: Hypothetical Model Relating Spirituality and Quality of Life: Study 2

second study. Thus, despite the significant χ^2 value, the results of adjunct fit indices support a reciprocal relationship between spirituality and quality of life in the second study. As such, the results of the hypothetical modeling in Study 2, support the findings reported in Study 1.

To further investigate the dimensionality of spirituality, confirmatory factor analysis was also conducted in the second study utilizing structural equation modeling. The results of this confirmatory factor analysis of the four scales of the Spirituality Questionnaire are presented in Figure 5. The path coefficients for the Ritual (.86), Experiential (.84), Ideological (.92), and Functional (.89) scales were all highly significant, indicating that all four scales contributed to the construct of spirituality. The χ^2 test was significant ($\chi^2(2) = 8.54, p < .01$), indicating a less than perfect fit between the fitted and sample covariance matrices. However, the resulting goodness of fit indices were (.99), (.97), and (.99) for the CFI, BBNFI, and BBNNFI respectively. Thus, the results of the SEM analyses are indicative of an almost perfect fit between the hypothesized model and the data from the present study.

In addition, the Wald test was utilized to determine whether any of the four scales were redundant in the model. The results of the Wald test indicated that all of the all paths in the model were significant at ($p < .000$). These results indicated that none of the paths could be eliminated without compromising the overall fit of the model, and thus provide support for the inclusion of all four scales in the Spirituality Questionnaire. As such, the results of this confirmatory factor analysis provide support for a multidimensional conceptualization of the latent structure of spirituality.



EOS Summary Statistics

Method:	ML
Chi-Square:	8.54
df =	2
pvalue =	0.0140
BBNFI =	0.988
BBNNFI =	0.971
CFI =	0.990

Figure 5: Confirmatory Factor Analysis of Spirituality - Study 2

CHAPTER 4:
THE VERIFICATION OF THE ITEMS, SCALES, AND PSYCHOMETRIC
PROPERTIES OF THE SPIRITUALITY QUESTIONNAIRE
USING A TEMPORALLY DISTINCT SAMPLE

STUDY 3

A primary goal of Study 3 was to replicate the findings of Studies 1 and 2 with a temporally distinct sample. In particular, this goal involved validating the items and scales of the Spirituality Questionnaire that were developed in the first study. In order to provide further support for the reliability of the Spirituality Questionnaire, the internal consistency of the SQ scales and full scale were also assessed in the third study.

In order to further establish the reliability of the Spirituality Questionnaire, the temporal stability of the this measure was investigated by comparing the SQ subscale and full scale scores obtained at two different sessions separated by a three month interval. The investigation of the test-retest reliability of the Spirituality Questionnaire was a goal that was unique to the third study.

A secondary goal of the third study was to further investigate the construct validity of the Spirituality Questionnaire. The four measures of quality of life, which were administered in the first and second study were re-administered during Study 3. In addition, the construct validity of the Spirituality Questionnaire was further investigated by correlating the SQ scores with other related, but distinct measures, including scores from the Religious Orientation test, and the Purpose in Life Test.

A final aim of the third study involved developing and validating a Spiritual Behavior and Experience Checklist as an extension of the Spirituality Questionnaire. Although related to the Spirituality Questionnaire, this new checklist was designed to differ in a number of ways. First, as compared to the SQ, which is primarily a measure of beliefs and attitudes regarding spiritual behavior, the Spiritual Behavior and Experience Checklist was designed to assess the self-reported frequency of spiritual behaviors and experiences. These two measures also differ on the type of response format which was used. While the SQ was designed as a forced-choice True/False format, the Spiritual Behavior and Experience Checklist was designed as Likert-type frequency checklist of spiritual behavior.

Method

Participants

Two hundred and forty-two first year psychology students participated in the third study to fulfill a research component of an introductory psychology course. The age of the participants ranged from 17 to 45, with a mean age of 21 years. Of the 242 individuals who participated in the third study, 188 were female, and 53 were male. A summary of the demographic information for the participants in the third study are presented in Table 3. As was the case in Study 1 and Study 2, almost half of the participants responded “none” to a query about personal religious affiliation. (for a summary of religious affiliations see Appendix A).

Measures

Demographics

A demographic information sheet was utilized in the third study to obtain information about the participants' gender, age, marital status, completed education, current occupation, and religious affiliation (if any). A summary of the religious affiliations which were reported by the participants in the third study is presented in Appendix A).

Spirituality

The 40 item Spirituality Questionnaire which was developed in Studies 1 and 2 was used to assess the spirituality of the participants in Study 3.

Quality of Life As in Studies 1 and 2, four scales were used in Study 3 to assess the participants subjective well being, as follows: the Satisfaction with Life Scale (Diener et al., 1985), the Positive and Negative Affect Scale (PANAS) (Watson, Clark & Tellegen, 1988), the Perceived Quality of Life Questionnaire (PQLQ) (Pellizzari, 1992), and a shortened version of the Quality of Life Questionnaire (QLS-10) (Evans & Cope, 1989). (see Measures in Study 1).

Religious Orientation The degree to which each participant lived his or her religion was assessed using the Intrinsic and Extrinsic Religious Orientation Scales (Allport & Ross, 1967). A high score on the Intrinsic Religiousness scale indicates that the individual experiences religion as a primary motivating factor, which is fully integrated into his or her life. In contrast, a high score on the Extrinsic Religious Orientations indicates that the individual utilizes religion to obtain specific goals, such as

securing social status or emotional and social support. Further, Allport suggested that individuals who score high on both Intrinsic and Extrinsic Orientation scales are indiscriminately pro-religious in their attitudes. Adequate estimates of internal consistency have been reported for both the Intrinsic scale (.79) and the Extrinsic (.65) scale (Genia, 1993).

Purpose in Life The Purpose in Life Test [PIL] (Crumbaugh, 1968) was administered to assess the degree to which each participant experiences a sense of purpose or meaning in his or her life. Each of the 20 statements on the PIL test are rated on a seven point scale with a low score (1-2) indicating a lack of clear meaning or direction, and a high score (6-7) indicating a clear sense of life purpose or meaning. Becker and Cousins (1979). have reported that the PIL has good internal consistency and test-retest reliability estimates of .77 and .79 respectively. The PIL test has been found to be significantly correlated to satisfaction with present life circumstances (Becker & Cousins, 1979).

Procedures

The first session of the third study was conducted in the same manner as in Study 1. All participants completed a number of paper and pencil questionnaires including the Spirituality Questionnaire and the four measures of subjective well being.

Study 3 differed from the first two studies, as it involved a second session, in which all participants were asked to return three months after completion of the first session. During the second session, all participants were asked to complete the Spirituality Questionnaire, the Purpose in Life test, and the Religious Orientation Scale.

Following completion of the second session, all participants were debriefed and thanked for their assistance.

Phase 1: Verification of Items and Scale Construction of the Spirituality Questionnaire

As a primary goal of Study 3 was to replicate the findings obtained in the first two studies, similar analyses were performed on the Spirituality Questionnaire. First, frequency counts were calculated for the responses to all 40 items. All of the items on the Ritualistic, Experiential, Ideological, or Functional scales of the SQ had midrange frequency counts, indicating that these items have good discriminatory ability.

Further, the four refined scales of the Spirituality Questionnaire were scored and item analysis was conducted utilizing the Neill-Paunonen item analysis program (Jackson et al., 1977). The item-related statistics for the Spirituality Questionnaire for the third study are presented in Table 5. The item analysis from the Study 3 confirmed the four scales (Ritualistic, Experiential, Ideological, and Functional) which were produced in Study 1 and verified in Study 2. According to the decision rules outlined in Study 1, item content and the composition of the Ritual, Experiential, Ideological, and Functional scales of the SQ were maintained.

Phase 2: Item Development and Selection and Scale Construction of the Spiritual Behavior and Experience Checklist

A distinct goal of the third study involved developing a Spiritual Behavior and Experience Checklist. The Rational-Empirical test construction methodology (Jackson et

al., 1977) was used to develop this new measure. As this new checklist was designed as a behavioral self-report extension of the SQ, items were developed for the Ritual, Experiential, Ideological, and Functional components based on the definitions found in Table 4. Fifteen items were written for each of these four scales, and eight items were chosen to measure each SQ scale on the basis of the item's face validity. To control for response acquiescence, half of the developed items were positively keyed, and half were negatively keyed. For each of the 32 items, the participants were asked to indicate the frequency of each of the behaviors or experiences, where 0 = never, 1 = rarely, 2 = monthly, 3 = weekly, and 4 = daily.

The four conceptual scales of the Spiritual Behavior and Experience Checklist were scored and an item analysis was conducted utilizing the Neill-Paunonen item analysis program (Jackson et al., 1977). The item-related statistics for the Spiritual Behavior and Experience Checklist are presented in Table 10. The resulting mean item-total correlations and the item efficiency indices of the four scales were very low, indicating that several items were more highly correlated with another scale than the scale that they were designed to measure.

Accordingly, exploratory factor analysis was performed on the 32 items of the Spiritual Behavior and Experience Checklist in order to further examine the latent factorial structure of the data set. A conservative criterion ($\pm .40$) for factor loadings was used in the present analysis. Four independent factors were extracted using an orthogonal (Varimax) rotation, based on a four factor criterion. The resulting four factor solution

Table 10

Item-Related Statistics for the Spiritual Behavior and Experience Checklist Subscales

	Mean Item <i>p</i> value	Mean item total correlation	Mean item efficiency index
Ritual	2.84	.10	.08
Experiential	1.99	.02	.00
Ideological	3.03	.03	.01
Functional	3.53	.00	.04

accounted for 52.75% of the variance. The four resulting factors and the types of scale items which loaded highly onto each factor are presented in Table 11.

Phase 3: Establishing Internal Consistency

Spiritual Behavior and Experience Checklist

Scores for the four spiritual behavior and experience scales (Ritual, Experiential, Spirituality Seeking and Functional) were calculated for each of the participants. Next, the internal consistency of each of the four scales was assessed utilizing a reliability analysis program in Statistical Package for the Social Sciences (SPSS) (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). A high level of internal consistency was obtained for three of the scales [($.87$), ($.88$), and ($.84$) for the SBEC Ritual, Experiential, and Spirituality Seeking scales respectively], whereas the SBEC Functional Scale had a moderate level of internal consistency ($.57$). (see Table 12). Further, the internal consistency of the 24 item Spiritual Behavior and Experience Checklist Full Scale was ($.85$).

The matrix of intercorrelations for the four Spiritual Behavior and Experience Checklist scales, and the SBEC Full Scale scores are presented in Table 13. Each pair of scales were positively correlated and significant at the ($p < .01$) level.

Spirituality Questionnaire

The scale related statistics and the Cronbach's alpha estimate of internal consistency for the cross validation sample are presented in Table 6. The Cronbach's alpha was ($.84$), ($.86$), ($.76$) and ($.86$) for the Ritualistic, Experiential, Ideological, and

Table 11

Factorial Representation of the Spiritual Behavior and Experience Checklist

	<u>Factors</u>	<u>Eigenvalue</u>	<u>% Variance</u>	<u>Types of Items with High Factor Loadings</u>
I.	Experiential	8.96	29.87 %	-items measuring the frequency with individuals personally experienced God or a higher power, or reported having peak or profound spiritual experiences.
II.	Spirituality Seeking	2.96	9.86 %	-items measuring the frequency of studying or discussing beliefs or actively seeking out involvement in activities related to the individual's spiritual beliefs or philosophy of life.
III.	Ritualistic	2.02	6.73 %	-items measuring the frequency of prayer, meditation, introspection participation in public ceremonies and rituals related to the individual's spiritual beliefs or philosophy of life.
IV.	Functional	1.89	6.29 %	-items measuring the frequency with which individuals reported that his/ her spiritual beliefs or philosophy of life provided he/she with affective (e.g. peace) or cognitive benefits (e.g. understanding).

Table 12

Scale Related Statistics of Spiritual Behavior and Experience Checklist

<u>Scale</u>	<u>n</u>	<u>M</u>	<u>SD</u>	<u>Cronbach's alpha</u>
Ritualistic	242	10.95	6.11	.87
Experiential	242	9.81	6.00	.88
Spirituality Seeking	242	9.57	5.63	.84
Functional	242	15.41	3.99	.57
Full SBEC Score	242	30.28	15.76	.85

Note: SBEC = Spiritual Behavior and Experience Checklist

Table 13

Intercorrelations Between SBEC Scales and SBEC Full Scale Score

<u>Scale</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>
1. Ritualistic	-	.63**	.79**	.46**	.91**
2. Spirituality Seeking		-	.61**	.54**	.84**
3. Experiential			-	.44**	.91**
4. Functional				-	.54**
5. SBEC Full Scale					-

Note: SBEC = Spiritual Behavior and Experience Checklist

** p<.01

Functional scales respectively. Further, the internal consistency of the final resulting 40 item Spirituality Questionnaire was (.92). Thus, the internal consistency of each of the four scales was very similar to those estimates which were reported in Study 1 and Study 2. The intercorrelations between the individual scales and the Spirituality Questionnaire Full Scale score, which ranged from .65 to .94, are summarized in Table 7. As was the case with the results which were reported in Study 1 and Study 2, each combination of scales produced a positive Pearson product moment correlation which was significant at ($p < .001$).

Phase 4: Establishing Construct Validation

Spiritual Behavior and Experience Checklist

The Spiritual Behavior and Experience Checklist subscale and total scores were calculated and subsequently correlated with the SQ scale and total scores. The resulting correlation matrix is presented in Table 14. The intercorrelations between the SBEC and SQ subscale and total scores, which ranged from (.19) to (.33) were significant at ($p < .001$) level with very few exceptions.

To further investigate the construct validity of the Spiritual Behavior and Experience Checklist, all scale scores, as well as the SBEC total scores were correlated with a number of scores from related constructs. The resulting correlation coefficients are presented in Table 15. The SBEC total scores demonstrated significant positive correlations with the shortened Quality of Life Questionnaire (.19), the Purpose in Life test (.23), and the Intrinsic Religiousness (.84) scores. However, none of the SBEC scale scores or the SBEC total scores were significantly correlated with the measure of

Table 14

Matrix of Intercorrelations Between the Spirituality Questionnaire Scales and the Spiritual Behavior and Experience Checklist Scale Scores

	Spirituality Questionnaire Scale				
	Ritual	Experiential	Ideological	Functional	Total Score
<u>SBEC Scale</u>					
1. Ritualistic	.25**	.25**	.23**	.23**	.25**
2. Spirituality Seeking	.28**	.30**	.27**	.30**	.30**
3. Experiential	.26**	.33**	.27**	.28**	.29**
4. Functional	.20**	.19**	.20**	.23**	.21**
5. SBEC Full Scale	.30**	.33**	.29**	.30**	.31**

Note: SBEC = Spiritual Behavior and Experience Checklist

** $p < .01$

* $p < .05$

Extrinsic Religiousness. Sample items for each of the Spiritual Behavior and Experience Checklist are presented in Table 16.

Spirituality Questionnaire

The Spirituality Questionnaire subscales and total scores were correlated with the four measures of subjective well being. With only one exception, (Experiential SQ scale) all of the SQ scales had positive correlations with the Perceived Quality of Life scale and the shortened Quality of Life Questionnaire, which were significant at the ($p < .01$) level. However, similar to the findings in Study 1 and Study 2, the SQ scales were not significantly correlated with the Negative Affect scores. Further, with the exception of the Functional SQ scale, the SQ scores are not significantly correlated with the Satisfaction with Life scores.

To further establish the construct validity of the Spirituality Questionnaire, the four scale scores and the full scale SQ score were also correlated with a number of related, but distinct measures. A matrix of the resulting intercorrelations is presented in Table 17. As was expected, the four scale scores, as well as the full scale SQ score all demonstrated positive correlations with the Purpose in Life scores. These correlations are (.15), (.16), (.20), (.20), and (.18), for the Ritual, Experiential, Ideological, Functional, and full SQ scores respectively. Although the correlations are small, they are all significant at the ($p < .01$) level.

All of the SQ subscales and the full scale SQ were also positively correlated with the Intrinsic Religiousness Scale, and were significant at ($p < .01$). These correlations which ranged from (.31) to (.37) are presented in Table 17. However, as was expected

Table 15

Intercorrelations Between Spiritual Behavior and Experience Checklist Scale, and Religious Orientation, Purpose in Life, and Quality of Life Measures.

Spiritual Behavior and Experience Checklist Scale					
	SBEC Ritual	SBEC Spirituality	SBEC Experiential Seeking	SBEC Functional	SBEC Total Scale
PIL	.12	.25**	.25**	.52**	.23**
INTR	.79**	.67**	.77**	.44**	.84**
EXTR	.03	-.06	.08	-.08	.02
QLS10	.11	.26**	.16*	.43**	.19*

*Note: SWLS = Satisfaction with Life Scale; POSAFF = Positive Affectivity (PANAS); NEGAFF = Negative Affectivity (PANAS); PQOL = Perceived Quality of Life; QLS10 = Quality of Life Questionnaire (10 domain- student version); PIL = Purpose in Life test; INTR = Intrinsic Religiousness (Religious Orientation Scale) EXTR = Extrinsic Religiousness (Religious Orientation Scale); SBEC = Spirituality Behavior and Experience Checklist).

** $p < .01$.

* $p < .05$.

Table 16

Sample Items from each Scale of the Spiritual Behavior and Experience Checklist

SBEC Scale	Item
<u>Ritualistic</u>	1. Attend meetings associated with my spiritual beliefs or philosophy of life. (-) 23. Avoid becoming involved in spiritual activities. (-)
<u>Spirituality Seeking</u>	11. Actively seek out activities to enhance my spiritual well being. (+) 4. Fail to include a spiritual component in important events. (-)
<u>Experiential</u>	19. Experience peace and a deep sense of spiritual well being. (+) 29. Fail to experience the presence of God or a higher power. (-)
<u>Functional</u>	26. Find comfort in my spiritual beliefs or philosophy of life. (+) 18. Fail to consider my spiritual beliefs or philosophy of life when making important decisions. (-)

Table 17

Intercorrelations Between Spirituality Questionnaire Scales, and Religious Orientation, Purpose in Life, and Quality of Life Measures: Study 3

	Spirituality Questionnaire Scale				
	Ritual	Experiential	Ideological	Functional	Total Score
SWLS	.08	.10	.07	.15*	.11
POSAFF	.04	.05	.07	.17**	.09
NEGAFF	.00	.06	-.04	-.05	.00
PQOL	.17**	.17*	.17**	.30**	.22**
QLS10	.16*	.10	.17**	.21**	.17**
PIL	.15**	.16**	.20**	.20**	.18**
INTR	.31**	.37**	.32**	.33**	.34**
EXTR	-.04	-.04	.00	-.01	.00

*Note: SWLS = Satisfaction with Life Scale; POSAFF = Positive Affectivity (PANAS); NEGAFF = Negative Affectivity (PANAS); PQOL = Perceived Quality of Life; QLS10 = Quality of Life Questionnaire (10 domain- student version); PIL = Purpose in Life test; INTR = Intrinsic Religiousness (Religious Orientation Scale) EXTR = Extrinsic Religiousness (Religious Orientation Scale).

** $p < .01$.

* $p < .05$.

this trend was not observed in the relationship between the SQ scales and the Extrinsic Religiousness scale scores, where correlations ranged from (.00) to (-.04).

Further, the discriminant validity of the Spirituality Questionnaire was investigated by comparing the Spirituality Questionnaire scores of those individuals who were judged to belong to a “high spirituality” (affiliation with any religion) group, with those individuals who were judged to belong to a “low spirituality” (no religious affiliation) group. The mean scores from the Spirituality questionnaire scales for the “religious affiliation” and “no religious affiliation” groups are presented in Table 9. The mean scores for the “no religious affiliation” group ranged from 2.34 for the Experiential scale to 13.69 for the SQ Full Scale score. The mean scores for the “religious affiliation” group, ranged from 5.05 (Experiential) to 24.36 (SQ full scale score). Thus, as was reported in Study 1 and Study 2, the mean Spirituality Questionnaire scale scores were higher for the “religious affiliation” group than the “no religious affiliation” group. These differences applied to all subscales, as well as Spirituality Questionnaire full scale score.

An analysis of variance was conducted to determine whether the scores on the Spirituality Questionnaire differed significantly as a function of the absence or presence of any religious affiliation. The F-ratios for the Ritual, Experiential, Ideological, Functional, and Total scale scores which were all significant at ($p < .001$), are presented in Table 9. These significant results indicated that all of the Spirituality subscale and total scale scores differed significantly as a function of the absence or presence of a religious affiliation.

However, as it is possible that an individual may be not be affiliated with any particular religion, and still have high spirituality, a second criterion, that is, whether or not each participant indicated that he or she had a well defined set of spiritual beliefs or philosophy of life, was utilized to differentiate individuals measuring high or low in spirituality. Four distinct categories were formed on the basis of whether or not the participant had a clear set of beliefs, and whether or not the participant was affiliated with a particular religion as follows: “no religious affiliation and no clear belief system”, “religious affiliation and no clear belief system”, “clear belief system and no religious affiliation”, and both a “clear belief system and religious affiliation”. The mean scores on the Spirituality Questionnaire scales for each of the four groups is presented in Table 18.

The mean Spirituality Questionnaire scores were lowest for the “no religious affiliation and no clear belief system” group, and highest for the “clear belief system and religious affiliation” group. Although the mean scores for the “clear belief system and no religious affiliation” group was lower than mean scores for the group that had both a religious affiliation, and a clear belief system, they were higher than the mean scores for the group that had no clear belief and no religious affiliation. These trends applied to all four of the Spirituality Questionnaire subscales, as well as the SQ full scale scores, and were consistent across all three studies. Evidently, the fact that an individual does not have a specific religious affiliation does not necessarily imply that he or she has no specific clearly defined spiritual beliefs or philosophy of life. These findings may be interpreted as additional support for the supposition that there may be many individuals who may not express their spirituality through standard religious activities, such as

Table 18
Mean Scores on the Spirituality Questionnaire Scales as a Function Presence or Absence of Religious Affiliation and Absence or Presence of Clearly Defined Spiritual Beliefs

	GROUP			
	No Religious Affiliation/ No Clear Belief System	Religious Affiliation/ No Clear Belief System	No Religious Affiliation/ Clear Belief System	Religious Affiliation/ Clear Belief System
SQ SCALE				
	Study 1			
RITUAL	2.98	5.28	4.90	7.93
EXPERIENTIAL	1.81	3.22	3.28	5.36
IDEOLOGICAL	2.68	4.10	4.50	6.82
FUNCTIONAL	2.90	4.93	4.87	6.99
SQ TOTAL	10.38	17.53	17.54	27.10
N/ GROUP	58	49	38	77
	Study 2			
RITUAL	3.22	5.04	5.66	8.88
EXPERIENTIAL	1.99	2.49	4.01	6.88
IDEOLOGICAL	2.69	7.70	5.91	7.70
FUNCTIONAL	2.62	4.21	6.73	8.14
SQ TOTAL	10.50	15.39	22.33	31.61
N/ GROUP	70	37	35	68
	Study 3			
RITUAL	3.53	5.42	4.82	8.23
EXPERIENTIAL	2.00	3.57	3.06	6.12
IDEOLOGICAL	2.56	4.24	5.09	7.12
FUNCTIONAL	3.46	5.06	5.40	7.23
SQ TOTAL	11.54	14.75	18.37	28.72
N/ GROUP	67	61	28	85

NOTE

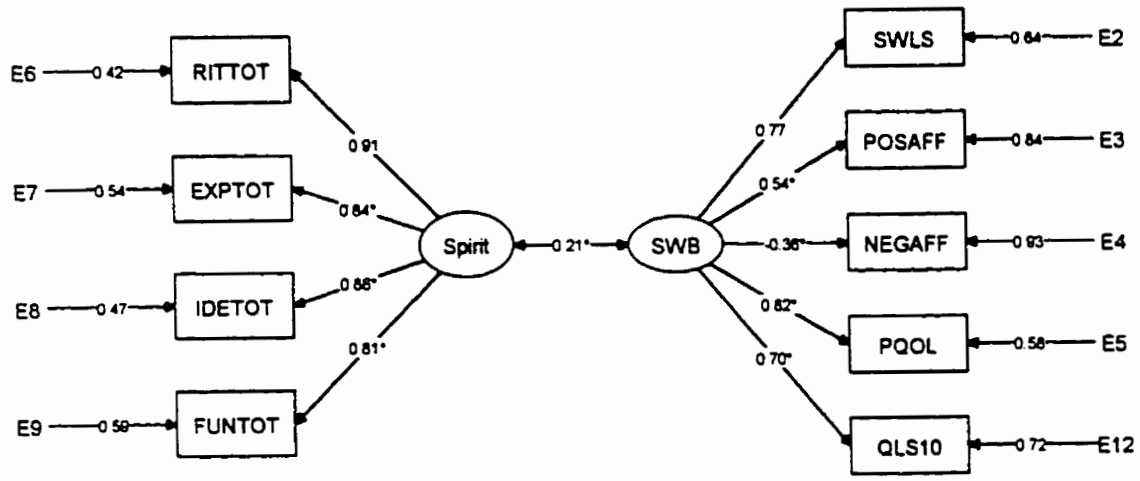
SQ = Spirituality Questionnaire; SQ TOTAL = Spirituality Questionnaire Total Score summed across all 4 subscales; No religious affiliation = the participant that indicated on the demographic sheet that he/she had no particular religious affiliation; No Clear Belief System = the participant answered true to a marker item on the SQ, indicating that he/she has a clear system of spiritual beliefs or a clearly defined philosophy of life; N/ GROUP = Number of participants in each category.

church attendance, but for whom spirituality and spiritual growth may still be very important.

Phase 5: Hypothetical Model Testing

A hypothetical model relating spirituality and quality of life was also tested in the third study with the goal of replicating the findings of the two previous studies (see Figure 1 for the hypothesized model). The resulting model is presented in Figure 6. As was the case in studies 1 and 2, a significant path coefficient (.21) supported a significant reciprocal effect between spirituality and quality of life. The χ^2 test was significant ($\chi^2(26)=52.67, p<.01$), indicating a less than perfect fit between the sample and fitted covariance matrices. Considered alone, this χ^2 value would result in the rejection of the specified model.

However, as the sample size in the third study is very large ($N=242$), the specified model should not be rejected on the basis of the χ^2 value, for reasons similar to those outlined in the results section of the second study (Bentler, 1990). Consequently, the adjunct fit indices were inspected to further assess the degree to which the data from the third study fit the hypothesized model. The goodness of fit indices were (.98), (.95), and (.97) for the CFI, BBNFI, and BBNNFI respectively. Considered together, the fit indices indicated an extremely good fit between the hypothesized model and the data in Study 3. Thus, similar to the results of the first and second study, the results of the structural equation modeling technique in the third study supported a reciprocal interaction between spirituality and quality of life.



EQS Summary Statistics

Method:	ML
Chi-Square:	52.67
df =	26
pvalue =	0.0015
BBNFI =	0.952
BBNNFI =	0.965
CFI =	0.975

Figure 6: Hypothetical Model Relating Spirituality and Quality of Life: Study 3

Phase 6: Estimating Test-Retest Reliability of the Spirituality Questionnaire

An additional goal of the third study was to estimate the temporal stability of the scale and full scale scores of the Spirituality Questionnaire. Of the initial 242 individuals who participated in the first session of the third study, 177 individuals returned to the second session three months later. The scores for these 177 participants were calculated and the Spirituality Questionnaire scale and total scores from the first session were correlated, with those scores which were obtained at the three month retest session. The resulting correlation coefficients for the Ritual, Experiential, Ideological, Functional, and SQ full scale were .15, .20, .20, .20, and .20 respectively. With the exception of the Ritual scale, which was significant at ($p < .05$), all retest correlation coefficients were significant at ($p < .01$).

CHAPTER 5: DISCUSSION

The Development of the Spirituality Questionnaire

The Spirituality Questionnaire was developed utilizing the rational-empirical method of test construction (Jackson, 1970). According to the decision rules used, ten of the original items were deleted from the questionnaire. The majority of these deleted items had been written to assess the ideological component of spirituality. Specifically, several items that assessed a belief in God or a higher power, or a belief in humans as spiritual beings were deleted, as these items were so highly endorsed, that they were judged to have poor discriminant ability. With the exception of these revisions, the four resulting Spirituality Questionnaire scales were very similar to the original conceptualizations of the four initial scales. Definitions of individuals either high or low on each of the Spirituality Questionnaire scales are presented in Table 19. The resulting 40 item questionnaire was comprised of four scales, including the Ritualistic, Experiential, Ideological, and Functional aspects of spirituality. Examples of specific items from each of the four developed scales are presented in Table 20.

Internal Consistency of the Spirituality Questionnaire

Estimates of internal consistency ranged from .76 to .95 for the initial Study. These estimates held for the second study. For the cross-validation sample, estimates of internal consistency, which ranged from .86 to .96, were generally even higher than the estimates for the first sample. Similar estimates were also found in the third study, where estimates of internal consistency ranged from .64 to .94. Further, the positive correlations between pairs of individual scales from the Spirituality Questionnaire were highly

Table 19

Individual Definitions for Scales of the Spirituality Questionnaire Following Scale Development

Spirituality Questionnaire Scale	An individual who measures high on given scale	An individual who measures low on given scale
RITUALISTIC	-frequently engages in private ritualistic activities, such as prayer, introspection, and meditation, as well as public ritualistic activities, including participation in rituals, or ceremonies associated with his or her spiritual beliefs or philosophy of life.	-rarely (if ever) engages in private ritualistic activities, such as prayer, introspection, and meditation, or public ritualistic activities, including participation in rituals, or ceremonies associated with his or her spiritual beliefs or philosophy of life.
EXPERIENTIAL	-frequently experiences a close affiliation with God or a higher power in his or her life and has profound spiritual or peak experiences, and a deep sense of peace, & spiritual well-being.	-rarely (if ever) experiences a close affiliation with God or a higher power in his or her life and does not have profound spiritual or peak experiences or a deep sense of peace, & spiritual well-being.
IDEOLOGICAL	-has a clearly defined set of spiritual beliefs or philosophy of life.	-does not have a clearly defined set of spiritual beliefs or philosophy of life.
FUNCTIONAL	-derives meaning and understanding a sense of belongingness, and affective benefits, such as hope and comfort, from his or her spiritual beliefs or philosophy of life	-does not derive meaning and understanding, a sense of belongingness, and affective benefits such as hope or comfort from his or her beliefs or philosophy of life

Table 20

Sample Items from each Scale of the Spirituality Questionnaire

Scale	Item
<u>Ritualistic</u>	23. I rarely worship or give thanks to God or a higher power. (-)
	7. I regularly attend ceremonies or rituals associated with my spiritual beliefs or philosophy of life. (+)
<u>Experiential</u>	37. I rarely experience the presence of God or a higher power. (-)
	25. I have occasionally had "peak" or "unreal" experiences, during which I have perceived beauty, purpose, and unity in all that exists. (-)
<u>Ideological</u>	10. I believe that it is possible to know God or a higher power in a personal way. (-)
	39. I do not have a clear sense of meaning and direction in my life.(-)
<u>Functional</u>	50. My spiritual beliefs or philosophy of life help me to understand pain and adversary. (+)
	48. My spiritual beliefs do not provide me with comfort during times of great duress. (-)

significant in both the initial and both cross-validation samples. Thus, the Spirituality Questionnaire provides a reliable method for measuring the multidimensional aspects of spirituality.

Test-Retest Reliability of the Spirituality Questionnaire

The temporal reliability of the Spirituality Questionnaire was also investigated in the third study over a three month period. Although the correlation coefficients were significant, the three month test-retest correlations for the Spirituality Questionnaire, which ranged from .15 to .20, were somewhat low. This finding may be explained in terms of the mean age of the samples used in the three studies reported herein. Specifically, as the mean ages of the three samples ranged from 19 to 20 years of age, the vast majority of the participants in the three studies were just entering the period of young adulthood. Researchers have generally reported that spiritual beliefs are not very stable until an individual is in his or her late twenties or early thirties.

For example, the findings of one fifteen year longitudinal panel study have indicated that spiritual beliefs and practices are not stable until individuals reach young or middle adulthood (Hamberg, 1991). Additional research is required with various age groups to determine the temporal stability of spirituality as measured by the Spirituality Questionnaire for different periods of life span development.

Construct Validity of the Spirituality Questionnaire

An important consideration when developing a new measure is whether the instrument actually measures what it was designed to measure. In establishing construct validity, the convergent validity of any given measure may be assessed by correlating

scores obtained on the new measure with scores obtained on valid measures of similar but distinct constructs. Thus, if the Spirituality Questionnaire is in fact a valid measure of spirituality, the SQ scores should be significantly correlated with several other related constructs which have been demonstrated to have a significant relationship with spirituality.

As was previously discussed, researchers have reported that a number of the components of spirituality have been found to be related to measures of subjective well-being (Poloma & Pendleton, 1991; Kehn, 1995; Bissell & Hardin, 1995). Accordingly, any valid measure of spirituality should demonstrate high correlations with measures of quality of life.

Thus, the scores from the four scales of the Spirituality Questionnaire, as well as the Spirituality Questionnaire Full Scale were correlated with the four measures of quality of life to establish the construct validity of the Spirituality Questionnaire. In the initial sample (Study 1), all Spirituality Questionnaire scales were positively correlated with the four measures of quality of life at ($p < .01$), with the exception of the Negative Affect Scale with which the SQ scales had small negative correlations. Thus, the Spirituality Questionnaire has good levels of construct validity, as measured by significant positive correlations with four measures of quality of life. These relationships also held for the second study, with the exception of the Satisfaction with Life Scale, which was not found to be significantly correlated with the Spirituality Questionnaire scales.

The construct validity of the Spirituality Questionnaire was further investigated in the third study. If the Spirituality Questionnaire is in fact a valid measure of spirituality,

the SQ scores should be significantly correlated with several other related constructs which have been demonstrated to have a significant relationship with spirituality. In the third study, the Spirituality Questionnaire scores were found to have significant positive correlations with a number of related constructs including Quality of Life scores, and Purpose in Life scores. In addition, as would be expected, the SQ scores were positively correlated with the measure of Intrinsic Religiousness.

The construct validity of the Spirituality Questionnaire was further explored by correlating the scale and total SQ scores to those of the newly developed Spiritual Behavior and Experience Checklist measure. The resulting positive correlations, which were all highly significant provide further evidence of the construct validity of the Spirituality Questionnaire. Thus, the Spirituality Questionnaire has excellent convergent validity, as measured by highly significant positive correlations with several related constructs including Purpose in Life, Intrinsic Religiousness, frequency of spiritual behavior, frequency of spiritual experiences, and several measures of subjective well-being.

The construct validity of any new measure may also be investigated by correlating scores obtained on the new measure to scores obtained on other unrelated measures. That is, if the Spirituality Questionnaire is a valid measure of spirituality scores obtained on this measure should be unrelated to scores obtained on measures which are not related to spirituality. In the present study, the divergent validity of the Spirituality Questionnaire was investigated by correlating SQ scores with extrinsic religiousness. As was expected

no significant relationship between the SQ scores and Extrinsic Religiousness were found in the present study.

Additional research is required to further establish the divergent validity of the Spirituality Questionnaire. In the present study, it was proposed that a person's spirituality fulfills a number of important functions for that individual. For example, it was suggested that a clear set of beliefs provides an individual with comfort and hope during times of duress. As such, it would be expected that high spirituality would be negatively correlated with measures of hopelessness.

In addition, researchers have reported that an individual's spirituality has a stress buffering effect (Maton, 1989). Accordingly, it would be expected that high measures of spirituality would be negatively correlated with measures of subjective stress. Subsequent research is required to investigate these ideas, and to further establish the divergent validity of the Spirituality Questionnaire.

Discriminant Validity of the Spirituality Questionnaire

A preliminary investigation of the discriminant validity of the Spirituality Questionnaire indicated the Spirituality Questionnaire is useful for distinguishing between individuals from high or low spirituality groups, when these groups are formed on the basis of the presence of a specific religious affiliation. Significant between group differences were found for mean scores on the Ritualistic, Experiential, Ideological, Functional, and Spirituality Questionnaire Full Scale scores. In addition, these differences were found in all three studies. Research is required to further investigate the discriminant validity of the Spirituality Questionnaire, by comparing groups of individuals judged to

be high or low on spirituality. For example, mean Spirituality Questionnaire scores of clergy members may be compared to the mean scores of other professionals.

The newly developed Spirituality Questionnaire has a number of advantages over other previously reviewed measures of spirituality. First, the questionnaire was developed on the basis of clearly defined theoretical constructs, utilizing the Rational-Empirical method of test construction. The Spirituality Questionnaire has excellent internal consistency and well established construct validity. Further, the SQ is consistent with a multidimensional conceptualization of spirituality which has been supported by a large body of empirical evidence.

Furthermore, the SQ was designed with the goal of developing a broad and comprehensive measure of spirituality which is not limited to use for any one particular religious ideation. This goal was considered important for a number of reasons. First, many of the extant measures of spirituality have been criticized as being too narrowly defined and specific to one particular religious ideation. Such specificity makes between group comparisons difficult, if not impossible. Although Judeo-Christian religions tend to be the most prominent in our culture, ours is still a diverse and spiritually pluralistic society. Accordingly, useful measures of spirituality should be developed with this diversity in mind.

Consistent with the goal of developing a more universal measure of spirituality, the Spirituality Questionnaire was developed on the basis of a four-dimensional conceptualization of spirituality, which researchers have indicated are universal in all religious traditions. Further, the Spirituality Questionnaire was designed to represent a

broad and comprehensive set of spiritual beliefs, experiences, and behavior, which are not specific to any one particular religious affiliation. Also, the terminology of the items which were developed for the SQ was chosen to maximize the universal usefulness of this new measure.

The Development of the Spiritual Behavior and Experience Checklist

The Spiritual Behavior and Experience Checklist was developed in the third study utilizing the Rational-Empirical method of test construction. This new measure which assesses the frequency of spiritual behavior and spiritual experiences was developed as an extension of the Spirituality Questionnaire. On the basis of the reliability analysis, and subsequent exploratory factor analysis, three of the four original scales including the ritual, experiential, and functional were maintained, the ideological scale was deleted, and a spirituality seeking scale was added. The Ideological scale was deleted from the Spiritual Behavior and Experience Checklist because the results of the reliability analysis indicated that the overall reliability of the Spiritual Behavior and Experience Checklist would increase if this particular scale was omitted. It is possible that the Ideological scale was unsuitable for inclusion in this new measure because the frequency rating scale of Spiritual Behavior and Experience Checklist is more appropriate for behavioral and experiential, as opposed to ideological content.

The four scales of this new measure have excellent internal consistency, and good construct validity, as measured by highly significant positive correlations with several related constructs including Purpose in Life, Intrinsic Religiousness, and several measures of subjective well-being. The construct validity of the Spiritual Behavior and Experience

Checklist was further demonstrated by the significant correlations between the scales of this new measure and those of the Spirituality Questionnaire. Although the Spiritual Behavior and Experience Checklist has been found to have excellent internal consistency and construct validity, additional research is required to further establish the psychometric properties of this new measure.

Implications

The findings of the present research have a number of important theoretical and applied implications. These empirical contributions will be discussed in the following sections.

Dimensionality of Spirituality

To date, the research investigating how to best conceptualize spirituality has been mixed and inconclusive. Allport and Ross (1967) had proposed that religiosity was best represented by a single dimension, with Intrinsic and Extrinsic Religiosity at opposite ends of this continuum. The Ritualistic scale of the Spirituality Questionnaire, which measures the degree to which an individual actively participates in spiritual activities, is similar to Allport's (1967) Intrinsic Religiosity. Further, the Functional scale of the Spirituality Questionnaire, which assesses the positive functions of an individual's spiritual beliefs and behavior, is similar to Allport's Extrinsic Religiosity. In the present study, the Ritualistic scale scores demonstrated a significant positive relationship with the Functional scale scores. As such, the results of the present study support the findings of Kirkpatrick (1989), that indicated that Allport's Intrinsic and Extrinsic Religiosity function as distinct dimensions rather than opposite ends of a single continuum.

Observations made in the third study are also relevant to the present discussion. If the Intrinsic and Extrinsic Religiousness scales represent opposite ends of a single continuum, as was originally proposed by Allport and Ross (1967), high scores on the Intrinsic scale should be significantly correlated with low scores on the Extrinsic scale. However, in Study 3, the participants' scores on the Intrinsic and Extrinsic Religiousness scales were not found to have significant negative correlations. Thus, the results of the present research support the conclusions made by numerous researchers who have recommended that the Allport and Ross Intrinsic and Extrinsic scales should only be used as two distinct constructs (Hunt & King, 1971; Kirkpatrick, 1989).

As was previously discussed, numerous researchers (Chalfant et al., 1987; Ledbetter, Smith, Fischer, Vosler-Hunter, & Chew, 1991) have criticized questionnaires which have been designed to measure spirituality in terms of only one or two dimensions, and have recommended that additional research should be conducted to investigate the multidimensional structure of spirituality. Accordingly, the Spirituality Questionnaire was developed as a multidimensional measure to assess an individual's spirituality in four major domains, which included the following: Ritualistic, Experiential, Ideological, and Functional aspects of spirituality. The item and scale analyses from all three studies supported this four dimensional conceptualization of spirituality. Further, the highly significant correlations which were observed between the Ritualistic, Experiential, Ideological, and Functional scales in all three studies may also be interpreted as support for the four dimensional conceptualization of spirituality which has been proposed by (Glock & Stark, 1965; Weigert and Thomas, 1969; Clayton and Gladden, 1973). As well,

the results of the confirmatory factor analyses which were conducted in Studies 1 and 2, provide support for the four dimensional conceptualization of the Spirituality Questionnaire. Thus, consistent with the recommendations of numerous researchers, the results of the present study support a multidimensional conceptualization of spirituality (Glock & Stark, 1965; Chalfant et al., 1987; Ledbetter, Smith, Vosler-Hunter, & Fischer, 1991; Ventis, 1995).

Hypothetical Relationship between Spirituality and Quality of Life

As was previously discussed, the results of the three studies presented herein support the findings reported by researchers who have found a significant positive relationship between spirituality and quality of life (Chamberlain & Zika, 1988, Poloma & Pendleton, 1991; Bissell & Hardin, 1995). In all of the three present studies, spirituality was consistently found to have a positive relationship with quality of life, as measured by the Perceived Quality of Life scale, and the shortened version of the Quality of Life Questionnaire.

However, the relationship between spirituality and life satisfaction, as measured by the Satisfaction with Life Scale was less consistent. Although spirituality was found to be correlated with global satisfaction with life in the first study, this finding was not replicated in the second or third study. One possible explanation for this finding, is the fact that spirituality is often associated with specific morals and values. Several of the items on the Satisfaction with Life Scale measure life satisfaction in an absolute sense. For example, one item from the SWLS is as follows: "If I could live my life over, I would change almost nothing" (Diener et al., 1985). Thus, an individual who measures

high on spirituality may not be completely satisfied with his or her life and behavior, both past and present in an absolute sense.

It is also possible that the type of measurement instrument used to assess quality of life has an effect on the observed relationship between spirituality and quality of life. Essentially there are two distinct types of quality of life measures. "Bottom-up" instruments, such as the Quality of Life Questionnaire (Evans & Cope, 1989) assess life satisfaction as a composite of scores from several subscales, which have been designed to measure the conceptual components of quality of life. The Satisfaction with Life (Diener et al., 1985) is an example of a second type of assessment instrument, which follows a "top-down" model of quality of life. "Top-down" instruments are global measures which assesses quality of life in terms of the individual's subjective satisfaction with his or her life in general. The results of the present study indicate that the relationship between spirituality and quality of life may depend in part upon the type of instrument used to measure quality of life. Evidently, additional research is required to further investigate the relationship between spirituality and life satisfaction, as well as the impact of the type of instrument used to investigate this relationship.

Theoretical Models of Quality of Life

A major goal of the three present studies was to investigate the relationship between spirituality and quality of life, by testing a hypothetical model relating these two latent variables. Based on the results of past research, it was predicted that spirituality and quality of life would be related in a direct and reciprocal manner. The results of the structural equation modeling analysis indicated that the data from the first study fit the

hypothesized model extremely well. These findings were replicated in the results of the second and third study as well. As such, the results of all three studies reported herein support a direct and reciprocal relationship between spirituality and quality of life. Thus, the results of the present study not only contribute to the understanding of the relationship between spirituality and quality of life, but also, provide support for the importance of integrating a spiritual component into subsequent models of quality of life.

Several theories could be forwarded to explain the highly significant relationship which has been found between spirituality and quality of life. First, it could be proposed that spirituality has an impact on an individual's quality of life, because spirituality functions to provide affective benefits such as comfort and hope. It has also been hypothesized that spirituality is associated with quality of life, because the spiritual beliefs or philosophy of life which are a core component of spirituality, function as a superordinate meaning system which is capable of endowing secular activity with integrative meaning (Schweiker, 1969). The highly significant positive correlations which were found between the Functional scale of the Spirituality Questionnaire and measures of quality of life in the present study provide some preliminary support for both of these conjectures.

Kass and associates (1991) have also suggested that spirituality may be associated with the development of positive and healthy attitudes, which would impact the individual's health and quality of life. It is also possible that the transcendental experiences, which are commonly associated with high measures of spirituality, and the positive affect that often accompanies such experiences have an impact on the

individual's quality of life. To date, all of the studies which investigated this relationship have been correlational in nature. As such, no direct cause and effect relationships can be established. The precise mechanism by which spirituality has a positive impact on quality of life, or the mechanism by which quality of life has an impact on the individual's spirituality requires further investigation before any firm conclusions can be drawn.

Health promotion

Researchers who have investigated the relationship between health and subjective well-being, have reported that quality of life has been found to be related to health and psychological as well as physical well-being (Hawkins & Larson, 1984; Evans, Thompson, Browne, Barr, & Barton 1993; Evans, 1997). Further, Evans (1994, 1997) has recommended that health may be promoted by increasing quality of life, at either the level of the individual or the population at large. Based on the direct and reciprocal relationship which was found between spirituality and quality of life in the present study, it is recommended that health promotion and programs designed to enhance quality of life should include the consideration of the individual's spirituality.

Limitations and Future Directions

A limitation of the present study is the restricted generalizability of the findings. Due to the nature of the present sample, the findings can only be generalized to university student populations. Interestingly, the number of participants in the two present studies who endorsed a belief in God and a belief that humans have an important spiritual component, was very similar to those reported by Gallup & Castelli (1989) from a large representative sample from the general population. However, the present study must be

replicated with a random sample from the population, before the findings reported herein can be generalized to the population at large.

The Spirituality Questionnaire has repeatedly demonstrated high levels of internal consistency, within three large samples. However, although significant, the three month test-retest correlations were low. As such, it is recommended that additional research is required to further investigate the temporal stability of the Spirituality Questionnaire scores with samples from other age groups.

The Spirituality Questionnaire has also been found to have high levels of construct validity, as assessed by correlations with purpose in life, intrinsic religiousness, and numerous measures of subjective well-being. The construct validity of the SQ was further supported by the observation that the Spirituality Questionnaire scores were not found to be significantly correlated with Extrinsic Religiousness. However, further research is needed to investigate the construct validity of the Spirituality Questionnaire by correlating this new measure with other reliable and valid indicators of spirituality. Subsequent efforts are also required to further establish the divergent validity of the Spirituality Questionnaire.

As well, additional research is required to further establish the discriminant validity of the Spirituality Questionnaire. Specifically, the degree to which the Spirituality Questionnaire is useful for discriminating between those individuals who are very high in spirituality from those who are very low in spirituality, needs to be investigated in future studies.

Further investigation is also required to determine the degree to which the items on the Spirituality Questionnaire are useful for measuring spirituality among specific religious groups. Subsequent studies, which involve the use of focused discussion groups involving individuals with various religious affiliations, are planned to address this issue.

Another potential limitation of the spirituality questionnaire is the limited breadth of the items designed to measure the four dimensions of spirituality. In particular, certain researchers (Morgan, 1999) have proposed that as spirituality involves transcendence, spirituality may also be measured in terms of creative and artistic endeavors. This potential limitation will be addressed in future research by developing new items to assess creativity and transcendence. Item and reliability analyses can then be conducted to determine the degree to which these items relate to the other items and scales of the Spirituality Questionnaire.

Additional Issues

One of the rationales for constructing a new measure of spirituality, was the notion that there are many individuals who may not express their spirituality through standard religious activities, such as church attendance, but for whom spirituality and spiritual growth may still be very important. Findings from the present study support this supposition. Although 85.6 % of the participants in the first study affirmed a belief in God or a higher power, 43.2 % of the participants reported that they had no religious affiliation. These findings also held for the second study where the percentages were even higher than in the first study, and were further supported in the third study. Thus, the

findings of the present study confirm the importance of including a broad range of beliefs and behaviors in measures, which are designed to assess spirituality.

As was previously discussed, the mean Spirituality Questionnaire scores for the participants who were affiliated with a particular religion were significantly higher than those participants who reported no particular religious affiliation. However, as it is possible that an individual may be not be affiliated with any particular religion, and still have high spirituality, a second criterion, that is, whether or not each participant indicated that he or she had a well defined set of spiritual beliefs or philosophy of life, was utilized to differentiate individuals measuring high or low in spirituality. Four distinct categories were formed on the basis of whether or not the participant had a clear set of beliefs, and whether or not the participant was affiliated with a particular religion.

By comparing the spirituality scores from these four categories it was found that individuals who either had a specific religious affiliation, or a clearly defined set of beliefs had higher measures of spirituality than those individuals who had neither a specific religious affiliation, nor a clearly defined set of beliefs. These findings may be interpreted as additional support for the supposition that there may be many individuals who may not express their spirituality through standard religious activities, such as church attendance, but for whom spirituality and spiritual growth may still be very important.

As was previously discussed, the mean Spirituality Questionnaire scores for the participants who were affiliated with a particular religion were significantly higher than those participants who reported no particular religious affiliation. However, as it is possible that an individual may be not be affiliated with any particular religion, and still have high spirituality, a second criterion, that is, whether or not each participant indicated that he or she had a well defined set of spiritual beliefs or philosophy of life, was utilized to differentiate individuals measuring high or low in spirituality. Four distinct categories were formed on the basis of whether or not the participant had a clear set of beliefs, and whether or not the participant was affiliated with a particular religion. A comparison of the mean SQ scale and full scale scores across the four groups indicated that the fact that an individual does not have a specific religious affiliation does not necessarily imply that he or she has no specific clearly defined spiritual beliefs or philosophy of life. These findings were interpreted as further support for the supposition that there may be many individuals who may not express their spirituality through standard religious activities, such as church attendance, but for whom spirituality and spiritual growth may still be very important.

Further, 94 % of the participants in the initial sample, as well as 92.6 % of participants in the second sample believed that humans have a soul or spiritual component. These high endorsements, coupled with the high correlations between measures of spirituality and measures of subjective well-being, support the importance of including spirituality as an important component in the assessment and promotion of health and well-being.

Summary and Conclusion

The Spirituality Questionnaire was designed utilizing the rational-empirical approach to test construction. The rationale for developing this new measure was that a questionnaire using a broad range of beliefs and behaviors was needed to assess the multidimensional components of spirituality which have been supported by empirical findings. The resulting 40 item Spirituality Questionnaire is comprised of four scales which assess the Ritualistic, Experiential, Ideological, and Functional aspects of spirituality. This new measure has excellent internal consistency and construct validity. Both the item analysis and the highly significant positive correlations, which were found between the four scales of the SQ supported the original multidimensional conceptualization of spirituality. Additional research is required to further establish the discriminant validity of the Spirituality Questionnaire, and to investigate the degree to which this measure can be generalized to the population at large for use with various religious groups. Further, spirituality, as measured by the Spirituality Questionnaire, demonstrated high positive correlations with measures of subjective well-being and quality of life. Thus, the results of the present study support the importance of including spirituality as an important variable in the assessment and promotion of health and well-being.

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Appendix A

Participant's Religious Affiliation for the Initial Sample and the two Cross-Validation Samples

Religious Affiliation	STUDY 1		STUDY 2		STUDY 3	
	Frequency	Percent	Frequency	Percent	Frequency	Percent
None	96	43.2	100	47.6	95	39.4
Roman Catholic	56	25.2	57	27.1	66	27.4
Protestant	8	3.6	4	1.9	6	2.5
Anglican	8	3.6	5	2.4	9	3.7
Christian	19	8.6	15	7.1	20	8.3
Reformed Christian	0	0.0	0	0.0	1	0.4
Pentecostal	0	0.0	0	0.0	4	1.6
Lutheran	0	0.0	0	0.0	2	0.8
United	5	2.3	3	1.4	7	2.9
Judaism	7	3.2	4	1.9	6	2.5
Buddhism	1	0.5	0	0.0	1	0.4
Hindu	7	3.2	4	1.9	3	1.2
Muslim	3	1.4	3	1.4	2	0.8
Baptist	2	0.9	2	1.0	3	1.2
Presbyterian	2	0.9	3	1.4	2	0.8
Sikhism	3	1.4	1	0.5	1	0.4
Mennonite	1	0.5	1	0.5	0	0.0
Islamic	1	0.5	1	0.5	0	0.0
Orthodox	2	0.9	1	0.5	2	0.8
Macedonian	0	0.0	1	0.5	2	0.8
Bahai Faith	0	0.0	2	1.0	0	0.0
Mormon	0	0.0	1	0.5	1	0.4
Jehovah's Witness	0	0.0	0	0.0	1	0.4
Secular/Free Thinker	0	0.0	0	0.0	2	0.8
Pagan	0	0.0	0	0.0	2	0.8
Wiccan	0	0.0	0	0.0	1	0.4
Agnostic	0	0.0	0	0.0	2	0.8
Atheist	1	0.5	1	0.5	0	0.0

Appendix B

DEMOGRAPHIC INFORMATION

Please answer the following questions

1. Sex:
 1. Male _____
 2. Female _____
2. Age: _____
3. Marital Status:
 1. Single _____
 2. Married _____
 3. Common law _____
 4. Separated _____
 5. Divorced _____
 6. Widowed _____
4. Number of Children _____
- 5a. Last grade completed in public and/or high school _____
- b. Have you completed:

some university/ college	_____
community college diploma	_____
undergraduate university degree	_____
graduate university degree	_____
6. Current Occupation: _____
7. Religious Affiliation (if any): _____

Appendix C

INFORMED CONSENT FORM

Dear Participant,

Thank you for considering participation in our study. The purpose of this study is to further investigate the relationship between personality characteristics, spirituality, and quality of life. Your participation in this study will involve completing a number of questionnaires, designed to measure personality traits, perceived quality of life and purpose in life, and spirituality. The completion of these questionnaires will require approximately one hour of your time. Prior to completing the questionnaires you will receive one research credit.

All of the information that you provide on the questionnaires will be kept entirely confidential. Further, the collected information will be used solely for research purposes. Your responses will be kept completely anonymous. Please do not print your name anywhere on the questionnaire.

Your participation in this study is entirely voluntary. If you find that you do not wish to provide any portion of the information requested, please feel free not to answer any question. Please be advised that you may decide to withdraw from participation in this study at any time, for any reason, without any penalty whatsoever (ie. without the loss of promised research credits). There are no known physical or psychological risks associated with participation in this study. You will be provided with written feedback at the end of the study and will be given the opportunity to ask questions regarding this study. If you decide to participate in this study, please sign and date the consent at the bottom of this sheet.

Laura Fazakas-DeHoog (MA student; Department of Psychology)
 Dr. David R. Evans (Professor; Department of Psychology)

I, _____, have read and understand the above
 information and agree to participate in the study described above.

Signature _____ Date _____

Feedback and Information Sheet

Your participation in our research is greatly appreciated. The purpose of this study is to develop a multidimensional spirituality questionnaire, and to test a hypothetical model relating spirituality and quality of life. Based on the results of previous research, it is expected that high measures spirituality will be associated with high measures of quality of life. Also, it is expected that spirituality and quality of life will be related in a direct and reciprocal manner.

Quality of life involves concepts such as an individual's sense of well-being, happiness and satisfaction with life in general. Furthermore, quality of life has been associated with measures of good health. Programs to improve the quality of life in the general population have been recommended as an important aspect of health promotion (Evans, 1994).

However, in order to design effective programs to enhance quality of life, it is necessary to first understand the factors and cognitive appraisals which are associated with quality of life and good health. Understanding these appraisals would allow researchers to develop intervention programs to teach individuals how to think in healthier more positive ways. Your participation in this study has brought us one step closer to realizing this goal.

Thank you again for your time and cooperation. If you have any further questions, please contact either Laura Fazakas-DeHoog (MA-Clinical Psychology student) or Dr. David Evans, (Professor of Psychology; room SSC 7404, 661-2067).

If you would like to read more information about these and related topics, you will find the following articles on campus in the D.B. Weldon library.

Evans, D.R. (1994). Enhancing quality of life in the population at large. Social Indicators Research, 33, 47-88.

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SIGN-UP POSTER**PERSONALITY, SPIRITUALITY,
AND QUALITY OF LIFE**

This study involves answering various questionnaires about personality characteristics, spirituality, cognitive appraisals of student life events and quality of life. Participants will be asked to return for a second hour, approximately three months after completing the first group of questionnaires. The completion of these questionnaires will require approximately one hour of your time, at two different phases of the study for a total of two hours participation time. You will earn a total of two research credits, that is, one credit for participating in each of the two phases of the study.

(University of Western Ontario, Department of Psychology experiment sign-up sheet)

The Spirituality Questionnaire

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Instructions

This questionnaire includes a series of statements. Read each statement and answer each one TRUE or FALSE. If a statement is descriptive of you, or if you agree with it, answer TRUE. If a statement is not descriptive of you, or if you do not agree with it, answer FALSE.

Mark your answers on the separate Answer Sheet provided. Simply shade in the (T) box if you feel that the item is TRUE. Shade in the (F) box, if you feel that the answer is FALSE. It is important to make sure that the statement number agrees with the number of your response on the Answer Sheet.

Answer each item so that your answer reflects your situation (that is, your feelings, activities and views) at the present time. If an item does not apply to you, put a horizontal line through both the T and F responses for that item (e.g., 118.-T-F-) and go on to the next question.

Please remember to answer all of the questions that apply to you. There are 50 items

1. I believe in God or a higher power.
2. I strive to act with honesty, integrity, and charity in my everyday life, based on my belief in God or a higher power.
3. I have had a profound spiritual experience during a difficult time.
4. I have had experiences in which I have a deep sense of peace and spiritual well-being.
5. My spiritual beliefs or philosophy of life do not add any meaning to my life.
6. I don't believe in sin.
7. I regularly attend ceremonies or rituals associated with my spiritual beliefs or philosophy of life.

8. I rarely pray or meditate because such activities are rarely effective.
9. My spiritual beliefs help me to cope with negative circumstances or difficulties.
10. I believe that it is possible to know God or a higher power in a personal way.
11. When I attend a marriage or funeral service, the spiritual component is important to me.
12. I actively seek involvement in activities which enhance my spiritual well-being.
13. I rarely spend time reading or studying writings or doctrines associated with my spiritual beliefs.
14. I rarely pray for the dead.
15. As a result of my spiritual beliefs or philosophy of life, I can easily find meaning and wonder in my life and everyday activities.
16. I consider myself to be a spiritual person.
17. I believe that all humans have a soul.
18. My spiritual beliefs or philosophy of life give me a sense of hope.
19. I believe that all humans are merely biological organisms, with no soul or spirit.
20. I rarely make time for meditation, introspection or prayer.
21. My spiritual beliefs or philosophy of life have an impact on my major life decisions.
22. I believe that it is possible to sense the presence of God or a higher power in my everyday activities.
23. I rarely worship or give thanks to God or a higher power.
24. I rarely spend time thinking about God or a higher power.
25. I have occasionally had "peak" or "unreal" experiences, during which I have perceived beauty, purpose and unity in all that exists.

26. I have prayed or sought divine guidance at least once in the last six months.
27. I have had at least one spiritual experience which has had a profound and positive effect on my life.
28. My relationship with God or a higher power is an important part of my life.
29. Spiritual growth is not an important aspect of my daily activities.
30. I enjoy discussions about my spiritual beliefs or philosophy of life.
31. The misery and suffering in the world is proof that God or a higher power does not exist.
32. I rarely ask for guidance from God or a higher power.
33. My spiritual beliefs or philosophy of life have developed over time.
34. My goals and decisions are influenced by my spiritual beliefs or philosophy of life.
35. I have a close relationship with God or a higher power.
36. I can always find meaning and purpose in my life as a result of my spiritual beliefs or philosophy of life.
37. I rarely experience the presence of God or a higher power.
38. I experience fellowship, and a sense of belonging as a result of my spiritual beliefs or philosophy of life.
39. I do not have a clear sense of the meaning and direction in my life.
40. An essential part of all human beings is immortal.
41. I believe that my life is richer and more fulfilling as a result of my spiritual beliefs or philosophy of life.
42. I rarely discuss my spiritual beliefs or philosophy of life.
43. I rarely experience a closeness with god or a higher power during spiritual rituals and ceremonies.

44. Most people would consider me to be a spiritual person.
45. I do not have a clearly defined set of spiritual beliefs or philosophy of life.
46. I rarely participate in activities associated with my spiritual beliefs or philosophy of life.
47. I rarely experience guidance from God or a higher power.
48. My spiritual beliefs provide me with a sense of comfort during times of great duress.
49. I have experienced episodes of profound spiritual illumination.
50. My spiritual beliefs or philosophy of life help me to understand pain and adversary.