

Effects of Spiritual Well-Being on Subsequent Happiness, Psychological Well-Being, and Stress

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Abstract Recently, Gomez and Fisher (Gomez R and Fisher JW (2003) *Pers Individ Dif* 35: 1975–1991) proposed that four facets of spiritual well-being exist, namely, personal, communal, environmental, and transcendental spiritual well-being. Based on data from three independent studies, the present research effort tested the validity of a German version of (Gomez R and Fisher JW (2003) *Pers Individ Dif* 35: 1975–1991) of the Spiritual Well-Being Questionnaire (SWBQ-G). It was found that the SWBQ-G was factorially valid and that each of the four SWBQ-G scales was discriminant to mental, physical, and emotional well-being. Also, it was found that the SWBQ-G predicted levels of subsequent happiness, psychological well-being (positive relationship), and stress (negative relationship). These results add to our knowledge about the validity of the construct of spiritual well-being.

Keywords Spiritual well-being · SWBQ · Validity

Well-being is a highly complex construct related to human nature. Thus, people perceive multiple facets or sub-dimensions of well-being. Recently, it has been proposed that spiritual well-being is an important addition to other facets of well-being, such as mental, physical and emotional well-being (Gomez and Fisher 2003). Many people have some form of spirituality: In 2005, 25% of the US populations said they would describe themselves as “spiritual, but not religious”, while 9% indicated the opposite, and 55% said they would be both spiritual and religious (Schultz 2005). These results are in line with the notion that spirituality can be explicit in the form of a certain religion, or more implicit, in the form of an inner attitude towards God, the divine, higher reasons or principles. Thus, spirituality as an inner attitude is different from religiosity, which relies on an outer institution and/or practices. Interestingly, the inclusion of spiritual well-being, along with mental, physical, and emotional well-being, is also in line with ancient philosophies of, for example, native American tribes (Rutherford 2008). Also, it has been demonstrated that

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spiritual well-being is important for our understanding of happiness, over and above established constructs such as personality factors (Gomez and Fisher 2003). Thus, it is important to include spirituality into current conceptualizations of well-being (Sawatzky et al. 2005).

Earlier conceptualizations of spiritual well-being focused on a limited set of domains of spiritual well-being. For example, Paloutzian and Ellison's (1982) spiritual well-being questionnaire has scales for the assessment of existential and religious well-being. Considerable research demonstrated adequate levels of reliability and validity of this instrument (Bufford et al. 1991; Ellison 1983). For example, spiritual well-being correlates positively with self-esteem, intrinsic religious commitment and negatively with loneliness (Ellison and Smith 1991; Paloutzian and Ellison 1982). However, other domains of spiritual well-being, such as communal spiritual well-being (discussed later), are not included in this questionnaire. Also, several limitations characterize typical research studies implementing Paloutzian and Ellison's (1982) spiritual well-being questionnaire, such as cross-sectional designs.

Consequently, in order to deepen our understanding of the effects of spiritual well-being, the present study aimed at providing further insights into the predictive validity of spiritual well-being. More specifically, implementing a longitudinal research design, the effects of spiritual well-being on happiness, psychological well-being, and stress were tested. The present study relied on a specific instrument for a comprehensive (i.e., four subscales) assessment of spiritual well-being (i.e., the Spiritual Well-Being Questionnaire, Gomez and Fisher 2003). In order to extend our knowledge about the instrument's psychometric properties, the German version of this instrument is also tested with regard to its construct (i.e., factorial and discriminant) validity and reliability.

Gomez and Fisher's (2003) Theory of Spiritual Well-Being

One of the most recent and comprehensive conceptualizations of spiritual well-being has been proposed by Gomez and Fisher (2003). As a result from their extensive review of the literature, these authors distinguish four aspects of spiritual well-being, namely personal, communal, environmental, and transcendental spiritual well-being. The personal dimension refers to how one intra-relates with oneself with regard to meaning, purpose, and values in life. In contrast, the communal dimension refers to the quality of interpersonal relationships (e.g., friendship, love, faith in humanity). Next, the environmental dimension deals with care and nurture for the physical and biological world (including a sense of awe and unity with the environment). Finally, the transcendental dimension refers to the relationship of the self with some being (or something) beyond the human level, such as (a) God, or a transcendent reality (Gomez and Fisher 2003). This fourfold definition of spiritual well-being is in line with the National Interfaith Coalition on Aging (1975) and goes beyond prior conceptualizations of spiritual well-being (Ellison 1983; e.g., Paloutzian and Ellison 1982).

In their first empirical work, they developed a 20-item Spiritual well-being questionnaire (SWBQ) in order to assess the four facets of spiritual well-being. In addition, Gomez and Fisher (2003) conducted four empirical studies for the first test of the SWBQ's psychometric properties. These studies yielded adequate factorial validity and reliability (i.e., internal consistency, composite reliability, variance extracted). It should be noted that these studies found support for (a) four first-order factors of spiritual well-being (i.e., personal, communal, environmental, and transcendental spiritual well-being), as well as a second-order factor (labelled "spiritual well-being"). As for convergent validity, it was

found that the SWBQ correlated strongly with a similar measure of spiritual well-being (i.e., SWBS, Ellison and Fan 2008), and with happiness. With regard to discriminant validity, it was reported that the four SWBQ factors were factorially independent of measures for personality (i.e., extraversion, neuroticism, and psychoticism). Finally, as for criterion-oriented validity, Gomez and Fisher (2003) reported that each of the four SWBQ scales explained unique and incremental variance in happiness, over and above personality factors.

In an additional paper, Gomez and Fisher (2005b) conducted empirical work, based on data from 3,101 females and 1,361 males. Multigroup Confirmatory factor analyses supported the invariance of the measurement model of the SWBQ. Also, it was found the SWBQ was invariant to gender. However, women scored somewhat higher on the communal sub dimension. Finally, Gomez and Fisher (2005a) utilized data from $N = 4,462$ participants from mainly secondary schools and universities to evaluate the SWBQ from an item response theory (IRT) perspective. Overall, there was general support for the psychometric properties of the SWBQ from an IRT perspective.

Study Goals and Hypotheses

In combination, these three empirical works published by Gomez and Fisher demonstrate evidence for several important aspects of psychometric properties (e.g., factorial validity, criterion validity, reliability). However, several important issues still remain. Most importantly, the questions of discriminant and predictive validity needs to be answered and were thus the purpose of the present study.

Discriminant Validity

It should be noted that while Gomez and Fisher (2003) demonstrated that the SWBQ was discriminant to various facets of personality, this represents only a preliminary test of discriminant validity. Other facets of well-being have been reported in the literature. Because spiritual well-being represents a relatively new construct derived from theory, it should exhibit discriminant validity to hitherto well-established constructs. However, Gomez and Fisher, while introducing their theory of spiritual well-being, did not contrast the SWBQ scales with any of other possible facets of well-being found in the literature. In order to close this gap, the present work aimed at distinguishing spiritual well-being from three other constructs in the domain of well-being, namely, mental, physical, and emotional well-being. First, with regard to mental well-being, a “sane mind”, i.e., having clear thoughts and the ability to decide, is most often among the definitions of well-being (Wallace and Shapiro 2006; Warr 1990). Second, one of the facets of well-being that has gained considerable attention from the research community was physical well-being. Clearly, one’s ability to use the body and enjoy physical aspects of life is one key aspect of well-being for many people (Biddle and Mutrie 2008). Third, experiencing positive emotions is important among the facets of well-being (Eid and Larsen 2008; Fredrickson and Joiner 2002). For example, friends and family members are often a source of positive emotions (Larson 1996). To conclude, there is now an extensive literature that underlines the importance of mental, physical, and emotional well-being. Also, from a theoretical point of view, the spiritual well-being scales (Gomez and Fisher 2003) were conceptualized to be distinct from mental, physical, and emotional well-being. However, no empirical research existed prior to our study to support this notion. Thus, the goal of Study 1 of the

present paper was to explore the discriminant validity of the SWBQ. More specifically, the following hypothesis was tested:

H1: Spiritual well-being is discriminant from mental (H1a), physical (H1b), and emotional (H1c) well-being.

It should be noted that because the present empirical studies were conducted in Germany, the SWBQ was translated into the German language. Before any of the present studies' hypotheses could be tested, the factorial validity and reliability of the newly translated German version of the SWBQ was tested in Study 1.

Criterion Validity

As was noted earlier, first evidence about the criterion validity of the SWBQ scales had been reported by Gomez and Fisher (2003). Although the relationship between the SWBQ scales and happiness is an important result, several limitations should be mentioned. First, Gomez and Fisher relied on data probably biased by same-source/same-method bias; both the SWBQ and the data for happiness were assessed at the same time, with the same method, and by the same subjects. Thus, the relationship between SWBQ scales and happiness cannot be interpreted in a causal way. In order to overcome this limitation, the present studies utilized a longitudinal research design where subjects filled out the SWBQ at T1, and criteria for spiritual well-being such as happiness at T2. Several criteria were utilized in two independent studies. Second limitation by Gomez and Fisher's (2003) study was that each of the four SWBQ scales was tested separately with regard to its criterion validity. Thus, we can have little confidence in the overall criterion validity of the SWBQ; a more rigorous approach would be the testing of the impact of the SWBQ on happiness simultaneously (e.g., by regression analyses). Only by this approach, redundant effects of any of the SWBQ scales could be detected. As a consequence, the present study tested the criterion validity of the SWBQ simultaneously.

The first criterion of spiritual well-being was happiness. According to the Cambridge University Press (2008), happiness is defined as “[...] a state of mind or feeling such as contentment, satisfaction, pleasure, or joy.” As a social scientific construct, happiness is an important indicator of well-being (Hills and Argyle 2002) and also, potentially, spiritual well-being (cf. Cohen et al. 2002). Consequently, and as a replication to Gomez and Fisher's (2003) study, it was hypothesized that spiritual well-being would be positively related to happiness:

H2: Spiritual well-being is related to subsequent happiness.

Another criterion of spiritual well-being utilized in the present study was psychological well-being. The overarching construct of psychological well-being includes various important constructs such as depression, anxiety, distress, morale, and life satisfaction (Smith et al. 2003). A meta-analysis found significant relationships between the individual behaviour of spiritual devotion, a construct which may be closely related to spiritual well-being, and mental health (Hackney and Sanders 2003). Also, a study found daily spiritual experiences (e.g., being touched by the beauty of creation) to be related to psychological well-being (Ellison and Fan 2008). Thus, the following hypothesis was postulated:

H3: Spiritual well-being is related to subsequent psychological well-being.

There is now a considerable debate about the potential impact of spirituality on stress (e.g., Boswell et al. 2006). Some authors postulate that spirituality can be viewed as a

resource against stress. More specifically, it has been postulated that spiritual activities such as prayer, confession, and seeking support from a higher source can help individuals to manage stress. Also, it has been found that religiosity, a construct that should be related to spiritual well-being, was negatively related with stress (Dulin 2005). Thus, it was hypothesized that spiritual well-being would be negatively related to subsequent levels of stress.

H4: Spiritual well-being is negatively related to subsequent stress.

Study 1

The first goal of Study 1 was to provide evidence for adequate factorial validity of the newly translated SWBQ-G. Confirmatory factor analyses were utilized to explore factorial validity. More specifically, it was first tested whether the 4-factor model of spiritual well-being described by Gomez and Fisher (2003) could be replicated with the newly translated SWBQ-G. Thereafter, it was tested whether the four dimensions of the SWBQ-G (i.e., personal, communal, environmental, and transcendental spiritual well-being) could be discriminated.

The second question was whether the scales for the assessment of spiritual well-being would be discriminant to scales for the assessment of other facets of well-being. Gomez and Fisher (2003) proposed that spiritual well-being would be a unique construct, independent from other facets of well-being. Important facets of well-being have been discussed extensively in the well-being literature, such as (a) mental, (b) physical, and (c) emotional well-being. Each of these constructs refers to different domains of well-being. Thus, in accordance with Gomez and Fisher (2003), discriminant validity of these various facets of well-being was expected. More specifically, it was expected that four dimensions of spiritual well-being as well as mental, physical, and emotional well-being could be distinguished in the data. Confirmatory factor analysis was utilized to demonstrate factorial validity and discriminant validity.

Methods

Sample and Procedure

A convenience sample, contacted by research assistants, of $N = 207$ participants was drawn for the purpose of this study. These participants responded to various instruments in their free time and voluntarily. Full anonymity was assured. The mean age of the participants was 45.68 years ($SD = 10.56$); 69.9% were female, and 30.4% were male.

Mental Life Quality

This construct was assessed with six newly designed items (sample item: “I was confused”, reverse coded). Cronbach’s Alpha was good (i.e., $\alpha = .84$).

Physical Life Quality

Seven items were newly designed in order to assess the construct of physical life quality (sample item: “Pleasant sensation of the body”, $\alpha = .90$).

Emotional Life Quality

Four items were newly designed in order to assess the construct of physical life quality (sample item: “Experiencing positive emotions (e.g., joy, admiration, enthusiasm)”, $\alpha = .84$).

Translation of SWBQ

Following established guidelines for test translation and adaptation (e.g., Hambleton 2001; cf. www.intestcom.org), the Spiritual Well-Being Questionnaire (SWBQ, Gomez and Fisher, 2003) was carefully translated from English to German by a professional and then backtranslated by an English native speaker, both experts in the field of psychology. Virtually no differences were discerned between the two English versions of the SWBQ; thus, the German version (SWBQ-G) was deemed appropriate for the purposes of this study.

All of the items regarding life quality were answered on a 5-point scale (i.e., from 1 = “completely disagree” to 5 = “completely agree”).

Results and Discussion

Factorial Validity and Reliability

Data from Study 1 were utilized to test the factorial validity of the SWBQ-G (i.e., confirmatory factor analyses (CFA) with covariance matrix as input). In the first step of the analysis, it was tested whether the four dimensions of spiritual well-being (Gomez and Fisher 2003) could be distinguished. More specifically, it was tested whether the 4-factor model (target model) fitted the data significantly better than either a baseline (i.e., 0-factor) or a single-factor model. Results of these analyses were summarized in Table 1. It should

Table 1 Results of the confirmatory factor analyses: factorial validity of spiritual well-being scales

Model	Confirmatory factor analyses							
	df	χ^2	χ^2/df	GFI	AGFI	SRMR	$\Delta\chi^2$	Δdf
0-factor	20	5140.57	257.05	0.31	0.24	.31	4952.00**	26
1-factor	39	637.30	16.34	0.91	0.90	.11	448.73**	7
3-factor a	45	635.96	14.13	0.92	0.89	.11	447.39**	1
3-factor b	45	852.30	18.94	0.89	0.85	.13	663.73**	1
3-factor c	45	813.27	18.07	0.89	0.86	.12	624.70**	1
3-factor d	45	820.77	18.24	0.89	0.86	.12	632.20**	1
3-factor e	45	771.07	17.13	0.90	0.87	.12	582.50**	1
3-factor f	45	786.49	17.48	0.89	0.87	.12	597.92**	1
4-factor	46	188.57	4.12	0.98	0.97	.06		
4-factor with 2nd order factor	44	196.46	4.47	0.97	0.97	.06	7.89*	2

0-factor model: baseline model (i.e., no factors); 1-factor model: all indicators load on one factor (labelled “well-being”); While the 4-factor model represents the target model with adequate factorial validity, the various 3-factor models represent potential alternative models with lack of factorial validity; $\Delta\chi^2$ was computed by subtracting the χ^2 of the 4-factor model from the χ^2 of the respective model

*** $P < .001$

be noted that the 4-factor model fitted the data well, i.e., both GFI and AGFI > .90, SRMR ≤ .08. Also, the χ^2 -difference test indicated that the 4-factor model fitted the data significantly better than both the 0- and the 1-factor models.

Next, an effort was made to demonstrate additional support for factorial validity. More specifically, it was tested whether the 4-factor model of spiritual well-being fitted the data significantly better than any possible 3-factor model. The purpose of this strategy was to gain additional support for construct validity of the four spiritual well-being scales. Each of the six possible 3-factor models (i.e., model 3 a-f) were designed so that within one model, a relationship between two of the four SWBQ dimensions was set to unity; for example, in the “3-factor model a”, the relationship between personal and communal spiritual well-being was set to 1. If any of the 3-factor models would yield a better fit to the data than the 4-factor model, this would be evidence for inadequate factorial validity. However, as can be seen from Table 1, the 4-factor model revealed a closer fit to the data than any of the 3-factor models. Finally, it was tested whether the second-order model fitted the data better than the four-factor model. The rationale for this approach was that Gomez and Fisher (2003) argued for this second-order model, and the results of their various CFAs were in favour of such a higher order model. As can be seen from Table 1, the χ^2 -difference test was in support for the single-order factor model. In sum, this first step in CFA provided evidence for the factorial validity of the four single-order spiritual well-being scales of the SWBQ-G.

In a second step of the CFA analyses, it was tested whether the four dimensions of spiritual well-being would be discriminant to other facets of well-being. That is, while theory hypothesized that four factors (or subscales) of spiritual well-being can be distinguished, it would be also important to demonstrate that these four subscales are independent (i.e., discriminant) to other, hitherto well-established constructs. More specifically, it was tested whether the four dimensions of spiritual well-being were discriminant to (a) mental, (b) physical, and (c) emotional well-being. First, the measurement model was tested. As can be seen in Table 2, the seven proposed factors (i.e., four spiritual dimensions, physical, mental, and emotional well-being) fitted the data well. Next, it was tested whether any of the spiritual well-being factors would be completely convergent to any of the other well-being scales: In the twelve models that resulted from this approach (i.e., model 6a–l), one respective correlation between two of the seven well-being scales was set to unity; for example, in the model “6-factors a”, the correlation between personal spiritual well-being and physical well-being was set to 1. The rationale for this approach was that in the case where any of the twelve possible 6-factor models would yield a better fit to the data, this would imply inadequate construct (i.e., absence of discriminant) validity. However, as can be seen from Table 2, the original 7-factor model fitted the data better than any of these models. This result is interpreted as evidence for discriminant validity of the various factors of well-being.

Finally, with regard to reliability, the internal consistency estimate (i.e., Cronbach’s Alpha) was computed for the various constructs. The results were displayed in Table 3. It is apparent that the respective Alphas were good ($.80 < \alpha < .94$). Table 2 also summarizes descriptive statistics and scale intercorrelations. Overall, the scale intercorrelations revealed only small to medium effects sizes. Thus, in combination with the results from the various confirmatory factor analyses, it could be concluded that the four SWBQ-G subscales were discriminant. Also, spiritual well-being was independent from other, hitherto well-established facets of well-being such as mental, physical, and emotional well-being. In combination, these results support Hypothesis 1 (i.e., the construct validity of spiritual well-being).

Table 2 Confirmatory factor analyses: discriminant validity of spiritual, mental, physical, and emotional well-being scales

Model	Confirmatory factor analyses							
	<i>df</i>	χ^2	χ^2/df	GFI	AGFI	SRMR	$\Delta\chi^2$	Δdf
0-factor	37	9021.90	243.84	0.28	0.24	.22	8162.55**	58
1-factor	74	2132.61	28.82	0.83	0.81	.11	1273.26**	21
6-factor a	94	2154.19	22.92	0.83	0.80	.11	1294.84**	1
6-factor b	94	1595.57	16.97	0.87	0.85	.10	736.22**	1
6-factor c	94	2114.93	22.50	0.83	0.81	.11	1255.58**	1
6-factor d	94	1672.15	17.79	0.87	0.85	.10	812.80**	1
6-factor e	94	2280.64	24.26	0.82	0.79	.10	1421.29**	1
6-factor f	94	1948.33	20.73	0.85	0.82	.10	1088.98**	1
6-factor g	94	1684.83	17.92	0.87	0.85	.10	825.48**	1
6-factor h	94	1667.06	17.74	0.87	0.85	.10	807.71**	1
6-factor i	94	2114.94	22.50	0.83	0.81	.11	1255.59**	1
6-factor j	94	1706.89	18.16	0.86	0.84	.10	847.54**	1
6-factor k	94	2211.62	23.53	0.82	0.80	.11	1352.27**	1
6-factor l	94	1699.76	18.08	0.87	0.84	.10	840.41**	1
7-factor	95	859.35	9.05	0.93	0.92	.07		

0-factor model: baseline model (i.e., no factors); 1-factor model: all indicators load on one factor (labelled “well-being”); the 7-factor model represents a model where four facets of spiritual well-being as well as mental, physical, and emotional well-being were represented by a factor, respectively. In contrast, in the twelve possible alternative 6-factor models, one of respective correlation between two of the seven well-being scales mentioned above was set to unity. While the 7-factor model represents adequate discriminant validity, the respective 6-factor models represent competing models with inadequate discriminant validity; $\Delta\chi^2$ was computed by subtracting the χ^2 of the 7-factor Model from the χ^2 of the respective model

** $P < .01$

Table 3 Descriptive statistics, intercorrelations and internal consistency estimates for variables (Study 1, $N = 207$)

Dimension of well-being	M	SD	α	1	2	3	4	5	6	7
1. Personal SWB	3.69	0.61	0.80	–						
2. Communal SWB	3.83	0.44	0.88	.44**	–					
3. Environmental SWB	3.56	0.66	0.91	.50**	.48**	–				
4. Transcendental SWB	3.02	1.09	0.94	.37**	.32**	.54**	–			
5. Mental WB	3.22	0.46	0.94	.37**	.24**	.31**	.20**	–		
6. Physical WB	3.43	0.49	0.94	.49**	.32**	.38**	.23**	.32**	–	
7. Emotional WB	3.24	0.39	0.94	.20**	.27**	.19**	.20**	.44**	.25**	–

WB well-being, SWB spiritual well-being

* $P < .05$, ** $P < .01$

Study 2

The second Study addressed the question of spiritual well-being’s criterion-oriented validity. More specifically, the predictive validity of the SWBQ with regard to happiness

(i.e., Hypothesis 2) and psychological well-being (i.e., Hypothesis 3) was explored. The impact of spiritual well-being (assessed at T1) on happiness and psychological well-being (both assessed at T2) was tested.

Methods

Sample and Procedure

At a large university in Germany, students were asked to participate in a study. Participation was voluntarily; full anonymity was assured. At T1, the participants filled out the SWBQ-G as well as demographic questions. Four weeks later, at T2, the SWBQ-G as well as the WHO-5 and the OHI were administered. The total sample size was $N = 49$. The mean age of the participants was 24.16 years ($SD = 9.49$); 73.5% were female, and 26.5% were male.

Questionnaires

For the assessment of spiritual well-being, the same items from the SWBQ-G were used as in Study 1. In addition, two validated questionnaires were utilized in Study 2. First, the German version (Lewis et al. 2002) of the Oxford Happiness Inventory (OHI; s. Hills and Argyle 2002) was used to assess happiness. Next, the SF-12 (Schofield and Mishra 1998) was utilized to assess psychological well-being. More specifically, a German validated version (Bullinger and Morfeld 2004; Maurischat et al. 2008) of the SF-12 was used. The SF-12 is a standard instrument for the assessment of psychological well-being and has been validated extensively in several countries and with several populations. For calculation of overall psychological well-being, all items from the SF-12 are summarized.

Results and Discussion

Correlational Analysis

Table 4 provides the reader with descriptive statistics, internal consistency estimates (i.e., Cronbach's Alphas), and scale intercorrelations. It should be noted that in accordance with the results of Study 1, Cronbach's Alphas were good. Also, the scale intercorrelations were relatively small, yielding further support for the relative independence of subscales of spiritual well-beings.

Table 4 Descriptive statistics, intercorrelations and internal consistency estimates for variables in Study 2 ($N = 49$)

Variables	M	SD	α	1	2	3	4	5	6
1. Personal SWB T1	3.60	0.63	0.83	–					
2. Communal SWB T1	3.89	0.39	0.82	.31*	–				
3. Environmental SWB T1	2.69	0.69	0.84	.43**	.26	–			
4. Transcendental SWB T1	1.98	1.14	0.91	.23	.27	.21	–		
5. Happiness T2	2.32	0.36	0.74	.38**	.13	.09	.00	–	
6. Psychological Well-Being T2	39.83	6.82	0.87	.47**	.41**	.13	.23	.51**	–

SWB Spiritual well-being

* $P < .05$, ** $P < .01$

Regression Analysis

Multiple simultaneous regression analysis was performed to test the impact of the SWBQ-G scales at T1 on happiness and psychological well-being at T2. The results of these analyses were summarized in Table 5. While personal and communal spiritual well-beings were related to subsequent happiness, environmental and transcendental spiritual well-beings were not. Thus, Hypotheses 2 was partially confirmed. Likewise, Hypotheses 3 was partially supported, as personal spiritual well-being was significantly related to subsequent psychological well-being. It should be noted that considerable amounts of variance were explained in happiness (31%) and in psychological well-being (17%) by the SWSQ-G scales, respectively.

Study 3

In Study 3, the impact of spiritual well-being (assessed at T1) on general well-being and stress (both assessed at T2) was tested (Hypothesis 3). Thereby, Study 3 aimed at further contributing to the criterion-oriented validity of the SWBQ.

Methods

Sample and Procedure

A research assistant recruited students who participated in a laboratory study in exchange for extra credits. Participation was voluntary; full anonymity was assured. At T1, the participants filled out the SWBQ-G as well as demographic questions. Four weeks later, at T2, a survey for the assessment of perceived chronic stress was administered. The total sample size was $N = 164$. The mean age of the participants was 29.41 years ($SD = 10.13$); 71.3% were female, and 28.7% were male.

Questionnaires

For the assessment of spiritual well-being, the same items from the SWBQ-G were used as in Studies 1 and 2. In addition, the German version (Brähler et al. 2008) of the WHO-5 (WHOQOLGroup 1998) was utilized to assess psychological well-being. The WHO-5 is a standard instrument for the assessment of psychological well-being and has been used

Table 5 Results of regression analyses for Study 2 (standardized betas)

	Dependent variables (T2)	
	Happiness	Psychological well-being
<i>SWBQ-G scales at T1</i>		
Personal	.42**	.40**
Communal	.28*	.04
Environmental	-.15	.01
Transcendental	.08	-.05
	$R^2 = .31$	$R^2 = .17$

$N = 49$; * $P < .05$, ** $P < .01$

extensively in several countries (e.g., Shea et al. 2003). The rationale to include an instrument for the assessment of psychological well-being again (s. Study 2) was to further explore the relationship between spiritual and psychological well-being and to cross-validate the results obtained from Study 2.

Finally, the Trier Inventory for perceived chronic stress (TICS; cf. Schlotz and Schulz 2006; Schulz and Schlotz 1999) was used to assess stress. This instrument consists of 38 Items, and the current empirical study revealed a good internal consistency (i.e., Cronbach's Alpha = .95).

Results and Discussion

Correlational Analysis

In Table 6, descriptive statistics, internal consistency estimates, as well as scale inter-correlations were summarized. The internal consistency estimates are noteworthy: In combination with the results obtained from Studies 1 (i.e., Table 3) and 2 (i.e., Table 4), the results from Study 3 strongly support the notion that internal consistency of the four SWBQ-G's subscales has adequate levels. Also, as for relative independence of the SWBQ-G's subscales, the results of Study 3 replicate those of Studies 1 and 2, respectively.

Regression Analysis

Regression analysis (s. Table 7) revealed that personal and transcendental spiritual well-beings were significantly related to subsequent psychological well-being ($R^2 = 13\%$), thus supporting Hypothesis 3 partially. As for stress, only personal spiritual well-being was related to levels of subsequent stress. Thus, Hypothesis 4 was only partially supported. Nevertheless, 10% of variance in stress at T2 was explained by personal spiritual well-being.

General Discussion

The present three-study effort supported the validity of a German version of the SWBQ. First, the SWBQ-G distinguishes between four factors of spiritual well-being, namely,

Table 6 Descriptive statistics, intercorrelations and internal consistency estimates for variables (Study 3, $N = 164$)

Dimension of well-being	M	SD	α	1	2	3	4	5	6
1. Personal SWB T1	3.35	0.68	0.77	–					
2. Communal SWB T1	3.79	0.54	0.70	.43**	–				
3. Environmental SWB T1	2.72	0.88	0.82	.45**	.31**	–			
4. Transcendental SWB T1	1.67	0.89	0.92	.23**	.11	.50**	–		
5. Psychological well-being T2	3.61	0.91	0.84	.31**	.16*	.16*	.24**	–	
6. Stress T2	2.40	0.55	0.95	–.31**	–.19*	–.10	–.06	–.70**	–

SWB Spiritual well-being

* $P < .05$; ** $P < .01$

Table 7 Results of regression analyses for Study 3 (standardized betas)

	Dependent variables (T2)	
	Psychological well-being	Stress
<i>SWBQ-G scales at T1</i>		
Personal	.28**	-.30**
Communal	.05	-.09
Environmental	-.09	.07
Transcendental	.21**	-.02
	$R^2 = .13$	$R^2 = .10$

$N = 164$; * $P < .05$, ** $P < .01$

personal, communal, environmental, and transcendent spiritual well-being. This result is in line with prior, multi-sample research (Gomez and Fisher 2003). However, a second-order factor of spiritual well-being could not be confirmed in the present analyses; this result is in contrast to those of Gomez and Fisher (2003). It was also demonstrated that the SWBQ-G was discriminant to other facets of well-being: The aspects of mental, physical, and emotional well-being are well-established in the literature. The present study was the first to demonstrate that spiritual well-being was empirically discriminant to mental, physical, and emotional well-being.

Second, the empirical results demonstrated evidence for the predictive validity of the SWBQ-G. Several facets of spiritual well-being, as assessed with the SWBQ-G, were predictive of indicators of well-being. The most consistent finding was that personal spiritual well-being was significantly related to all indicators utilized in the present work. That is, the personal SWBQ-G subscale predicted subsequent happiness, psychological well-being, and (lower levels of) stress. In other words, having a close connection to one's own internal values and having a sense of personal meaning to life are important for subsequent well-being (and the absence of stress). Interestingly, the communal SWBQ-G subscale was only related to happiness. Having good and healthy interpersonal relationships (based on friendship and/or love) is important for overall happiness, but not for psychological well-being or stress. The SWBQ-G subscale of environmental, spiritual well-being was not related to any indicator of well-being or stress. Thus, one could feel well without being closely connected to the environment and without feeling awe when looking at nature. Finally, transcendental spiritual well-being was relevant for subsequent psychological well-being. That is, feeling connected to God, a higher source or a transcendent being/thing fosters subsequent psychological well-being. This result is in line with studies that found support for the notion that a close relationship to God (or a higher source) positively related to health and well-being (e.g., Koenig, 1994; Maton, 1989; Sim and Loh, 2003).

Given the methodological rigour applied in the present three studies, it is impressive to see that 10–31% of variance in indicators of well-being was explained by prior levels of spiritual well-being. Apparently, spiritual well-being has a considerable impact on various indicators of well-being. Thus, for purposes of developing and fostering well-being of individuals, spiritual well-being appears to be an important point of departure.

As a limitation, this has been the first research effort which utilized the SWBQ-G. Thus, we conclude with directions for future research. First, the criterion validity of environmental spiritual well-being has yet to be established. A potential criterion of this SWBQ-G scale could be satisfaction with urban environment and planning. Also, the amount of

activities helping to protect the environment could be a potential valuable criterion of environmental spiritual well-being.

Next, it might be interesting to explore possible determinants of spiritual well-being. For example, as the Big Five personality factors (e.g., extraversion) have been found to be related to well-being in general (DeNeve and Cooper 1998), it might be important to explore potential effects of personality constructs on the SWBQ-G. In addition, the question about which day-to-day activities (e.g., religious activities, recreation, social network) foster each of the four factors of the SWBQ-G should be addressed in future research. Third, although the present studies were based on a longitudinal research design, stronger designs such as experiments would allow for even stronger causal inferences. Also, interventions designed to enhance facets of spiritual well-being should be evaluated utilizing the SQBQ-G. For example, what is the effect of counselling activities such as life review interview (s. Ando, Morita, Okamoto, and Ninosaka, 2008) or psychotherapy on the SWBQ-G? These questions would extend our knowledge about the construct of spiritual well-being.

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