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## ABSTRACT

This follow up study is in response to Miller, Fleming, and Brown-Anderson's (1998) study of ethnic differences between Caucasians and African-Americans where the authors suggested that the Spiritual Well-Being (SWB) Scale may need to be interpreted differently depending on ethnicity. In this study, confirmatory factor analyses were conducted for both samples of the previous study in order to compare competing models and to directly examine hierarchical structures. Models were developed based on earlier work by the scale's authors and earlier exploratory analyses of these samples. The three factor (Religious Well-Being, Life Satisfaction/Purpose, Future) model fit better than the two factor (Religious Well-Being, Existential Well-Being) model for the Caucasian sample. The five factor (Connection with God, Satisfaction with God and Day-to-Day Living, Future/Life Contentment, Personal Relationship with God, Meaningfulness) model fit better than the two factor model for the African-American sample. The implications of these findings for counselors and researchers are discussed. Recommendations on the use of the SWB with an African-American sample are made as well as future research recommendations. (Contains 16 references, 2 tables, and 4 figures.)  
(Author/GCP)

Running head: ETHNIC DIFFERENCES

Spiritual Well-Being Scale Ethnic Differences between Caucasians  
and African-Americans: Follow up Analyses

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## Abstract

This follow up study is in response to Miller, Fleming, & Brown-Anderson's (1998) study of ethnic differences between Caucasians and African-Americans where the authors suggested that the Spiritual Well-Being (SWB) Scale may need to be interpreted differently depending on ethnicity. In this study, confirmatory factor analyses were conducted for both samples of the previous study in order to compare competing models and to directly examine hierarchical structures. Models were developed based on earlier work by the scale's authors and earlier exploratory analyses of these samples. The three factor (Religious Well Being, Life Satisfaction/purpose, Future) model fit better than the two factor (Religious Well-Being, Existential Well-Bing) model for the Caucasian sample. The five factor (Connection with God, Satisfaction with God and Day-to-Day Living, Future/Life Contentment, Personal Relationship with God, Meaningfulness) model fit better than the two factor (Religious Well-Being, Existential Well-Being) model for the African-American sample. The implications of these findings for counselors and researchers are discussed. Recommendations on the use of the SWB with an African-American population are made as well as future research recommendations.

## Spiritual Well-Being Scale Ethnic Differences between Caucasians and African-Americans:

### Follow up Analyses

In an attempt to examine overall life satisfaction, Ellison (Bufford, Paloutzian, & Ellison, 1991; Ellison, 1983; Paloutzian & Ellison, 1982) developed the Spiritual Well-Being Scale (SWB) (Paloutzian & Ellison, 1982). The SWB is a self-report instrument of 20 items that involves three dimensions: an overall Spiritual Well-Being score (SWB, 20 items), a Religious Well-Being score (RWB, 10 items), and an Existential Well-Being score (EWB, 10 items). Subjects rate each item on a six point scale ranging from Strongly Agree to Strongly Disagree. Almost half of the items have reversed wording to prevent response bias.

In terms of reliability and validity, the SWB holds up well. The SWB has high test-retest (one week) reliability coefficients: .93 (SWB), .96 (RWB), .86 (EWB) (Paloutzian & Ellison, 1982). In addition, 4, 6, and 10 week interval test-retest reliability coefficients range from .73-.99 for the three scales (Bufford, et al., 1991). Bufford, et al. (1991) describe the scale as demonstrating "...positive self-concept, finding meaning and purpose in life, high assertiveness and low aggressiveness, good physical health, and good emotional adjustment (p. 57)." Using factor analysis, Ellison (1983) showed that SWB items loaded on two factors with the first factor including all of the RWB items and the second factor including many of the EWB items.

While extensive research has been done with the scale with regards to reliability and validity, no research had been done on the impact of Caucasian and African-American ethnicity (Miller et al., 1998). The purpose of an earlier study (Miller et al., 1998) was to examine this impact. In this previous study, the SWB was administered to 119 Caucasians and 97 African-Americans. Two separate exploratory factor analyses using principal components analysis with a

Varimax rotation similar to Ellison's work (1983) showed a difference between the two ethnic groups. The Caucasians showed three scale factors (religious well being, life satisfaction/purpose, future) closely paralleling the two factors labeled by Paloutzian and Ellison (1982). The factor analysis of the African-American responses resulted in five scale factors (connection with God, satisfaction with God and day-to-day living, future/life contentment, personalized relationship with God, meaningfulness) which were quite different from the factors labeled by Paloutzian and Ellison (1982); the items for the RWB Scale and the EWB Scale were dispersed throughout the five factors. The findings supported the contention that ethnicity shapes the responses to the SWB Scale. The authors recommended further factor analysis to explore the theoretical explanation of the SWB. In this follow up study, additional factor analyses were completed to clarify the findings with regard to ethnic differences.

### Method

#### Subjects

The sample was the original sample used in Miller et al.'s (1998) study. This sample was made up of 119 Caucasian and 97 African-American undergraduate and graduate university students in the Southwestern United States who had taken the SWB as a part of their classes. Mean age was 24.8 years (standard deviation of 8.11).

### Results

Exploratory factor analysis lacks a mechanism for directly testing the appropriateness of various models. Therefore, in this follow-up, we used confirmatory factor analysis to compare whether the original factor structure as proposed by the scale's authors (Paloutzian & Ellison, 1979) or one based on the earlier exploratory factor analysis (Miller et al., 1998) was a better fit.

In addition to being able to make direct comparisons, confirmatory factor analysis allows the researcher to test models that are not possible given the constraints of the exploratory factor analysis model. For example, confirmatory factor analysis allows for some factors to be correlated while others remain uncorrelated. Confirmatory factor analysis also allows the researcher to directly estimate higher-order factors and the relationships of lower-order factors to these.

For Caucasians, a two-factor model (M1C) as proposed by the scale's authors was compared with a three-factor model (M2C) suggested by earlier exploratory factor analysis. In the two-factor model, items related to Religious Well-Being were allowed to load on one factor and items measuring Existential Well-Being on a second factor. Following the Palotzian & Ellison (1979) study, the factors were not allowed to be correlated. In the second model (M2C), based on a combination of information from Miller et al's. (1998) analysis and the theory underlying the scale, three factors were proposed. Items were allowed to load on the three factors found in the earlier study. These were Religious Well-being, Life Satisfaction/Purpose and Future. Additionally, it appeared that items from Life Satisfaction/Purpose and Future were those that comprised the Existential Well-Being Scale, while Religious Well-Being emerged as its own factor. Following the theory behind the scale, the two "original" factors - Religious Well-Being and Existential Well-Being were conceptualized as being indicators of the underlying construct or higher-order factor of Spiritual Well-Being.

Results of estimation using AMOS 4 ( Arbuckle, 1999) for these two models are given in Figures 1 and 2. As can be observed from the diagrams, for both models, items loaded as expected. In comparing the models a number of indices are customarily used (Loehlin, 1998).

Indices for these two models are presented in Table 1. These values are various ways of examining whether the data and the model are congruent with one another. For example the overall  $\chi^2$  is a test of whether the matrix of covariances reproduced by the model estimates “matches” the original covariance matrix among the items. In this case, we are looking for a NONsignificant  $\chi^2$ . In practice, this test almost never obtained because of its sensitivity to a number of factors, including departures from multivariate normality and sample size. Therefore, many researchers have developed a number of other indicators of whether the model “fits” or not. For example, the  $\chi^2/df$  ratio is often used. Byrne (1994) suggested that a ratio of 2 or more could be improved. In our case, the three-factor model more closer met this standard than did the two-factor model.

Other indices such as the GFI and AGFI have been proposed (Jöreskog, Sorbom, & Magidson, 1984). These indices give a measure of effect size (Loehlin, 1998) rather than depending strictly on statistical significance. Byrne (1994) suggested that values of less than .90 indicated that the fit of the model might be improved. Cole (1987) suggested that values greater than .9 for GFI and .8 for AGFI respectively “usually indicate a good fit” (P.586). In this case neither model met the suggested standard, but the three-factor model came closer than the 2-factor one. Other indices that compare the fit of the model with a null model are the Tucker Lewis Index (TLI, Bentler & Bonett, 1980) and the Comparative Fit Index (CFI, Bentler, 1990). These indicators give further information in helping a researcher make an informed decision. In each case the three-factor model fits slightly better than the two-factor one.

Finally, two models may be compared directly with a statistical test. The  $\chi^2$  from one model may be compared with the  $\chi^2$  from a second model by subtracting the  $\chi^2$  from the model

with the fewer degrees of freedom from that with the greater degrees of freedom. The resulting  $X^2$  is tested with the difference in degrees of freedom for statistical significance. This  $X^2$  statistic is interpreted as a traditional  $X^2$  so in this case a statistically significant difference means that Model 2C fits statistically significantly better than Model 1C. The three-factor model is statistically superior to the two-factor model for Caucasians.

The Root Mean Square Error of Approximation, RMSEA (Browne and Cudak, 1993) gives an indication of how much variance is left to be explained by the model. For Model 2C less variance remains unexplained than for Model 1C. On further examination of the standardized residuals and modification indices, it appears that a great deal of the unexplained variance might be explained by correlations between the error terms. Although allowing for these correlations would improve the model fit statistically, they do little to help explain the structure of the Spiritual Well Being Scale.

In addition to being statistically superior to the two-factor scale, the model that was estimated also provides a somewhat clearer picture of the construct of Spiritual Well-Being as experienced by Caucasians. Spiritual Well Being seems to be defined more by Existential Well-Being (.89) than by Religious Well-Being (.57). Additionally, Existential Well-Being for Caucasians is related more highly to their view of the Future (1.0) than to Life Satisfaction/Purpose.

For African Americans, the two-factor model based on the scale authors' work was compared with the five-factor model suggested by the earlier analysis. In the exploratory analysis five factors appeared to be a better explanation for item responses than the two original scales. Therefore, five first-order factors were proposed with Connection With God and Personal



Relationship with God being representative of the second-order factor, Religious Well-Being and three factors: Satisfaction With Life, Future, and Meaningfulness being representative of Existential Well-Being. Religious Well-being and Existential-Well Being were conceptualized as being representative of the higher-order construct of Spiritual Well-Being. Results of these analyses are given in Figures 3 and 4. Fit indices are presented in Table 2. The five-factor model (M2Af) was statistically better than the two-factor model. All fit indices were superior for the five-factor model as well. It may be concluded that the five-factor model provides a better explanation than does two factors for the African American sample. Further examination of Figure 4 indicates that for African Americans, Religious Well-Being is more highly related (1.0) to Personal Relationship to God than with Connection With God. Existential Well-Being appears to be equally related to Satisfaction With Life, Future, and Meaningfulness. Additionally for African Americans, Spiritual Well-Being appears to be equally related to both Religious and Existential Well-Being.

### Discussion

In this study, as in the previous study (Miller et al., 1998), the findings provide evidence of ethnicity shaping responses to the SWB scale. In the analysis of the Caucasian data, the three factor model fits better than the two factor model. This finding has implications for the theoretical underpinnings of the scale. For example, Existential Well-Being may be a more complex concept than the original developers of the scale believed. Counselors and researchers using this scale to work with their Caucasian populations need to be aware of this distinction.

The five factor model for African-Americans was discussed in depth by Miller et al. (1998). The authors stated that Factors Four (personal relationship with God) and Five

(meaningfulness) showed ethnic differences anchored in cultural values that guide individual behavior. Factor Four embodied the vertical relationship between the person and God while Factor Five related to the horizontal relationship between the person and others. In the African-American community, the vertical relationship must be in balance for the horizontal relationships to be right. Meaningfulness in life, then, is a result of one's personal relationship with God.

These follow up analyses clarify the previous findings of Miller et al. (1998). The use of the SWB with Caucasian groups requires further examination of the theory underlying the scale because the three factor model provides a better explanation than the two factor model. Also, the use of the scale with an African-American population appears to require a cautious interpretation of scale scores. Because spirituality in the African-American population is the "whole of life" (Frame & Williams, 1996), each person is viewed as a spiritual being living in a spiritual world. This whole life perspective of spirituality and fusion of spirituality in day-to-day living needs to be accounted for when interpreting scale results with an African-American population. In particular, quality of life issues may need to be examined within this cultural context.

Also, religion helps African-Americans cope as well as identify spiritually (Blaine & Croker, 1995). The importance of religion to African-Americans is shown when comparing the scale factor loadings of Caucasians to African-Americans. Here the factor loadings show that the existential dimension is more important than the religious dimension in terms of contribution to Caucasian spiritual well-being while the existential dimension and the religious dimension make essentially equal contributions to the spiritual well being of African-Americans. These findings support the acknowledgment by counselors of the importance of the African American Church as

avenue of social support and coping in the African American community (Bibbins, 2000).

Further research needs to be done with different ethnic groups to clarify the extend to which the scale is anchored in a Caucasian cultural view. Research needs to be conducted with different populations of African-Americans (i.e. non-students) and other ethnic minorities.

Additional research could facilitate the interpretation and the use of the scale for a wider scope of individuals than is currently available.

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Table 1

Comparison of Two Models for the Caucasian Sample

Model	X <sup>2</sup>	df	X <sup>2</sup> /df	Change in X <sup>2</sup>	df for Change	GFI	AGFI	CFI	TLI	RMSEA
M1C	393.19	175	2.25	—	—	.76	.71	.85	.83	.105
M2C	347.66	170	2.04	45.53	5	.78	.73	.88	.87	.094

Note. M1C = Original 2-factor model for Caucasians, M2C = Revised Model based on exploratory factor analysis and theory. GFI=Goodness of Fit Index (Jöreskog, et al., 1984), AGFI=Adjusted Goodness of Fit Index (Jöreskog, et al., 1984), CFI= Comparative Fit Index (Bentler, 1990), TLI = Tucker Lewis Index (Bentler & Bonett, 1980), RMSEA = Root Mean Square Error of Approximation (Browne & Cudak, 1993)

\* p<.001

Table 2

Comparison of Two Models for the African American Sample

Model	X <sup>2</sup>	df	X <sup>2</sup> /df	Change in X <sup>2</sup>	df for Change	GFI	AGFI	CFI	TLI	RMSEA
M1Af	361.55	170	2.13	—	—	.75	.69	.76	.73	.108
M2Af	277.83	166	1.67	83.72*	4	.79	.74	.86	.84	.084

Note. M1Af = Original 2-factor model for African Americans, M2Af = Revised Model based on exploratory factor analysis and theory. GFI=Goodness of Fit Index (Jöreskog, et al., 1984), AGFI=Adjusted Goodness of Fit Index (Jöreskog, et al., 1984), CFI= Comparative Fit Index (Bentler, 1990), TLI = Tucker Lewis Index (Bentler & Bonett, 1980), RMSEA = Root Mean Square Error of Approximation (Browne & Cudak, 1993)

\* p<.001

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Figure Captions

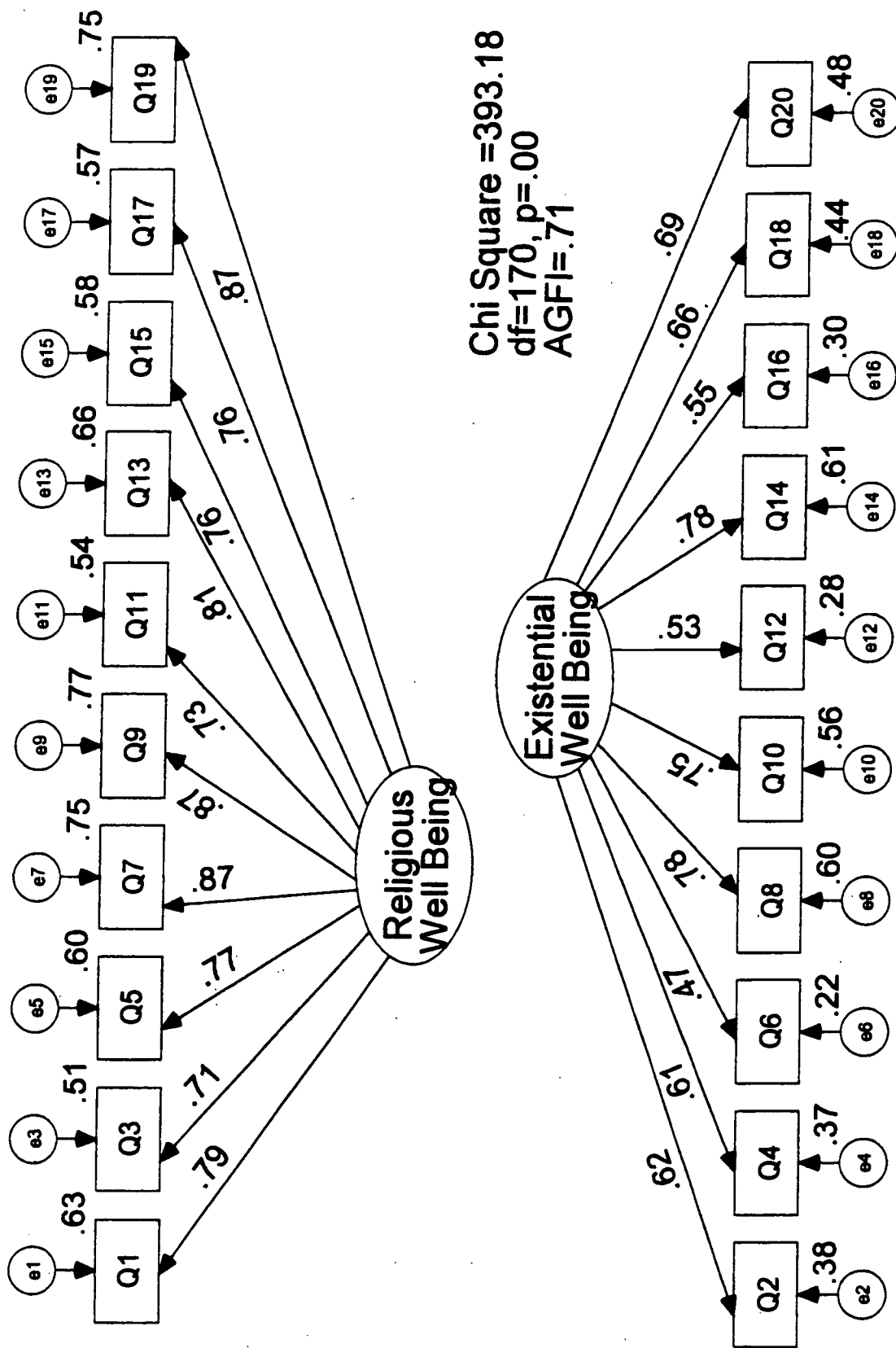
Figure 1. Results of estimation for model 1C, two-factor model for Caucasian sample.

Figure 2. Results of estimation for model 2C, three-factor hierarchical model for Caucasian sample.

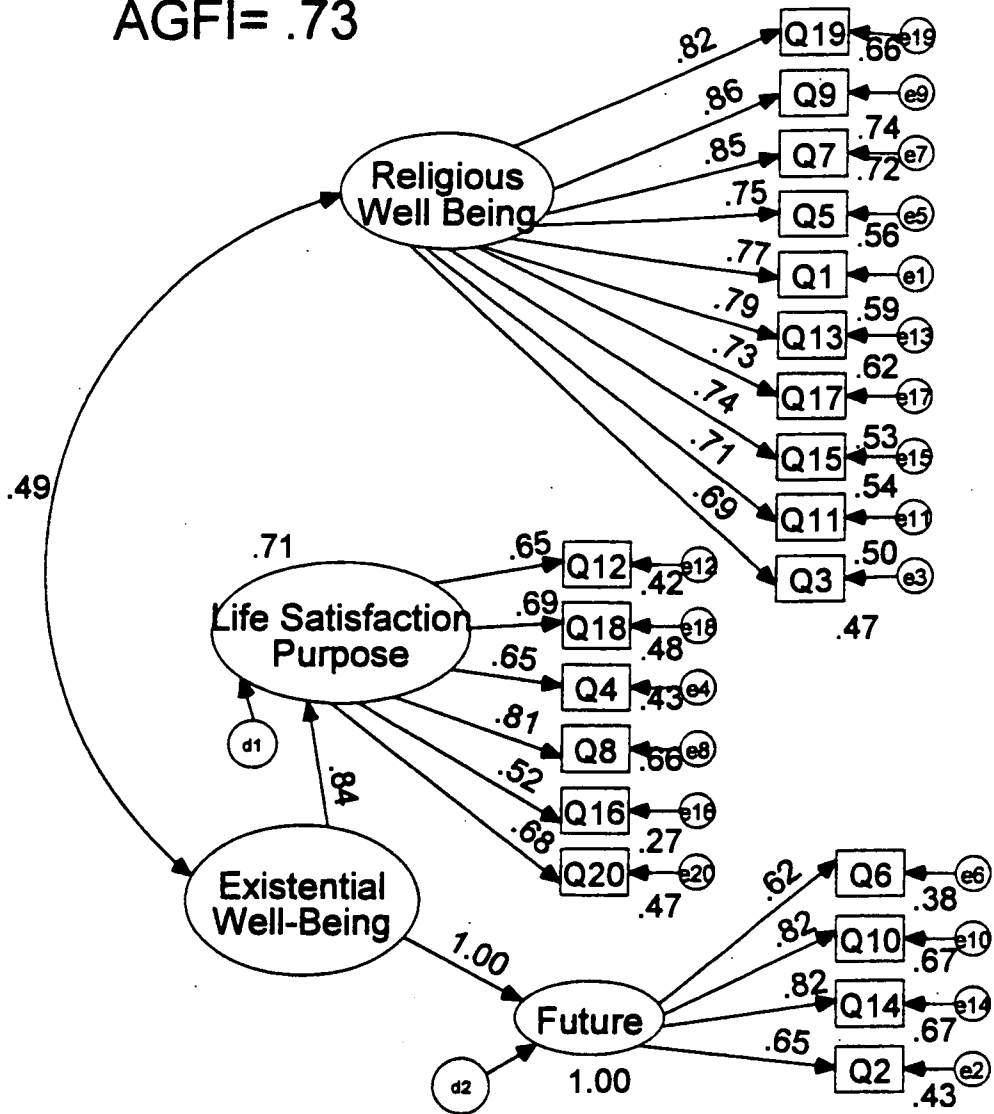
Figure 3. Results of estimation for model 1Af, two-factor model for African American sample.

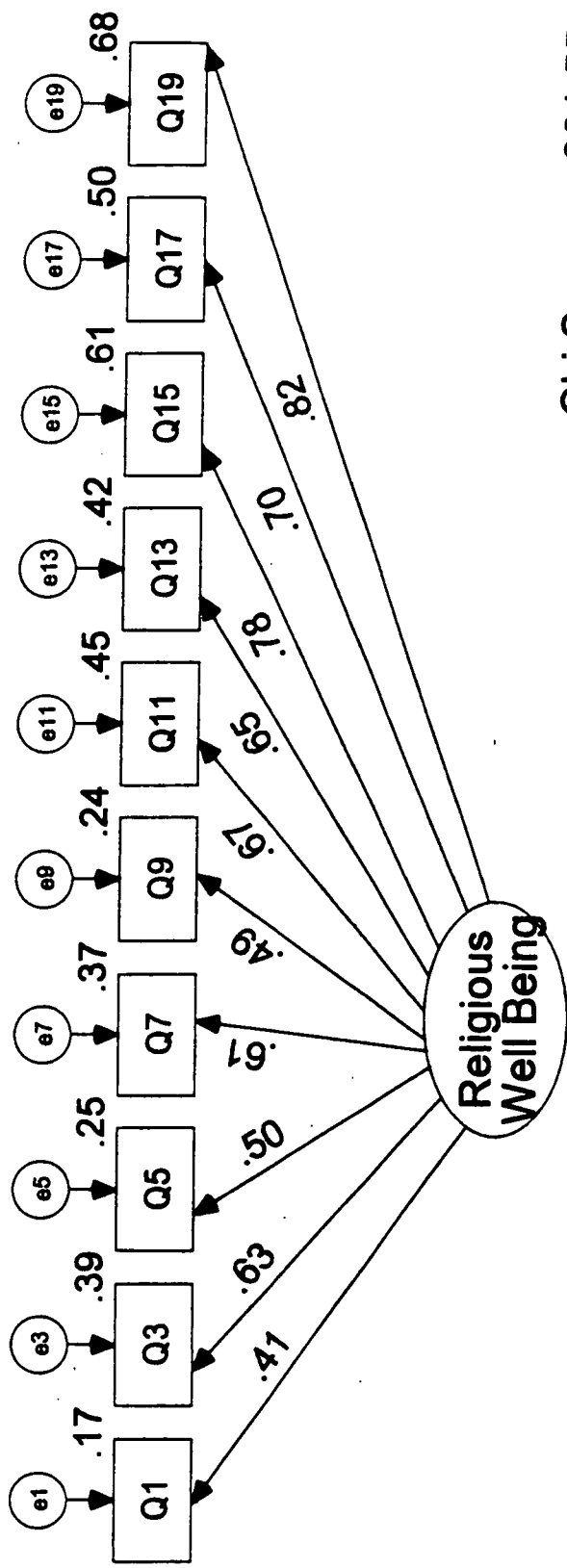
Figure 4. Results of estimation for model 2AF, five-factor hierarchical model for African American sample.



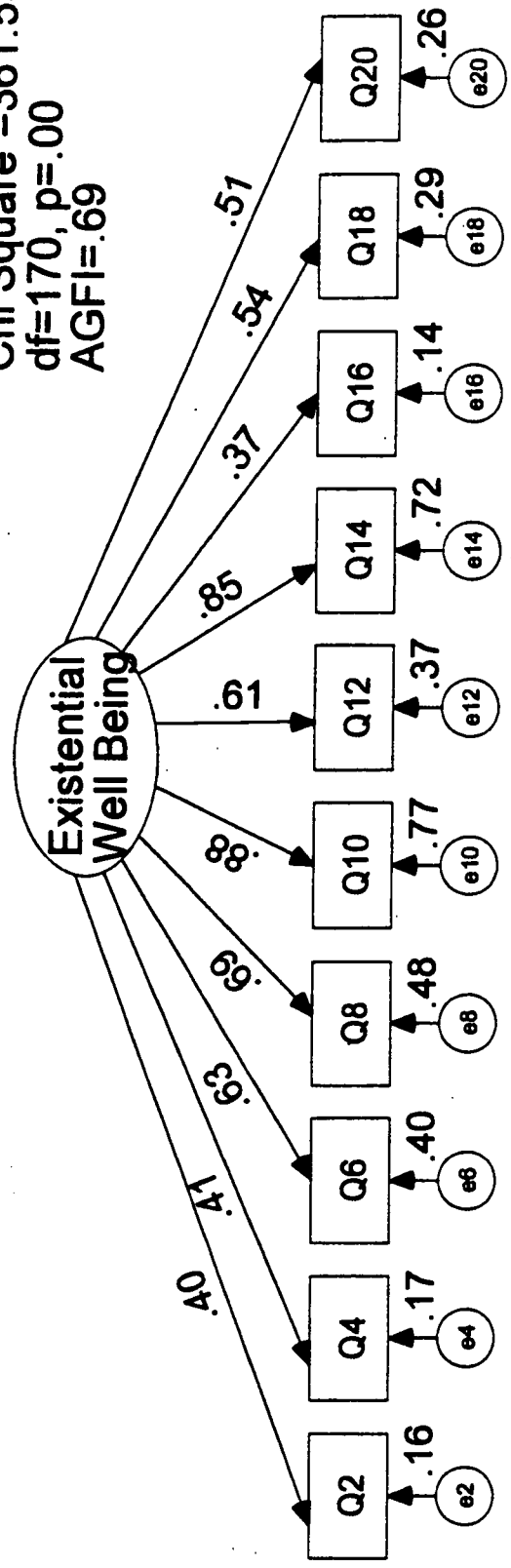


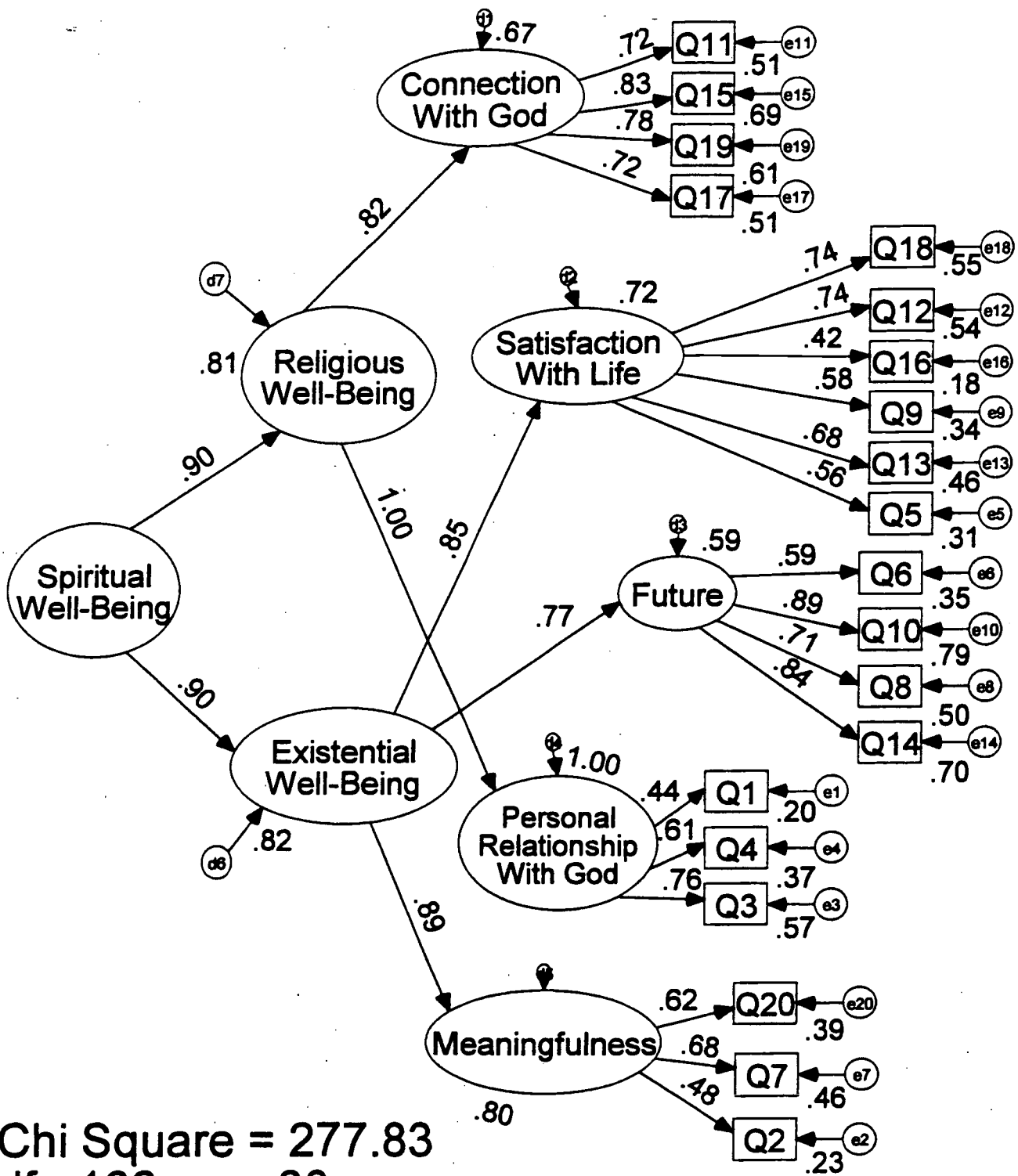
Chi Square = 354.91  
 df = 172, p = .00  
 AGFI = .73





Chi Square = 361.55  
df=170, p=.00  
AGFI=.69





Chi Square = 277.83  
 df= 166, p = .00  
 AGFI= .73

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