

Title: USE OF SITUATION-SPECIFIC NORBECK SOCIAL SUPPORT
QUESTIONNAIRE (NSSQ) ITEMS

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Abstract

Title: USE OF SITUATION-SPECIFIC NORBECK SOCIAL SUPPORT QUESTIONNAIRE (NSSQ) ITEMS

Background: Situation-specific social support, measured by comparably-worded NSSQ items, holds promise in the development of context-specific theories at the practice level. Despite this promise, to date, there is only one published study using situation-specific NSSQ items. This may be due to lack of psychometric work done on such items.

Objectives: The purpose of this study is to explore the statistical parameters of situation-specific affect, affirmation, and aid NSSQ items.

Methods: With data ($N = 154$) collected for a larger study, the parameters of the specified LISREL model were estimated by the Generally Weighted Least Squares Method using an asymptotic covariance matrix.

Results: The overall model was rejected ($\chi^2 = 43.033$, $df = 6$, $p = .000$). Parameter estimates suggest that, in this research context, two situation-specific items (Affirm and Aid) measure unique dimensions of social support.

Conclusions: In this instance, situation-specific aid affirmation and aid items measure unique dimensions of support. Guided by strong theory, investigators should develop situation-specific items based on the original NSSQ items. Use of specific types of social support from particular network members can reduce measurement error.

Key Words: social support, measurement.

The Norbeck Social Support Questionnaire (NSSQ, Norbeck, Lindsey, & Carrieri, 1981, 1983) is widely used to measure perceived availability of types (affect, affirmation, and aid) and sources (network members) of social support. Recently, Gigliotti (2002) confirmed the originally hypothesized three-factor model and recommended theoretical sharpening through investigation of types of support from particular sources to promote development of context-specific theories at the practice level. Without such specificity, measurement error increases and important findings may be missed.

For example, in a study of the effects of types of support from particular sources on Maternal-Student Role Stress (MSRS), Gigliotti (2004) coded participants' children as a separate category rather than globally as relatives. She found that affect, affirmation, and aid from one's children were each associated with less MSRS for midlife women while no type of support from one's relatives was associated with less MSRS. In this case, including children in the relative category would dilute the effect of children's support and enhance the effect of relatives' support. We would miss the significance of children's support and wrongly conclude that support from siblings, parents, etc. was beneficial.

Another potentially fruitful area for decreasing measurement error when using the NSSQ is the use of situation-specific support (Norbeck, 1984). That is, use of affect, affirmation, and aid items that are directly related to a specific situation such as work-related support. In fact, Norbeck found that work-related support accounted for 7.6% of the variance in job stress compared to 3.6% to 3.7% for generic types of support. Moreover, after finding that network composition differed for married vs. unmarried participants and reasoning that the availability of work-related support may differ as a result of marital status, she repeated the regression in the married subsample and found

that work-related support accounted for 24.4% of the variance in job stress for married critical care nurses. Thus, the likelihood of making a Type 1 error was notably reduced through attention to situation-specific support and network composition. This is very important because social support is often used as a moderator variable and measurement error significantly attenuates the effects of such variables (Jaccard, Turrisi, & Wan, 1990).

However, despite these promising findings, a review of the literature revealed no other published studies where NSSQ situation-specific support items were used. This may be due to a lack of psychometric work on such items. Thus, the purpose of this paper is twofold: to report the findings of a factor analysis done to explore statistical parameters of situation-specific affect, affirmation, and aid items and to recommend formulation of NSSQ situation-specific items. LISREL was used to impose constraints on the model due to problems generated by the NSSQ's high inter-item correlations (Gigliotti, 2002).

Situation-Specific Support

Based on Kahn's (1979) definition of social support, the NSSQ asks participants to list and rate how much affect, affirmation, and aid they perceive is available to them from up to 24 network members (see Table 1). Recognizing that these six items are generic, and following House's (1981) suggestion concerning measurement of work-related support, Norbeck (1984) recommended use of context-specific items and created two additional items for a study concerning job stress and critical care nurses: "How much can you talk about your work with this person?" and, "How much does this person help you to relax or re-energize after work?"

Referring to the six original NSSQ items in Table 1, these two items are most comparable to Affirm1 (confiding) and Aid2 (long-term aid). The absence of comparable

Affect1 or Affect2 items reflects Norbeck's thinking at that time concerning the two-factor structure of the NSSQ. That is, as Gigliotti (2002) demonstrated, the limitations of exploratory factor analytic techniques and the absence of confirmatory factor analysis through LISREL, precluded the confirmation of the hypothesized three-factor (affect, affirmation, and aid) structure. Affect and affirmation are so highly correlated, that they emerged as one factor (emotional support) and thus, Norbeck's two situation-specific items reflect emotional and tangible support.

Though Norbeck (1984) chose to combine the scores on the two items for use as a global work-related support measure it is likely that, used separately, the emotional and the tangible work-related items would offer even greater specificity. This is because, as Gigliotti (2002) demonstrated, tangible support (aid) is not highly correlated with either affect or affirmation. Likewise, it is erroneous to combine situation-specific items with the original NSSQ items for use as a global measure of support. For example, combining Affect1, Affect2, and SSAffect leads to increased measurement error because if SSAffect measures a unique dimension of affect then reliability is jeopardized. If SSAffect is not a unique measure of support then it is redundant and will serve to artificially inflate scores.

Items for the present study (see Table 2) were chosen within the context of MSRS (Gigliotti, 2001; 2004). That is, MSRS arises specifically from enacting the maternal and student roles simultaneously and results in experienced conflict and ambiguity concerning how to perform both roles' behaviors satisfactorily. Thus, respect/admiration for one's status as a mother and a student (Affect2), agreement with being both a mother and a student (Affirm2), and long term aid (time for studying, money, household help, etc.) (Aid2) were judged most relevant. In order to evaluate whether these items indeed

measured unique dimensions of Affect2, Affirm2, and Aid2 respectively or conversely were redundant measures, the statistical parameters (factor loadings and unique error terms) of these items were evaluated by specifying the following LISREL model:

The observed variables Affect2 and SSAffect represent the latent variable AFFECT; the observed variables Affirm2 and SSAffirm represent the latent variable AFFIRM; and the observed variables Aid2 and SSAid represent the latent variable AID.

Method

Procedure

As part of a larger study, the revised NSSQ (6 item NSSQ plus 3 situation specific items) was administered to 168 undergraduate women who were mothers attending a large publicly supported college in the northeastern United States. Voluntary participation was solicited in classes after receiving human subjects approval. After professors left the room, the study was explained, questions answered, and assurance given regarding anonymity. Participation was regarded as tacit consent.

An instructive cover letter comprised the first page and then three instruments, one of which was the revised NSSQ, were arranged in eighteen permutations. A personal data sheet was administered last. Questionnaires were completed at home and returned to the investigator in a prepaid envelope; reminders were sent to classes two and four weeks post presentation. Response rate was 57%.

Sample

There were 14 cases with missing NSSQ values and these were deleted leaving 154 cases. All participants were pursuing their first college degree and all had at least one child under the age of 19 years presently living at home. Participants' mean age was 37

years (21 to 51 years); mean number of children was 2.3 (1 to 6). The sample was 67.3% white, 12.4% Black, 13.7% Hispanic, 2.0% Asian, and 4.6% listed "other". The majority of participants (69.7%) were married, 5.8% divorced, 8.4% separated, 9.7% single, .6% widowed, and 5.8% were unmarried in a long term relationship; 81.9% were US born.

Data Analysis

A new file containing only the variables Affect2, Affirm2, Aid2, SSAffect, SSAffirm and SSAid was created. Data were screened for univariate normality using PRELIS 2 in LISREL 8.30 (Scientific Software International, 1999). Though all six item-scores were ordinally scaled (0 to 4) for each network member's contribution, the range of scores, which is dependent on network size, is 0-96 for each item as described. Because each item had >15 categories, all were treated as continuous variables by PRELIS 2.0. However, it was recognized that item-scores lacked a true origin. In addition, all items showed statistically significant positive skewness and, with the exception of one item (SSAffect), all items showed statistically significant kurtosis; means and standard deviations appear in Table 3. Due to existent non-normality, a Pearson Product Moment Correlation (see Table 4) and the necessary asymptotic covariance matrix was computed by PRELIS 2.0 for use with the Generally Weighted Least Squares (WLS) method as suggested by Jöreskog and Sörbom (1996).

To test the model, the following factor loadings were specified: The observed variables Affect2 and SSAffect were designated as the latent variable AFFECT, the observed variables Affirm2 and SSAffirm were designated as the latent variable AFFIRM and the observed variables Aid2 and SSAid were designated as the latent variable AID. The latent variables AFFECT, AFFIRM, and AID were allowed to

correlate as in Gigliotti's (2002) report. LISREL 8.3 (Scientific Software International, 1999) evaluated the model. It was expected that if, the situation-specific items measure a unique dimension of support, their factor loadings would differ and their unique error terms would be high. That is, the resulting model would show that situation-specific support items measure unique dimensions of affect, affirmation, and aid.

Results and Discussion

As expected, the proposed model is a poor fit (see Figure 1); Chi-Square with 6 degrees of freedom was 43.033 ($p = .0000$). Squared multiple correlations, correlations between that variable and other variables in the model, ranged from .77 (SSAid) to .98 (Aid2) and factor loadings are high (.88 to .99). However, the factor loading for SSAid shows the most discrepancy. Standardized residuals were all negative (-6.302 to -4.852) showing that the variables' covariances were overestimated (Jöreskog and Sörbom, 1996).

The unique error terms of the observed variables Affect2 (.04) and SSAffect (.04) are low and comparable but the unique error terms for Affirm2 (.10) and SSAffirm (.02) show a greater difference and the unique error terms for Aid2 (.02) and SSAid (.23) show the most discrepancy. This finding suggests that Affirm2 and SSAid are measuring unique portions of Affirm and Aid (Jöreskog and Sörbom, 1996). However, the only significant t-value, at $\alpha = .05$, for the unique error terms was SSAid (2.47).

As a result of these two unique error terms (SSAid and Affirm2), modification indices suggested adding an error covariance from SSAid to Affirm2. This was not considered because it is unlikely that these two variables are (together) measuring something unique. Rather, it is likely that, their scores are similarly low (see means in Table3) for context-specific reasons. That is, in the context of being a mother and a

student, those who *do not* agree with your actions and thoughts in general (low Affirm2 scores) may be in more agreement with your being a mother and a student. In this sample, 14.2% of participants were divorced or separated and many listed their former husbands and/or in-laws in their support networks. Many of these participants rated former husbands and in-laws highly for agreeing with them being a mother and a student, perhaps due to financial implications, but gave them lower scores on general agreement. In a similar vein, most participants rated few network members high on situation-specific support (low SSAid scores). Thus, SSAffirm and SSAid are not as highly correlated with Affirm2 and Aid2 as is SSAffect and Affect2. In the latter instance, those who respect and admire you in general would respect and admire you for being a mother and a student.

Conclusions and Recommendations

It has been shown, through the large and statistically significant unique error term that, SSAid is distinct amongst the situation-specific items. It has also been shown that SSAffirm can be distinguished from Affirm2 but SSAffect and Affect2 are comparable. Given this, as well as the previously cited evidence concerning gains in statistical power when using situation-specific social support items, it is recommended that investigators develop and use theoretically motivated situation-specific items when appropriate.

Though in this research context, participants' scores varied on generic affirmation vs. situation-specific affirmation as well as on generic long term aid and situation specific long term aid, it is likely that in other research contexts, situation-specific affect scores may also differ. Thus, it is recommended that investigators continue to combine the six original NSSQ items to measure global social support as well using the generic affect, affirmation and aid items (two items each) to measure the three dimensions of support, as

recommended by Gigliotti (2002). It is also recommended that investigators construct situation-specific items that conform closely to the wording of the comparable NSSQ items and use these as separate situation-specific support variables.

Situation-specific affect, affirmation, and aid items scores should be used as separate variables rather than a global situation-specific support variable because, to date, there is no psychometric work done on six situation-specific support variables as measures of the global concept situation-specific support. The correlation matrix (see Table 4) shows the relatively low correlations between SSAffect, SSAffirm, and SSAid. Moreover, it is likely that greater precision, and thus greater reduction in measurement error will be achieved by investigating the three separate dimensions of situation-specific support. As previously noted, investigators should also refrain from adding situation-specific item scores to the generic affect, affirmation, and aid scores.

Investigators are cautioned to add only situation-specific items that conform closely to the original item wording. Also, if planning to administer the original NSSQ along with situation-specific items, only those situation-specific items that are theoretically meaningful should be asked. This is because adding unnecessary items to the NSSQ will serve to decrease response rate and increase the incidence of missing data. Thus, these items should be added judiciously when supported by strong theory.

Finally, situation-specific support from particular network members should be investigated. This along with attention to network composition differences hold great promise for strengthening the link between social support theory and research. The interested reader is referred to Gigliotti's recommendations for coding network members (2002) and discussion of network composition considerations (2004).

References

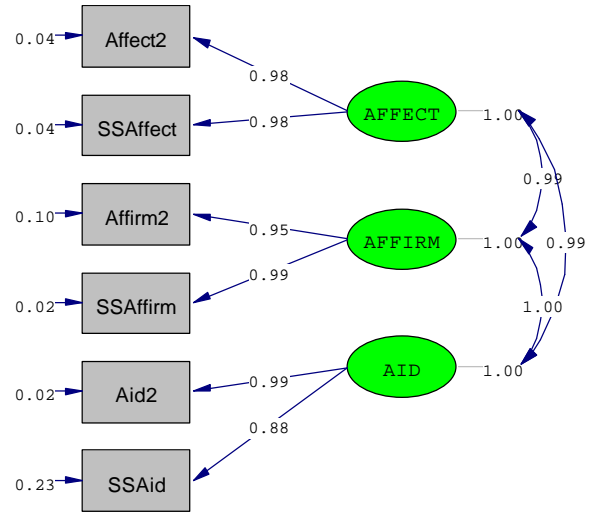
- Gigliotti, E. (2001). Development of the perceived multiple role stress scale (PMRS). *The Journal of Nursing Measurement*, 9 (2), 163-180.
- Gigliotti, E. (2002). A confirmation of the factor structure of the Norbeck social support questionnaire. *Nursing Research*, 51, 276-284.
- Gigliotti, E. (2004). Types and sources of social support and maternal-student role stress in married associate degree nursing students. *Issues in Mental Health Nursing*, 25, 415-432.
- House, J.S. (1981). *Work stress and social support*. Reading, MA: Addison-Wesley.
- Jaccard, J., Turrisi, R. & Wan, C.K. (1990). *Interaction effects in multiple regression*. Sage University Paper Series on Quantitative Applications in the Social Sciences, (07-072). Newbury Park, CA: Sage.
- Jöreskog, K. G., & Sörbom, D. (1996). *LISREL 8 User's reference guide*. Chicago, IL: Scientific Software International.
- Kahn, R. L. (1979). Aging and social support. In M. W. Riley (Ed.), *Aging from birth to death: Interdisciplinary perspectives* (pp. 77-91). Boulder, CO: Westview Press.
- LISREL 8.30 [Computer Software]. (1999). Chicago, IL: Scientific Software International.
- Long, J.S. (1983). *Confirmatory factor analysis*. Sage University Paper Series on Quantitative Applications in the Social Sciences, 07-033. Beverly Hills and London: Sage Pubns.

Norbeck, J.S. (1984). Types and sources of social support for managing job stress in critical care nursing. *Nursing Research*, 34, 225-230.

Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L. (1981). The development of an instrument to measure social support. *Nursing Research*, 30, 264-269.

Norbeck, J. S., Lindsey, A. M., & Carrieri, V. L. (1983). Further development of the Norbeck social support questionnaire: Normative data and validity testing. *Nursing Research*, 32, 4-9.

Figure 1: Confirmatory Factor Analysis: Specified Model Results



Chi-Square=43.03, df=6, P-value=0.00000, RMSEA=0.201

Table 1

NSSQ Functional Support Items

Functional Designation	Item
Affect1	How much does this person make you feel liked or loved?
Affect2	How much does this person make you feel respected or admired?
Affirm1	How much can you confide in this person?
Affirm2	How much does this person agree with your actions or thoughts?
Aid1 (short term)	If you needed to borrow \$10, a ride to the doctor, or some other immediate help, how much could this person usually help?
Aid2 (long term)	If you were confined to bed for several weeks, how much could this person help?

From: Norbeck, J.S., Lindsey, A.M., & Carrieri, V.L. (1981). The development of an instrument to measure social support. Nursing Research, 30, 264-269. Reprinted with permission of author.

Table 2

Situation-Specific Questions Used

Functional Designation	Item
SSAffect	How much does this person make you feel respected or admired for being both
SSAffirm	How much does this person agree with your being both a mother and a student
SSAid	When you need help with being a student (time for studying, money, help with can this person help you?

Table 3

Means and SD's

Variable	Mean	SD
Affect2	34.31	18.75
SSAffect	34.86	18.72
Affirm2	31.61	17.49
SSAffirm	34.94	18.80
Aid2	26.26	13.81
SSAid	20.19	13.66

Table 4

Pearson Product Moment Correlation Matrix

	Affect2	SSAffect	Affirm2	SSAffirm	Aid2	SSAid
Affect2	1.000					
SSAffect	.936	1.000				
Affirm2	.754	.725	1.000			
SSAffirm	.947	.942	.762	1.000		
Aid2	.936	.950	.737	.976	1.000	
SSAid	.600	.589	.801	.627	.601	1.000