Measuring Social Support: PRQ2000

Claramm Weinert

This chapter discusses the Personal Resource Questionnaire, a measure of social support.

PURPOSE

Social support is an intuitive and ubiquitous concept. Exploration of social networks can be traced to foundational work by Cooley (1902), Mead (1934), Simmel (1908/1950), and Moreno (1934). The dramatic findings of Nuckholl, Cassell, and Kaplan (1972), regarding relationship of high stress/low psychosocial assets and negative pregnancy outcomes, sparked further interest in the health-related nature of social support. As the role of social support in health began to be recognized and examined, an emerging theme was that the “human climate” played a significant role in maintenance of health and response to stress. By the early 1980’s, nurse-developed measures of social support reached the literature. The initial developmental efforts on the Personal Resource Questionnaire (Brandt & Weinert, 1981) and on the Norbeck Social Support Questionnaire (Norbeck, Lindsey, & Carrieri, 1981) were reported in Nursing Research.

In her comprehensive review of social support, Wortman (1984) noted that although the nature, meaning, and measurement of the concept are still debated, social support has been claimed to have positive effects on a wide scope of outcomes, including physical health, mental well-being, and social functioning. Today there are still debates on and multiple definitions of social support. Likewise, there are wide discrepancies in the approaches taken to measure social support. Yet there are common threads of agreement: that social support has a positive influence on the experience of dealing with illness (Stewart, 1993); that, over the course of a long-term illness, individuals express the need for and describe the importance of social support (Irvine, Brown, Crooks, Roberts, & Browne, 1991); that social support has a positive influence on illness management
and that support from others who have experienced similar health problems is of particular benefit (Helgeson & Cohen, 1996; Stewart, 1993; Thorne, 1993; Weinert, 2000); and that inadequate social support is related to increased depression in people with chronic conditions (Connell, Wayner, Gallant, & Sharpe, 1994; Faucett, 1994).

The Personal Resource Questionnaire (PRQ), a first-generation nursing measure of social support, was developed in the late 1970s. After its initial use in dissertation research, minor revisions were made that produced the PRQ82. The Measurement of Clinical and Educational Nursing Outcomes Project allowed for systematic revisions resulting in another revision, the PRQ85 (Weinert, 1988). Clearly, social support remains a key variable in nursing research, but it was anticipated that, as newer measures were developed and tested, enthusiasm for the PRQ would wane. This expectation was unfounded because requests for its use continue to come from across the global nursing community. The sustained interest in the scale, questions posed by researchers using the tool, and further research by the tool’s developers encouraged further psychometric testing. The purpose of this chapter is to report the recent psychometric evaluation and modifications of the instrument and to present the latest version, the PRQ2000. Despite the continuing definitional and measurement debates, social support remains a salient factor in nursing research and clinical practice.

CONCEPTUAL FRAMEWORK

The Personal Resource Questionnaire (PRQ) (Brandt & Weinert, 1981) was designed using a synthesis of ideas based primarily on the model by Weiss (1969, 1974) of relational functions. Social support was defined as a composite concept including (1) attachment/intimacy, (2) social integration, (3) nurturance, (4) reassurance of worth, and (5) availability of assistance. The PRQ is a two-part norm-referenced instrument. Part 1 was designed to gather descriptive information on the social network and consists of 10 life situations in which one could be expected to need assistance. Based on Weiss’s dimensions, Part 2 is a 25-item, 7-point Likert scale designed to assess the perceived level of social support. Five items were written for each of the five underlying hypothetical Weiss dimensions. Scores on Part 2 range from 25 to 175, with higher scores indicating higher levels of social support. The instrument is self-administered and requires approximately 15 minutes to complete.

The instrument has systematically and consistently undergone psychometric evaluation over the past 20 years, resulting in the PRQ82, PRQ85, and now the PRQ2000. The developmental history and psychometric evaluation are chronicled in a series of publications (Brandt & Weinert, 1981; Tilden & Weinert, 1987; Weinert, 1984, 1987, 1988; Weinert & Brandt, 1987), and information is kept current at www.montana.edu/cweinert.
The PRQ has enjoyed a wide circulation with application in multiple types of research projects. To date, 1,375 requests to use the instrument have been received, coming from every state in the United States, 9 Canadian provinces, and 33 other countries. The number of requests ranged from 17 in 1983 to 149 in 1989, with 28 requests thus far in 2002. The measure has been translated into six languages: Japanese, Chinese, Dutch, Spanish, Korean, and Thai. Those requesting the PRQ were nursing students (baccalaureate: 6%; masters: 41%; doctoral: 17%), nursing faculty (19%), and nurses in practice/other disciplines (16%). A computer database on user requests is maintained, as well as a file of all data provided by researchers, articles in which the tool was cited, and copies of the translations.

PROCEDURE FOR DEVELOPMENT OF THE PRQ2000

Earlier psychometric evaluation of the Personal Resource Questionnaire gave evidence that the five hypothetical underlying dimensions did not reflect the true dimension of the scale (Weinert, 1987, 1988). Likewise, several weak items were identified that did not factor cleanly, were not highly correlated with the other items, or were not strongly correlated with the total. These initial impressions were presented by Weinert (1987, 1988) with caveats about the use of pooled data sets in order to build an adequate sample for psychometric evaluation of an instrument.

As an adequate sample became available, further examination of the psychometric properties was possible. The evaluation of the multidimensionality of Part 2 was conducted using the same techniques employed earlier and described in detail by Weinert (1987, 1988). A sample of 899 participants was used from the Family Health Study, a nation-wide study of families managing multiple sclerosis. Data had been collected from middlecent participants in 47 states using a mail questionnaire. Cronbach’s alpha for the PRQ85 for the total sample was .92, which is consistent with alphas reported across multiple studies (Table 13.1). The Family Health Study data set was randomly divided into two: sub-sample 1 \( (N = 449) \) and sub-sample 2 \( (N = 450) \). The alpha for sub-sample 1 was .93 and the alpha for sub-sample 2 was .91.

Sub-sample 1 Analysis

In the earlier factor analysis (Weinert, 1987, 1988), Rao’s factoring was selected, because it was designed to find a factor solution in which the correlation between the hypothesized factors and the set of data variables were maximized. Likewise, oblique rotation was used to allow the initial factor to rotate to best summarize any clustering of variables, and factors were allowed to correlate if such correlations existed in the data.
<table>
<thead>
<tr>
<th>Study</th>
<th>Sample</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family Health Study—Time 1</td>
<td>National sample of couples (mean age: 45.5) living with multiple sclerosis ($N = 722$)</td>
<td>.91</td>
</tr>
<tr>
<td>Family Health Study—Time 2</td>
<td>National sample of couples (mean age: 44.5) living with multiple sclerosis ($N = 1,204$)</td>
<td>.92</td>
</tr>
<tr>
<td>Family Health Study—Time 3</td>
<td>National sample of couples (mean age: 46.5 living with multiple sclerosis ($N = 1,157$)</td>
<td>.92</td>
</tr>
<tr>
<td>Family Health Study—Time 4</td>
<td>National sample of couples (mean age: 47.3) living with multiple sclerosis ($N = 1,058$)</td>
<td>.91</td>
</tr>
<tr>
<td>Montana Family Cancer Project—T1</td>
<td>Montana and Northern Wyoming persons with cancer and their caregivers (mean age: 58.7) ($N = 840$)</td>
<td>.76</td>
</tr>
<tr>
<td>Montana Family Cancer Project—T2</td>
<td>Montana and Northern Wyoming persons with cancer and their caregivers (mean age: 59.2) ($N = 588$)</td>
<td>.80</td>
</tr>
<tr>
<td>Montana Family Survey</td>
<td>Rural Montana, Wyoming, Washington, North Dakota men and women (mean age: 46.8) ($N = 302$)</td>
<td>.90</td>
</tr>
<tr>
<td>Montana Center on Rural Aging Survey</td>
<td>Montana farmers/ranchers (mean age: 65.7) ($N = 248$)</td>
<td>.92</td>
</tr>
<tr>
<td>Montana Cardiac Rehabilitation Project</td>
<td>Rural Montana and Nevada men and women (mean age: 64) with a recent cardiac incident ($N = 286$)</td>
<td>.92</td>
</tr>
<tr>
<td>Women to Women Project—Cohort 1—T5</td>
<td>Rural middlesex women living with a chronic condition ($N = 25$)</td>
<td>.92</td>
</tr>
<tr>
<td>Women to Women Project—Cohort 3—T3</td>
<td>Rural middlesex women living with a chronic condition ($N = 27$)</td>
<td>.94</td>
</tr>
</tbody>
</table>

The current SPSS procedures that approximate Rao's factoring are maximum likelihood, and oblique rotation is direct oblimin. Using sub-sample 1 data, a 5-factor solution was first tested. Based on the magnitude of the eigenvalues, the point of discontinuity of the percentage of explained variance, and distribution of the variables within the factors, the 5-factor hypothesized...
### TABLE 13.2 Factor Structure and Items

<table>
<thead>
<tr>
<th>Factor 1</th>
<th>Factor 2</th>
<th>Factor 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q-1</td>
<td>Q-2</td>
<td>Q-5</td>
</tr>
<tr>
<td>Q-4</td>
<td>Q-3</td>
<td>Q-7</td>
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<tr>
<td>Q-11</td>
<td>Q-6</td>
<td>Q-8</td>
</tr>
<tr>
<td>Q-13</td>
<td>Q-9</td>
<td>Q-10</td>
</tr>
<tr>
<td>Q-15</td>
<td>Q-12</td>
<td>Q-14</td>
</tr>
</tbody>
</table>

The structure was not substantiated. Using the same extraction and rotation, 4-, 3-, and 2-factor structures were then examined. The 3 factors appeared to be the most suitable model and explained 46.2% of the variance. As in the earlier analyses, weak items were again noted. To identify the strongest, most parsimonious, and least redundant combination of items, the factor analysis was repeated sequentially, thus removing items that loaded heavily on 2 or more factors until a stable 3-factor solution with 15 items was identified. This model explained 54.1% of the variance, with each of the factors containing 5 items. Although items originally designed to tap the dimensions of intimacy, social integration, nurturance, worth, and assistance were represented in the reduced item model, these items did not empirically cluster as initially hypothesized. Factor 1 was composed of three of the original Intimacy items and one each of Social Integration and Worth. Factor 2 was composed of one Nurturance, one Social Integration item, and three Worth items. Factor 3 was composed of three Social Integration items and two Assistance items (Table 13.2). The alpha for the 15-item scale was .91, which was down slightly from the 25-item alpha of 0.98. The items on the PRQ appear to tap the multidimensional construct of social support, but they do not empirically arrange in the five hypothetical categories.

The intercorrelations among the three factors were: $r = .60$ between factor 1 and 2, $r = .61$ between factor 1 and 3, and $r = .70$ between factors 2 and 3. Low to moderate correlations would be anticipated if each factor contributed uniquely to the total construct. Higher correlations indicated some lack of distinctiveness of factors and redundancy in measurement. The inter-factor correlations indicated
some overlapping that might be attributed to the fact that 4 items, although loading most heavily on one factor, also loaded on a second factor.

The factors were examined for internal consistency. The alpha for factor 1 was .83, factor 2 was .86, and factor 3 was .82. The inter-item correlations for factor 1 ranged from $r = .39$ to $r = .56$, for factor 2 from $r = .44$ to $r = .70$, and for factor 3 from $r = .38$ to $r = .68$, indicating that the items were correlated, as would be expected, but not with a great deal of redundancy. The factor to total correlations were $r = .81$ for factor 1, $r = .90$ for factor 2, and $r = .89$ for factor 3, indicating that each factor was highly correlated with and contributed fairly evenly to the total.

### Sub-sample 2 Analysis

To explore the generalizability of the factor analysis results for sub-sample 1, analysis of sub-sample 2 was done. The process and procedures used for the analysis of sub-sample 1 were repeated. Again, the 3-factor solution appeared to be the most suitable model and explained 49.0% of the variance. The sequential factor analyses again identified a 15-item, 3-factor solution. The items loaded on the same factors as in the sub-sample 1 analysis with the exception of one item. This item loaded most heavily on factor 2 with a lighter loading on factor 3. In the sub-sample 1 analysis, this item loaded only on factor 3. The alpha for the 15-item scale was 0.90, which was down slightly from the 25-item alpha of 0.91.

The intercorrelations among the three factors were $r = .58$ between factors 1 and 2, $r = .56$ between factors 1 and 3, and $r = .69$ between factors 2 and 3. The alpha for factor 1 was .82, factor 2 was .81, and factor 3 was .79. The inter-item correlations for factor 1 ranged from $r = .35$ to $r = .63$, for factor 2 from $r = .37$ to $r = .55$, and for factor 3 from $r = .26$ to $r = .57$, indicating again that the items were correlated, but not with a great deal of redundancy. The factor to total correlations were $r = .81$ for factor 1, $r = .89$ for factor 2, and $r = .88$ for factor 3, which indicated that each factor was highly correlated with and contributed fairly evenly to the total. The results from sub-sample 2 substantiated the three-sub-scale multidimensional definition of social support. Likewise, it was demonstrated that the more parsimonious 15-item scale had similar reliability estimates for both sub-samples and did not vary dramatically from the alphas for the full 25-item scale for each sub-sample.

### DESCRIPTION, ADMINISTRATION, AND SCORING

**PRQ85—Part 1**

The PRQ85—Part 1 was designed to estimate the number of interpersonal resources and contained 10 life situations developed to represent the
domains of events for which a person might need assistance. The 10 life situations tapped the domains of (a) immediate help, (b) extended help with an ill family member, (c) relationship problems with spouse/partner or intimate other, (d) problem with a family member or friend, (e) financial problems, (f) loneliness, (g) help if sick, (h) job problems, (i) frustration with conditions of life, and (j) personal concerns. For each life situation, the respondent indicated the sources of support (e.g., no one, child, or friend). The respondent then indicated if the situation had occurred in the past 3 to 4 months and to what extent satisfaction was felt with the assistance received. Part 1 will not be included in the PRQ2000 for a variety of reasons. Because Part 1 and Part 2 can be administered independently, most researchers have not used Part 1. It significantly increased the length of the instrument and taps only assistance, rather than the multidimensional construct of social support. The intent of Part 1 was more of a heuristic device to give an estimate of the breadth and composition of the network. Those interested in network analysis are encouraged to use the stronger and more mature measures that are available. There is no single way to score Part 1, the strength of this being that investigators could use the data as best fit their particular needs. Additionally, there was no real comparability across studies. Attempts to correlate the findings of Part 1 and Part 2 were not conclusive. Thus, Part 1 will not be included as an official part of the PRQ2000. However, the PRQ85–Part 1 will be available on request and can be administered with or without the PRQ2000.*

**PRQ2000**

The PRQ2000 is a self-administered instrument composed of 15 items on a 7-point Likert scale that measures social support (see Appendix). The concept of social support is defined based on Weiss's (1969, 1974) model of relational functions. The item responses range from 1 (strongly disagree) to 7 (strongly agree). The 15 items are summed to calculate the total score. Possible total scores can range from 15 to 105, with higher scores indicating higher levels of perceived social support. In the developmental work, the mean scores for sub-sample 1, sub-sample 2, and several available data sets were calculated and are presented in Table 13.3.

**RELIABILITY AND VALIDITY**

Although the psychometric properties of the PRQ85 were demonstrated to be strong, the new PRQ2000 will need to be re-evaluated over time. As

*To receive the instrument, contact the author at www.montana.edu/cweinert.*
### TABLE 13.3 PRQ2000: Initial Mean Scores and Reliability Estimates

<table>
<thead>
<tr>
<th>Sub-sample</th>
<th>Sample</th>
<th>Mean</th>
<th>SD</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sub-sample 1</strong></td>
<td>National sample of couples (mean age: 48.4) living with multiple sclerosis (N = 449)</td>
<td>82.42</td>
<td>14.43</td>
<td>.914</td>
</tr>
<tr>
<td><strong>Sub-sample 2</strong></td>
<td>National sample of couples (mean age: 48.0) living with multiple sclerosis (N = 450)</td>
<td>84.72</td>
<td>13.73</td>
<td>.899</td>
</tr>
<tr>
<td><strong>Women to Women Project—Out-of-State</strong></td>
<td>Rural women (mean age: 50.9) living with chronic illness (N = 97)</td>
<td>79.72</td>
<td>16.75</td>
<td>.927</td>
</tr>
<tr>
<td><strong>Montana Center on Rural Aging Survey</strong></td>
<td>Montana farmers/ranchers (mean age: 65.7) (N = 248)</td>
<td>83.48</td>
<td>13.76</td>
<td>.906</td>
</tr>
<tr>
<td><strong>Montana Family Cancer Project</strong></td>
<td>Montana and Northern Wyoming persons with cancer and their caregiver (mean age: 59.2) (N = 555)</td>
<td>83.72</td>
<td>12.93</td>
<td>.904</td>
</tr>
<tr>
<td><strong>Montana Cardiac Rehabilitation Project</strong></td>
<td>Rural Montana and Nevada men and women (mean age: 64) with a recent cardiac incident (N = 286)</td>
<td>81.44</td>
<td>14.16</td>
<td>.896</td>
</tr>
<tr>
<td><strong>Women to Women Project—T3</strong></td>
<td>Rural women (mean age: 48.6) living with a chronic condition (N = 99)</td>
<td>79.79</td>
<td>14.79</td>
<td>.916</td>
</tr>
</tbody>
</table>

Part of the developmental process discussed earlier, the new version of the Personal Resource Questionnaire was initially tested with available data sets. Reliability estimates indicated that the internal consistency remained stable and adequate, ranging from alpha = .87 to .93 (Table 13.3).

Construct validity, the extent to which a particular measure relates to other measures consistent with theoretically derived hypotheses concerning the concepts that are being measured, was evaluated for the PRQ82 (Weinert, 1987). Social support can be expected to be related to, but not the same as, mental health variables. Based on the discriminate validity principle, the PRQ ought to be correlated mid to low levels with mental health measures, thus indicating that social support is related to these constructs but is not the same. For a sample of 181 adults, the PRQ82—Part 2 was correlated with the Beck Depression Inventory (BDI; Beck,
1967) and the State-Trait Anxiety Scale (Spielberger, Gorsuch, & Lushene, 1970). Significant moderate correlations were obtained between PRQ82 and BDI \( r = -.42 \) and PRQ82 and State-Trait Anxiety Scale \( r = -.39 \). Norbeck and associates (Norbeck, Lindsey, & Carriera, 1981) reported a correlation of \( r = .46 \) between the PRQ82 and the Profile of Mood States (POMS; McNair, 1971). The strength and direction of these correlations were consistent with the conceptualization of social support and were related to, but different from, these mental health constructs.

Construct validation was also conducted for the PRQ85. For a sample of 100 adults (mean age: 33 years), the PRQ85 was correlated with the Beck Depression Scale, the State-Trait Anxiety Scale, and the Eysenck Personality Inventory (Eysenck & Eysenck, 1968). Social support was found to be moderately associated with anxiety, depression, neuroticism, and extroversion. The correlation for the PRQ85 and depression was \( r = -.42 \), for anxiety \( r = -.37 \), for neuroticism \( r = -.28 \), and for extroversion \( r = .32 \). The direction and strength of the correlations substantiated construct validity.

To begin the process of assessing validity for the PRQ2000, available data sets, with comparable mental health measures, were examined. For the two developmental sub-samples, a depression scale, the Center for Epidemiologic Studies Depression Scale (CES-D; Devine & Orme, 1985), was available. For sub-sample 1, the correlation between the PRQ2000 and the CES-D was \( r = -.51 (p < .001) \) and for sub-sample 2 it was \( r = -.44 (p < .001) \). These sub-samples were derived from the fifth data collection point of the Family Health Study. The data from T2 were used to further the initial validity examination. For this sample of 1,199 adults living with a long-term illness, the correlation was \( r = -.46 (p < .001) \). Several additional data sets were available and appropriate for examination. First, for the Montana Family Cancer Project, a sample of 555 rural individuals with cancer and their caregivers, the correlation between the PRQ2000 and the CES-D was \( r = -.44 (p < .001) \). Second, from the Montana Family Survey, a sample of 304 rural dwellers, the correlation between the PRQ2000 and the CES-D was \( r = -.25 (p < .001) \). The third data set was from the Montana Cardiac Rehabilitation Project containing a sample of 286 rural dwellers who had experienced a cardiac incident. In this study, the Profile of Mood States (McNair, 1971) was administered, and the correlation with the PRQ2000 was \( r = -.24 (p < .001) \). Based on the divergent validity principle, measures of different constructs should have a low correlation with each other (Waltz, Strickland & Lenz, 1984). This preliminary examination gives evidence of divergent validity. As with the results from the construct validation efforts for the PRQ82 and PRQ85, these preliminary findings for the PRQ2000 again substantiated that social support is related to mental health constructs in the anticipated direction and strength.
CONCLUSIONS AND RECOMMENDATIONS

The more parsimonious PRQ2000 contains 15 items to tap the level of perceived social support and does not contain a section to estimate interpersonal resources. Results of the evaluation of the multidimensionality, using two subsamples of the same data set, did not substantiate the hypothesized five factors developed based on Weiss's (1969, 1974) five dimensions. A 3-factor structure appeared to best describe the underlying dimensions of the scale. In future studies, which have an adequate sample size, the 3-factor solution needs to be further examined. The estimates of internal consistency for the 15-item scale appeared to be as consistently strong as those for the 25-item scale. This will need to be validated each time the PRQ2000 is administered. Preliminary construct validity estimates are similar to those found for the PRQ82 and PRQ85. Extensive research, designed to evaluate the validity of the new scale, is critical. As with the previous versions of the PRQ, the scale is designed for use with English-speaking adults. The appropriateness of the use of the scale with adolescents or with non-English-speaking participants will need to be assessed.

Over the history of the Personal Resource Questionnaire, our philosophy has been that the more use the instrument got, the better. As in the past, the cost of the instrument will be kept low (copying and postage charges only). We continue to encourage researchers to reproduce as many copies as are needed and for educators to share the scale with students. Those willing to send their findings from the use of the scale will enhance our psychometric evaluation efforts. We are currently designing our Web site (www.montana.edu/cweinert) so that the PRQ2000 can be downloaded directly.

REFERENCES


APPENDIX: PERSONAL RESOURCE QUESTIONNAIRE (PRQ2000)

Below are some statements with which some people agree and others disagree. Please read each statement and CIRCLE the response most appropriate for you. There is no right or wrong answer.

1 STRONGLY DISAGREE
2 DISAGREE
3 SOMewhat DISAGREE
4 NEUTRAL
5 SOMEWHAT AGREE
6 AGREE
7 STRONGLY AGREE

Q-1. There is someone I feel close to who makes me feel secure
Q-2. I belong to a group in which I feel important
Q-3. People let me know that I do well at my work (job, homemaking)
Q-4. I have enough contact with the person who makes me feel special
Q-5. I spend time with others who have the same interests that I do
Q-6. Others let me know that they enjoy working with me (job, committees, projects)
Q-7. There are people who are available if I need help over an extended period of time
Q-8. Among my group of friends we do favors for each other
Q-9. I have the opportunity to encourage others to develop their interests and skills
Q-10. I have relatives or friends who will help me out even if I can't pay them back
Q-11. When I am upset, there is someone I can be with who lets me be myself
Q-12. I know that others appreciate me as a person
Q-13. There is someone who loves and cares about me
Q-14. I have people to share social events and fun activities with
Q-15. I have a sense of being needed by another person