PSYCHOLOGICAL AND PHYSICAL WELL-BEING
IN THE ELDERLY:
THE PERCEIVED WELL-BEING SCALE (PWB)

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ABSTRACT
This article describes the development of the Perceived Well-Being Scale (PWB) which allows for separate assessment of psychological and physical well-being. The PWB is a short and convenient instrument applicable to the elderly. Several studies bearing on the psychometric properties and usefulness of the PWB are presented and the implications of the findings are discussed.

Since the pioneering work of Neugarten, Havighurst and Tobin (1961), measures of well-being in the elderly have been of considerable interest to researchers in gerontology and psychology. These measures include life satisfaction indices (Cantril, 1965; Neugarten et al. 1961; Spreitzer and Snyder, 1974), morale scales (Kutner, Fanshel, Togo, and Langner, 1956; Lawton, 1975) and scales of happiness (Bradburn, 1969; Kozma and Stones, 1980). A comprehensive review of the literature has revealed moderate to high intercorrelations among these measures, suggestive of a single global construct which may be labelled subjective well-being (Larson, 1978; Lohmann, 1980).

A closer inspection of the content of some of the widely used subjective or perceived well-being scales (e.g., Lawton, 1975; Neugarten et al., 1961; Pierce and Clark, 1973) reveals a smorgasbord of items covering the whole gamut of psychological, physical and sociological well-being (e.g., financial status). Furthermore, the scales make reference to past and future orientations. Thus, a multidimensional and global conception of well-being is evident in most of these scales. Because of their attempts to cover many aspects of well-being, breadth of scope is achieved at the expense of sharpness of focus.

The current trend is to develop more precise measures of well-defined but more limited constructs. For example, in an attempt at conceptual clarification, Kozma and Stones (1978, 1980) focussed on the affective aspect of well-being and developed the Memorial University of Newfoundland Scale of Happiness (MUNSH). It is primarily a composite of items taken from existing life satisfaction and happiness scales on the basis of high correlation with self-appraised happiness ratings. It is an improvement over alternative measures from the standpoint of providing a purer index of psychological well-being.

A parallel line of recent research on well-being focusses on perceived physical health in the elderly. A number of instruments have been developed to measure perceived physical health or physical well-being, but these are primarily of the one item variety (e.g., Cockerham, Sharp, and Wilcox, 1983; Fillenbaum, 1979; Garrity, Somes, and Marx, 1978; Maddox and Douglas, 1973; Palmore and Luikart, 1972; Tissue, 1972). There is clearly a need to develop a more sophisticated measure of perceived health. Most of the research on perceived health in

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the elderly is on the predictive relationship between perceived health and life satisfaction (Braun, 1977; Dickie, Ludwig and Blauw, 1979; Larson, 1978; Petrus, 1980; Quinn, 1980; Research and Forecasts, 1980). There is an inherent confound in many of these studies because, as stated earlier, some life satisfaction measures also contain items that assess perceived physical well-being. One of the strategies to reduce this confound is to use relatively objective measures of health status as the predictor and to clearly distinguish the psychological and physical components of perceived well-being as the criterion measure. This will allow an assessment of the differential impact of health status on psychological, physical, and overall perceived well-being.

The above review of the literature shows that most investigators recognize the two major components of perceived well-being—psychological and physical. It is also clear that recent developments have resulted in separate scales of perceived psychological and physical well-being. This trend towards developing separate scales of the two components is at once its strength and its weakness. Although it results in a purer index of either psychological or physical well-being, it no longer provides a measure of one's general well-being that takes into account both of these components.

Consistent with this current trend, we have maintained a sharp distinction between psychological and physical well-being and constructed two rigorously validated subscales to measure these components in the present Perceived Well-Being Scale (PWB). However, improving on the current developments, we are able to maintain a sharp focus without narrowing its scope, because the composite score of the two subscales provide an index of one's overall perceived well-being.

We define psychological well-being as the presence of positive emotions such as happiness, contentment, joy, and peace of mind and the absence of negative emotions such as fear, anxiety, and depression. Physical well-being is defined as self-rated physical health and vitality coupled with perceived absence of physical discomforts. General well-being is defined as the composite of psychological and physical well-being. It is predicted that the physical and psychological components will both contribute substantially to the PWB score, but they will correlate only moderately with each other.

Our approach to the measurement of perceived well-being has several advantages over existing scales. Firstly, it is better focussed than the earlier multidimensional life satisfaction measures in that it is based on only two clearly defined dimensions. Secondly, it is more global than the recent single factor well-being scales in that it provides an index of one's overall perceived well-being while permitting independent assessments of both psychological and physical well-being. Thirdly, since the two subscales have a common response format and are validated on the same sample of elderly, they allow us to assess the relative contribution of the two components to overall well-being and their interactions. Finally, it allows us to identify unique correlates of the subscales as well as the global index.

**Development of the PWB**

The PWB is a 14 item measure of psychological, physical, and general well-being. Six items measure psychological well-being and eight items measure physical well-being. The composite set of items is an index of general well-being. Respondents rate each item on a 7-point strongly agree to strongly disagree Likert scale. A score of 7 on each item reflects a high level of well-being. The possible range of scores is 6 to 42 for psychological well-being; 8 to 56 for physical well-being; and 14 to 98 for general well-being.

In the initial construction of the PWB, the authors generated a pool of 72 items judged to measure psychological and physical well-being. Twenty psychology faculty and students were asked to indicate whether an item
reflected psychological or physical well-being and to comment on the clarity of each statement. All items exceeding 70% agreement among the judges were retained. Logical considerations and suggestions from the judges led to a further screening of items for redundancy and ambiguity, resulting in a 32 item scale.

The 32 item 7-point PWB was administered to a sample of 80 community and institutionalized elderly (age range 61-93 years). Eleven non-contributing items were eliminated following item analysis. The remaining 21 items were factor analyzed with varimax rotation to simple structure. A three factor solution emerged accounting for 50.2% of the variance. Factor I, labelled Psychological Well-Being, accounted for 27.3% of the variance; 10 items of a psychological nature loaded substantially on this factor. Factor II, labelled Physical Well-Being, accounted for 11.6% of the variance; 9 items of a physical nature loaded on this factor. The third factor was found to be a mixture of both psychological and physical items. In all three factors, some items shared variance with one or two other factors. By eliminating the third factor, which did not make an independent contribution to the PWB scale, and by removing items that did not load uniquely on any one factor, we reduced the scale to 14 items.

We then administered the 14 item 7-point PWB to a combined sample of 238 community and institution elderly. The responses were subjected to principal components factor analysis with varimax rotation of all factors with eigenvalues greater than unity. The resulting factor structure is presented in Table 1.

Two meaningful factors emerged, accounting for 45.5% of the variance. Factor I (32.1% of the variance) contained high loadings on items measuring psychological well-being. Factor II (13.4% of the variance) was defined by high loadings on the physical well-being items. These two factors are defined by the same items as the first two factors in the 80-subject sample. The items identified as loading substantially on each factor were given unit weights; raw scores were summed to generate factor scores. All reliability and validity data to be reported here are based on the factor scores of the 14-item PWB scale.

Reliability of the PWB
The internal consistency of each dimension of the PWB was computed for the sample of 238 elderly by means of Armor's Theta (1974). Theta coefficients provide an optimal reliability estimate (each item is differentially weighted) for factor scores based on principal component analysis. Theta coefficients of .82 and .78 were obtained for the psychological and physical well-being dimensions, respectively. Internal consistency of the overall well-being index reached .91.

An index of the test-retest reliability of the PWB was obtained in a study of 34 elderly following a two-year time interval. The stability coefficients were .79 ($p < .001$) for psychological well-being, .65 ($p < .001$) for physical well-being; and .78 ($p < .001$) for general well-being. These results provide strong support for the internal consistency and temporal stability of perceived well-being in diverse groups of elderly. Only two other studies to date have provided evidence of long-term temporal stability of the well-being construct. Palmore and Kivett (1977) found life satisfaction to remain stable over a four-year period; Kozma and Stones (1983) found happiness to remain stable over 18 months.

Empirical Validity
We expect our PWB scale to correlate substantially with a number of psychological and health-related variables. For example, the importance of hope or personal optimism to well-being has been widely recognized (Lifton, 1979; Reker and Wong, in press; Stotland, 1969; Tiger, 1979). Hopelessness, on the other hand, has been linked to depression and suicide (Beck, Weissman,
TABLE 1

Factor structure of the 14-item Perceived Well-Being Scale

<table>
<thead>
<tr>
<th>Psychological Well-Being</th>
<th>Factor loadingsᵃ</th>
<th>Factor II</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. No one really cares whether I am dead or alive</td>
<td>.49</td>
<td>.03</td>
</tr>
<tr>
<td>5. I am often bored</td>
<td>.59</td>
<td>.35</td>
</tr>
<tr>
<td>7. It is exciting to be alive</td>
<td>.81</td>
<td>.16</td>
</tr>
<tr>
<td>8. Sometimes I wish that I never wake up</td>
<td>.78</td>
<td>.10</td>
</tr>
<tr>
<td>10. I feel that life is worth living</td>
<td>.82</td>
<td>.14</td>
</tr>
<tr>
<td>12. I don’t seem to care about what happens to me</td>
<td>.70</td>
<td>.17</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical Well-Being</th>
<th>Factor loadingsᵃ</th>
<th>Factor II</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. I don’t have many physical complaints.</td>
<td>.17</td>
<td>.56</td>
</tr>
<tr>
<td>3. I don’t think that I have a heart condition</td>
<td>-.03</td>
<td>.58</td>
</tr>
<tr>
<td>4. I have a good appetite for food</td>
<td>.23</td>
<td>.45</td>
</tr>
<tr>
<td>6. I have aches and pains</td>
<td>-.06</td>
<td>.66</td>
</tr>
<tr>
<td>9. I am in good shape physically</td>
<td>.21</td>
<td>.70</td>
</tr>
<tr>
<td>11. I think my health is deteriorating.</td>
<td>.21</td>
<td>.64</td>
</tr>
<tr>
<td>13. I don’t get tired very easily</td>
<td>.14</td>
<td>.63</td>
</tr>
<tr>
<td>14. I can stand a fair amount of physical strain</td>
<td>.24</td>
<td>.61</td>
</tr>
</tbody>
</table>

Eigenvalues
- Factor I: 4.50
- Factor II: 1.90
Percent variance
- Factor I: 32.10
- Factor II: 13.40

ᵃloadings > .40 are underscored
Lester and Trexler, 1974; Farber, 1967). It is hypothesized that the PWB will correlate positively with personal optimism and negatively with Beck’s (1967) Depression Scale. There is also some evidence to suggest that commitment is importantly related to adjustment in old age (Schonfield, 1973) and to higher life satisfaction among institutionalized and noninstitutionalized elderly (Dickie, Ludwig and Blauw, 1979). In the present study, commitment defined as the amount of time and energy that a person is willing to commit to life events such as a job, family, friends, leisure, religion, etc. was measured. A positive correlation between present commitment and PWB is predicted.

Prior research has shown that physical health status predicts life satisfaction (Larson, 1978). It is our contention that physical health status primarily predicts perceived physical well-being because this perception should be more closely linked to one’s actual physical condition. Perceived psychological well-being, on the other hand, should be less dependent on physical health status than perceived physical well-being. For example, a person with a happy disposition may enjoy a fair amount of psychological well-being, even though he/she has a number of physical symptoms. If one’s happiness is relatively independent of physical symptoms, then it follows that the relationship between physical symptoms and perceived psychological well-being will be low or non-significant.

Since psychological and physical well-being are confounded in earlier life satisfaction indices, it is not possible to assess whether the established association between health and life satisfaction is primarily due to items that measure perceived physical well-being. In our PWB scale, we predict a significant relationship between self-rated physical symptoms and general well-being, but more importantly, we predict that most of the variance will be shared between physical symptoms and perceived physical well-being.

Although both the psychological and physical subscales of the PWB are expected to correlate with happiness, personal optimism, depression, and commitment, it is predicted that the magnitude of correlations will be higher for the psychological well-being component because all of these measures are primarily indices of different aspects of psychological well-being. Confirmation of the above predictions will provide predictive and concurrent validity for the two subscales of the PWB.

A useful measure of physical and psychological well-being should discriminate reliably between community and institutionalized elderly. Institutionalization involves not only relocation and the severing of social ties, but also a change in diet, living conditions, and loss of autonomy. Numerous studies (e.g., Carp, 1976; Lawton, 1977; Tobin and Lieberman, 1976) have reported declines in mental and physical health after only a few months of institutional life. A higher mortality rate has been reported to occur in the elderly within the first year of institutionalization (Rowland, 1977). Residents in nursing homes tend to score lower in personal and social adjustment than elderly persons living in the community (Abdo, Dills, Sheeiman, and Yanish, 1973). These institutional effects could be due to the stress of environmental change; exposure to negative aspects of the institutional environment; or the self-selection of high risk elderly who require institutional care (Kasl and Rosenfield, 1980). Given these documented differences, it is predicted that psychological well-being, physical well-being, and the general well-being index will reliably discriminate between community and institutionalized elderly.

Samples of community (N=20) and institutional (N=24) elderly (age range 70–93 years) served as subjects for the validity phase of our study. The PWB, the MUNSH (Kozma and Stones, 1980), Beck’s Depression Scale (Beck, 1967), our Personal Optimism Scale (POS), our Commitment to Life Events Survey (CLES), and a physical
symptom checklist adapted from the OARS (Pfeiffer, 1978) were administrated to the elderly in two sessions.

The MUNSH has been shown to be a valid and reliable measure of happiness defined as the balance between equally weighted positive and negative feeling states (Kozma and Stones, 1980). In this study, a constant of 25 was added to each MUNSH score to avoid negative balance values. The Depression Scale has been shown to be a valid and reliable measure of depression and hopelessness (Beck, 1967).

The CLES and the POS were constructed by the authors. The CLES is a measure of the number of life events an individual is currently committed to and the extent of commitment rated on a 5-point scale (not at all to very highly committed). The POS is a measure of the number of desirable outcomes or events an individual looks forward to and the strength of expectancy that these outcomes will be realized. Expectancy is rated on a 5-point scale from not confident at all to extremely confident. The reader is referred to Reker and Wong (in press) for more details on the POS. For both POS and CLES measures, the total score for each subject is the number of events weighted by their respective ratings.

A self-rated physical symptom measure described by Pfeiffer (1978) was adapted and used to obtain information on the presence or absence of 26 illnesses commonly encountered by the elderly. It is a more objective measure than perceived physical well-being because the presence or absence of physical symptoms is less likely to be coloured by one’s attitudes or mood states than the perception of how well one is physically. This measure will serve as a relatively objective index of one’s actual health status.

The correlations of the subscales of the PWB with the validity measures are presented in Table 2. As predicted, general well-being is correlated positively with happiness, present commitment, personal optimism, and negatively with depression and physical symptoms. In addition, both the psychological and physical well-being components of the PWB correlated significantly with happiness, present commitment and depression. Only the psychological well-being component correlated positively with personal optimism. Overall, the magnitude of the correlations are consistently higher for the psychological component, as predicted. Of note is the rather high correlation between perceived physical well-being and happiness. Perceived physical well-being, as measured by our scale, is a subjective perception. As such, it can be easily coloured by one’s mood state. For example, a person who is in an euphoric state will tend to see everything in a positive light. Therefore, the high correlation between perceived physical well-being and happiness is not unexpected.

Finally, as predicted, self-rated physical symptoms correlated significantly with general and physical well-being, but did not correlate with psychological well-being. The relationship between physical symptoms and perceived physical well-being accounted for 16 per cent of the variance, whereas physical symptoms and perceived psychological well-being shared less than 1 per cent of the variance. This finding would suggest that the relationships between physical health status and life satisfaction reported in the literature are primarily due to the inclusion of physical well-being items in life satisfaction measures. Attempts by researchers to isolate these items from the psychological well-being items may lead to results similar to ours.

The psychological and physical dimensions contribute significantly to the overall PWB scale ($r_s = .74$ and .88, respectively). Furthermore, these dimensions are themselves only moderately related ($r = .32$), sharing less than 11% of the variance. These findings indicate that there is a linkage between the two components, but they both make a unique and substantial contribution to the overall index.

In a replication study, a convenience sample of 33 community elderly were ad-
TABLE 2

Correlations between Perceived Well-Being, Happiness, Present Commitment, Depression, Personal Optimism, and Physical Symptoms

<table>
<thead>
<tr>
<th>Variable</th>
<th>Psychological</th>
<th>Physical</th>
<th>General</th>
</tr>
</thead>
<tbody>
<tr>
<td>Happiness (MUNSH)</td>
<td>.61***</td>
<td>.54***</td>
<td>.70***</td>
</tr>
<tr>
<td>Present Commitment</td>
<td>.42**</td>
<td>.30*</td>
<td>.42**</td>
</tr>
<tr>
<td>Beck Depression</td>
<td>-.55***</td>
<td>-.37**</td>
<td>-.54***</td>
</tr>
<tr>
<td>Personal Optimism</td>
<td>.53***</td>
<td>.18</td>
<td>.40**</td>
</tr>
<tr>
<td>Physical Symptoms</td>
<td>.06</td>
<td>-.40**</td>
<td>-.25**</td>
</tr>
</tbody>
</table>

N = 44

*** p < .001
** p < .01
* p < .05

ministered the PWB and the MUNSH. Happiness correlated significantly with psychological \( r = .69, p < .001 \), physical \( r = .52, p < .001 \), and general \( r = .70, p < .001 \) well-being.

Group Differences. The results of the comparison of community and institution elderly on the PWB are presented in Table 3.

As predicted, significant differences were found for psychological well-being \( t(42) = 3.27, p < .01 \); physical well-being \( t(42) = 2.09, p < .05 \); and general well-being \( t(42) = 3.12, p < .01 \). Inspection of the means in Table 3 shows that community elderly rated their psychological, physical, and general well-being significantly higher compared to institution elderly. These findings provide additional evidence for the construct validity of the PWB.

Conclusion

The need for an instrument that is broad in scope and sharp in focus has led to the development of the PWB. Like the earlier life satisfaction measures, the PWB provides an index of one's perceived general well-being. But unlike these earlier scales, and consistent with the current emphasis on well-defined constructs, the PWB also offers separate
### TABLE 3

Means and standard deviations for community and institution elderly on the perceived well-being scale

<table>
<thead>
<tr>
<th>Variable</th>
<th>Community (N = 20)</th>
<th>Institution (N = 24)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perceived Well-Being</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychological</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>36.3</td>
<td>31.2</td>
<td>3.27**</td>
</tr>
<tr>
<td>S.D.</td>
<td>1.7</td>
<td>7.3</td>
<td></td>
</tr>
<tr>
<td>Physical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>39.6</td>
<td>34.5</td>
<td>2.09*</td>
</tr>
<tr>
<td>S.D.</td>
<td>7.4</td>
<td>8.6</td>
<td></td>
</tr>
<tr>
<td>General</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>75.9</td>
<td>65.7</td>
<td>3.12**</td>
</tr>
<tr>
<td>S.D.</td>
<td>8.4</td>
<td>12.4</td>
<td></td>
</tr>
</tbody>
</table>

** p < .01  
* p < .05

Assessment of two clearly defined and objectively validated dimensions of well-being—psychological and physical.

The PWB has numerous positive measurement properties. The psychological and physical dimensions show high internal consistency and stability. The validity data presented for the PWB and its subscales are deemed sufficiently high to justify its continued use with the elderly. Furthermore, the PWB holds up remarkably well in our more recent work with the elderly on perceived efficacy of coping behaviour and well-being (Wong and Reker, 1982) and personal optimism, meaningfulness and well-being (Reker and Wong, 1983). In these studies, the PWB is significantly correlated with variables known to affect one’s well-being.

The PWB is a short and convenient measure constructed and validated for use with community and institution elderly. It is brief enough to make it a useful screening device to identify the elderly who are either low or high on the wellness/illness continuum. Its ecological validity makes it a useful instrument in longitudinal and intervention studies, regardless of whether the elderly reside in the community or the institution.

### REFERENCES


RÉSUMÉ

Cet article dépeint le développement de l'Echelle du bien-être perçu (PWB) qui a égard à l'évaluation indépendante du bien-être psychologique et physique. Le PWB est un instrument court et commode applicable aux personnes âgées. Plusieurs études qui ont rapport avec les propriétés psychométriques et l'utilité du PWB sont présentées et les implications des conclusions sont discutées.