Studies on
Psychometric Aspects
Abstract

This study investigated the reliability and factorial validity of the Life Regard Index, a measure of meaning in life. Principal component factor analyses performed on the responses of 122 undergraduate psychology students, gave two factors, fulfillment and framework, confirming the theoretical structure. Alpha estimates of internal consistency of the factor scales ranged from satisfactory to good. Analysis supports the predicted moderate negative correlations with anxiety, hostility and depression and a positive correlation with elation. Discriminant validity was good: the Index discriminated persons who are happy and satisfied with their lives from unhappy and dissatisfied ones. A clear philosophy of life, education and psychological counseling correlated significantly with the degree of meaning in life. The use of the instrument in further research is recommended.

Since Victor Frankl (1946) introduced his logotherapy, the subject of meaning in life has gained growing interest from psychologists. Yet only few empirically minded psychologists have conducted research on the problem of measuring the construct of meaning in life. The Purpose in Life test (Crumbaugh & Maholick, 1964) designed to operationalize Frankl’s concept of “will to meaning” is a rare but well known example of such research efforts. However, despite its widespread use, the validity of this instrument has been questioned (e.g. Garfield, 1973; Braun & Dolmino, 1978; Dyck, 1987). An instrument that seems to be less confounded with a priori conceptions about meaning in life is the Life Regard Index of Battista and Almond (1973). Although this instrument

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is more conceptually sophisticated than the Purpose in Life test, it has not been as extensively studied. Only recently in one study the factorial validity of the Index has been investigated (Chamberlain & Zika, 1988).

Battista and Almond started their study into the term “meaningful life” with two questions: “What is the nature of individuals’ experience of their lives as meaningful?” and “What are the conditions under which individuals will experience their lives as meaningful?” They concluded from literature that, when individuals state that their lives are meaningful, this implies that: (1) they have a framework from which they can see their life within some perspective or context and have derived a set of life-goals, purpose in life or life view from these; (2) they see themselves as having fulfilled or as being in the process of fulfilling their framework or life goals. To avoid confusion and conflicting definitions of the vague term “meaningful life” the term “positive life regard” was used in place.

We started this evaluation of the Index from the viewpoint that a sense of meaningfulness is important to emotional well-being. This notion is central in a number of influential theories (Frankl, 1959; Maddi, 1967; Antonovsky, 1979). The purpose of the present study was to evaluate the reliability and factorial validity of the Index and also to assess construct validity in the relations of the Index with anxious, depressive, hostile and elative moods. These constructs were chosen as operationalizations of (lack) of emotional well-being. Discriminant validity was estimated by comparing the Index with an important dimension of general well-being: life satisfaction and happiness. Finally, the concurrent validity was assessed by comparing the Framework scale with presence and significance of philosophy of life. The hypotheses were that (1) the Index will show negative but not too high correlations with anxiety, hostility and depression and a positive correlation with elation, (2) the Index will distinguish people who regard themselves as happy and find high satisfaction in living from persons who are unhappy and are dissatisfied with their lives, (3) persons with a clear philosophy of life (corresponding with that of their family or not) will show higher scores on the framework subscale than people who lack such clear life orientation.
Method

Subjects

The study involved 40 male and 82 female volunteers from 150 participants in a university course in psychology, the response being 81%. Subjects were neither paid nor received class credits for participation in this study. The mean age for the group as a whole was 23.3 yr. (SD= 5.1, range 18 to 46 yr.). Forty-five percent of the subjects had previous college or academic education. Most subjects reported having no philosophy of life (59%); (41%) reported having a philosophy of life, varying from christian religion and humanism to some form of secular personal meaning. Of all subjects 25.4% had received psychological counseling in the past. Eight subjects (6.6%) were receiving some form of psychotherapy at the time of the investigation.

Material

We translated the Life Regard Index from English into Dutch with the aid of five independent translators and the versions were then compared. This resulted in one version that was translated into English to detect remaining connotative differences. The format of the original version was altered in a three-point Likert-scale in stead of a five-point scale to avoid the possible effects of extreme response set (Wiggins, 1973). The scale has 28 items and is composed of two subscales: a “Framework Scale” (LRI-Fr) and a “Fulfillment Scale” (LRI-Fu). Each scale has 14 items, half phrased positively (e.g., “I have a very clear idea of what I’d like to do with my life”) and half negatively (e.g. “I don’t really value what I’m doing”). Battista and Almond (1973) reported a test-retest reliability of .94. The correlations of the Framework and Fulfillment scales with the total score were .94 and .93, respectively. The intercorrelation between the subscales was .76. Social desirability accounted for only 4% of the variance.

In addition Visual Analogue Scales were used for measuring momentary emotional well-being. Their format was modeled after the scales used by Teasdale and Fogarty (1979). They consisted of lines 10 cm long, from 0% to 100%, with short opposing statements describing a mood on either side of the scale. Four types of moods were measured: (a) anxiety (e.g. “I feel very tense” and “I feel completely relaxed”); (b) depression (e.g. “I feel very sad” and “I don’t feel sad at all”); (c) hostility (e.g. “I feel very angry” and “I don’t feel angry at all”) and (d) elation (e.g. “I feel very cheerful” and “I don’t feel very cheerful”). Each mood was represented by four scales, since Nunnally (1978) recom
mended the use of several scales to measure one sentiment. Subjects were requested to place a vertical line which corresponded with their mood at that moment. The scale was scored by measuring the length (in mm) from zero to this line and adding these lengths for each separate mood (cf. Albersnagel, Arntz & Gerlsma, 1986).

Life satisfaction and happiness were rated on four-point scales ranging from (1) very satisfied with life or very happy, (2) satisfied or happy, (3) doubtful satisfied or happy, to (4) not that satisfied or happy. We adopted these asymmetric scales because distributions tended to be negatively skewed in the Dutch population (Veenhoven, 1987).

Philosophy of life was operationalized by two questions: (1) “indicate what was the philosophy of life in your family?”, (2) “Is there any philosophy of life that has any significance to you at the moment?”.

In addition, subjects were asked (a) to indicate in order of importance their three most significant meanings in their present life, following the procedure of De Vogler & Ebersole (1980) and (b) to describe periods of meaningfulness and meaninglessness in their life. The qualitative analysis of these data will be reported in a separate study. Finally, all subjects completed a short biographical questionnaire, including questions about previous education, way of living, and previous contact with mental health institutions.

**Procedure**

The tests were distributed in several small groups (N = 12) after a workshop on group dynamics. The instruction was given not to consult one another. Two versions of the Index were randomly distributed: one beginning with five positively phrased items and one with five negatively phrased items. The aim was to control the effects of order and to investigate the possible influence played by mood induction on the scoring of the Index.

**Results**

**Factor structure and reliability**

As the first step, two questions had to be answered: “What is the internal structure of the Index?” (structural analysis) and “How do the individual items relate to this structure?” (item-analysis). The data were therefore subjected to a principal components factor analysis with varimax rotation to simple structure after reframing the negative items into positive ones. This yielded eight factors.
with eigenvalues exceeding unity. Further analysis showed that two factors loaded substantially, with eigenvalues of 6.6 and 2.5, and explained proportions of variance 23.7% and 8.9%, respectively. The two-factor solution, which could be considered as a relatively adequate and conservative representation of the data was rotated to a Varimax criterion for interpretation.

From table 3.1 it can be seen that all but four items load on the respective factors: Factor 1 loads mainly with Fulfillment-items, whereas the content of Factor 2 reflects most of the Framework-items. Furthermore, 15 of the 24 items
meet our criterion of loading .40 to one and less than .30 to the other factor. If we choose a more lenient criterion (.30), 19 items load on the respective factors. The conceptual structure of the scale is supported by the results of this analysis. To investigate the reliability of the factors extracted, Cronbach alpha estimates of internal consistency were computed; these ranged from .86 (Index), and .80 (Fulfillment) to .79 (Framework). Nunnally (1978) considers alphas of this order good within a research context. Pearson correlations were computed as measures of the intercorrelation: scores on Fulfillment and the Index correlated .88, scores on Framework and the Index correlated .87, for scores on the two subscales \( r = .54 \). To investigate the possible influence of rank order effects, the results of the two versions of the LRI were compared by means of a \( t \) test. This showed no significant differences, though there was a trend on fulfillment ( \( t = -1.87, p < .06 \)), suggesting that the mood induction based on the phrasing of the first five items might have had some effect on this subscale.

**Validity**

As can be seen in table 3.2, all correlations are significant ( \( p < .001 \) ) and in the predicted direction, and yet not too high, which confirms Hypothesis 1. An exception is made for the hostility scale that does not correlate with the Fulfillment Scale, the Framework Scale or the Index.

All correlations in table 3.2 attest to the validity of the criterion measures. The intercorrelations between the measures of emotional well-being were also consistent with our expectations: Anxiety correlated positively with Depression (0.68), and Hostility (0.56), and Elation correlated negatively with Anxiety (-0.38), Depression (-0.62), and Hostility (-0.24; \( p < .001 \)).

Subsequently chi-squared tests were computed to detect differences for the remaining variables. No differences were found for the variables of age and sex.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Fulfillment</th>
<th>Framework</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxiety</td>
<td>-.35</td>
<td>-.32</td>
<td>-.37</td>
</tr>
<tr>
<td>Hostility</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-.34</td>
<td>-.26</td>
<td>-.32</td>
</tr>
<tr>
<td>Elation</td>
<td>.33</td>
<td>.28</td>
<td>.33</td>
</tr>
</tbody>
</table>

All correlation coefficients \( p < .001 \)
The number of subjects that were receiving psychotherapy during the period of this study was too small to be included in the analysis. The significant results are shown in table 3.3.

This table shows evidence for construct validity in verification of the prediction that subjects with low meaning in life are more anxious and depressed and less elated than subjects with high meaning in life.

The results further show that (a) persons with high scores on the Index are happier and more satisfied with their lives than those with low Index scores, which confirms Hypothesis 2; and (b) persons with a clear philosophy of life have significantly higher scores on the Framework Scale than those who lack such clear life-orientation, which confirms Hypothesis 3. Significant positive relations were found between previous education and the Index and between psychological counseling in the past and scores on the Fulfillment Scale.

Table 3-3  Values of Chi squared between LRI scales and biographical variables, happiness and life satisfaction.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Fulfillment</th>
<th>Framework</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Education</td>
<td></td>
<td></td>
<td>8.65*</td>
</tr>
<tr>
<td>Philosophy in life (family)</td>
<td>6.64*</td>
<td>11.37‡</td>
<td></td>
</tr>
<tr>
<td>Philosophy in life (current)</td>
<td></td>
<td>7.94†</td>
<td></td>
</tr>
<tr>
<td>Psychological counseling in past</td>
<td>10.10‡</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Happiness</td>
<td>35.93‡</td>
<td>16.74‡</td>
<td>30.23‡</td>
</tr>
<tr>
<td>Life satisfaction</td>
<td>26.37‡</td>
<td>12.23‡</td>
<td>17.65‡</td>
</tr>
</tbody>
</table>

Note: For all the Chi squared analyses, df=2; * p<.05; † p<.01; ‡ p<.001

Discussion

The findings from the present study support the conceptual basis of the Index as constructed by Battista and Almond (1973), with the items of the Fulfillment and Framework Scales generally loading on two different factors, namely, Fulfillment and Framework. The items that do not contribute to this pattern, should be omitted in a revision of the instrument. Fortunately, the intercorrelation between the subscales was lower than in the Battista & Allmond (1973) study (.54 vs. .76). The results show that the Fulfillment-items reflect a more affective pattern, whereas the Framework-items build a cognitive pattern. This fact is consonant with the notion that life meaning can best be regarded as a mul-
tiodimensional construct that has cognitive, affective, and actional components, as Maddi (1967) suggested.

The study offers suggestive evidence that people with high meaning in life are less affected by momentary anxious, depressed or hostile mood disturbances and are more elated than people with low meaning in life. This finding is in line with the results of the study of Zika and Chamberlain (1987) who found that meaning in life consistently predicted positive well-being. But, although it is tempting to assume that positive meaning in life leads to less anxiety, depression, hostility and to more elation, the relationship might also be the other way around. That is: positive emotional well-being may enhance positive meaning in life. Further research is needed to shed more light on this important issue.

The relation between previous education and positive life regard may reflect a sense of professional goal achievement, as only successfully concluded trainings were rated. The significant relation between psychological counseling in the past and fulfillment is interesting, as it suggests that persons who worked on their psychological problems in the past may experience more fulfillment in life than those who have not sought psychological counseling. This finding seems to fit in Crumbaugh’s (1977) hypothesis, that emotional and mental illness tends to destroy meaning and purpose in life and may also increase the need to find meaning. It is also known from both theory (e.g. Frankl, 1959) and research (e.g. Thompson & Janigian, 1988) that misfortune or major traumatic events may initiate a search for meaning as well as for professional guidance. Yet, there is little evidence for the claim that psychotherapy helps people gain more meaning in life, given the absence of a relation between psychological counseling and the Index. The results further point out that meaning can be gained through (a) goal achievement and fulfillment with concurrent experiences of happiness and life satisfaction, which is in accordance with recent research on well-being (e.g. Andrews & McKenel, 1980) and (b) having a clear philosophy or framework, which is in line with Battista and Almond’s theory.

It should be noted that the generalizations of the present findings may be limited because the students in this study might be considered to be a relatively homogeneous sample in their early twenties. The ways in which persons of this age do or do not find meaning in their lives are dissimilar to those of persons in other age groups. As Erik Erikson (1963) theorized, there is a gradual evolution of meanings throughout an individual’s life cycle. The concerns in early adulthood are centered on self as one struggles to establish a stable identity, to
develop intimate relationships, and to achieve a sense of mastery in professional endeavors. These were indeed the meanings given most importance by the present subjects. In order of frequency they mentioned (1) training/education (79%), (2) friends/relationships (56%), and (3) partner/family (45%).

It seems, that the Index, as it was devised as an operationalization of the term “meaningful life”, comes near to the general multidimensional concept of meaning in life. Chamberlain and Zika (1988) concluded that of the three scales they studied (the Purpose in Life test, the Life Regard Index, and the Sense of Coherence Scale) the Purpose in Life test appears to be the most useful as a general measure of meaning in life. But, the inclusion of the important Fulfillment dimension in the Index - left out in the Purpose in Life test - warrants the use of the Life Regard Index in future research. We agree with Battista and Almond that one has a greater sense of meaning in life, if one apart from having a purpose in life perceives oneself as approaching one’s goals at a satisfactory rate. The relevance of a Fulfillment dimension next to a Framework dimension is further underlined by clinical observations that engagement and purposeful activity seem to be the therapeutic answers to meaninglessness, regardless of the latter’s source, which enhances the possibility of one’s completing the patterning of the events of one’s life in some coherent fashion (Yalom, 1980).

However, as Shapiro (1988) points out in his formulation of a two-factor theory on existence, the constructs of purpose and meaning can best be conceived of as coequal with respect to their relevance to existence. The Index and the Purpose in Life test may be viewed as complementary instruments. As the results with the Index are promising, it would be advisable to use it more extensively in empirical studies, especially in combination with more qualitative approaches to meaning in life, such as elaborated by De Vogler and Ebersole (1983).