Self-Esteem and Psychological Distress in Later Life

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The purpose of this article is to examine the relationship between self-esteem and psychological distress in later life. The majority of researchers who have assessed this relationship assume that greater self-esteem is associated with a reduced risk of distress. However, other investigators propose that this relationship may be more complex and that individuals with extremely high as well as extremely low self-esteem are more likely to experience psychological distress than persons with a more moderate sense of self-worth. Findings from a nationwide survey of older adults tend to support the more complex view. It is further hypothesized that people with extremely high self-esteem are at risk because they tend to be isolated from their social network members. This hypothesis is also supported by the data. The implications of the findings are discussed.

A number of researchers maintain that self-esteem is an important coping resource in the stress process (see, for example, Brown & Harris, 1978; Krause, 1987; Pearlin, Menaghan, Lieberman, & Mullan, 1981). Essentially, these investigators argue that individuals with a high sense of self-worth are confident of their ability to confront

problems in life and that this self-assuredness provides the impetus for an active problem-solving approach to resolving stressful circumstances. These active coping efforts are in turn thought to reduce the risk of subsequent psychological distress. In contrast, persons with diminished feelings of self-esteem are believed to lack the motivation and confidence that is necessary to initiate successful coping strategies. Consequently, individuals with a low sense of self-worth are thought to be more likely to experience psychological problems (Brown, 1978; Mechanic, 1972).

Implicit in this viewpoint is the notion that it is always better to have strong feelings of self-worth and that the persons with the lowest risk of experiencing psychological distress are those individuals with the highest sense of self-esteem. Although this perspective clearly represents the prevailing view in the literature, a small but significant number of researchers have suggested that the relationship between self-esteem and psychological distress may be more complex and that there may be a nonlinear (i.e., curvilinear) relationship between these constructs (Block & Thomas, 1955; Harder, 1984; Karmis & Karmis, 1981; Robson, 1988). More specifically, these investigators maintain that individuals with extremely high—as well as those with extremely low—self-esteem are at the greatest risk of suffering from psychological distress, whereas persons with a more moderate sense of self-worth are most likely to enjoy better mental health. The purpose of the present study is to examine this alternative specification of the relationship between self-esteem and psychological distress in a sample of older adults.

The alternative or nonlinear formulation proposed by Harder (1984) and others has important implications for the specification of developmental theories on aging and for the way in which interventions with older adults are designed. For example, Peck (1968) and Havighurst (1972) maintained that a central developmental task in later life involves the transition from paid employment to retirement. During this time, elderly people are thought to undergo a major redefinition or reappraisal of their personal worth that requires them to identify sources of self-esteem beyond their previous occupations. Older adults who are confronted by chronic illness or who experience

the death of a spouse are also thought to undergo a similar reappraisal process (Havighurst, 1972). These developmental theories assume implicitly that individuals who have made this transition successfully are those persons with the highest sense of self-worth. However, if the alternative hypothesis introduced above is correct, then those older adults with the highest sense of self-esteem may not necessarily have made the most successful life transitions.

A number of interventions have focused, at least in part, on bolstering the self-esteem of elderly study participants (e.g., Andersson, 1985; Barrett, 1978; Stein, Linn, & Weiner, 1981). This literature implies that interventions should be targeted only at older adults with low feelings of self-worth and that the goal of the intervention program should be to raise self-esteem as much as possible. However, if there is a nonlinear relationship between self-esteem and psychological distress, then intervention strategies may have to be modified in at least two ways. First, older adults with an extremely high sense of self-worth should be included in the target group along with elderly people with low self-esteem. In addition, the goal of the intervention might be modified to encourage moderate, but not extremely high, feelings of self-worth.

The discussion that follows is divided into four sections. First, the theoretical rationale for specifying a nonlinear relationship between self-esteem and psychological distress is discussed in greater detail. Following this, issues in the estimation of nonlinear relationships are reviewed. Next, the sample and study measures are described briefly. Finally, the alternative specification proposed above is evaluated empirically with data provided by elderly participants in a nationwide survey.

Linking Self-Esteem and Psychological Distress

As discussed above, some researchers believe that individuals with either extremely high or extremely low feelings of self-worth are likely to experience psychological distress. Although the rationale for linking diminished feelings of self-esteem with greater psychological disorder has already been examined, it may be less evident why

individuals with high self-esteem might also be at risk. There are at least two plausible theoretical explanations in the literature for this phenomenon. The first, provided by Harder (1984), is based on psychological studies of self-esteem that have been conducted in the general population. The second explanation comes from clinical psychiatric research on narcissistic personality styles. These theoretical perspectives are described briefly below.

According to Harder (1984), individuals with extremely high feelings of self-worth exhibit defensively high self-esteem, which is defined as a conscious or exaggerated feeling of personal worth that is used to avoid an unconscious or less conscious sense of self-regard (see also Silber & Tippett, 1965). Harder (1984) suggested that persons with defensively high self-esteem are arrogant, aggressive, and that they maintain a haughty sense of superiority to others. It is important for the purposes of the present study to note that individuals with extremely high self-esteem are withdrawn socially because contact with others may challenge their inflated self-images. This suggests that the risk of developing symptoms of psychological distress may be especially great when isolation from others is coupled with the defensive characteristics described above.

The psychiatric literature on narcissistic personality styles provides another potentially useful explanation for the link between high self-esteem and psychological distress. Although there is considerable debate on the nature and origin of narcissism (Teicholz, 1978), a recent paper by Glassman (1988) provides a lucid discussion that is especially useful for the purposes of this study.

According to Glassman (1988), the origin of the narcissistic personality style may be traced to the interface between personality development and early relationships between parents and their children. Psychiatrists divide the personality into a number of components including actual and ideal self-representations. Parents are thought to play a major role in the development of a healthy differentiation between these actual and ideal self-views. This is accomplished in part by the emergence of an empathic relationship between parent and child. However, for a variety of reasons, a healthy parent-child rela-

tionship may fail to develop, and the child's need for parental empathy may become thwarted and frustrated. Consequently, the actual and ideal self-representations may become fused, and the child may subsequently develop a grandiose sense of self that emerges as a defensive reaction against these painful and frustrating experiences.

It is especially important to note that the narcissistic personality style has been linked to a number of constructs that are examined in the present study. More specifically, research suggests that compared to persons with relatively healthy personality development, individuals with narcissistic tendencies report elevated feelings of self-worth (Glassman, 1988) as well as more symptoms of psychological distress (Mollon & Parry, 1984). In addition, research with older adults indicates that persons with narcissistic personality styles tend to be more isolated from their social network members (Andersson, Mullins, & Johnson, 1987).

Taken together, the theoretical perspectives provided by Harder (1984) and Glassman (1988) suggest that there may be a nonlinear relationship between self-esteem and psychological distress. This relationship is depicted graphically in Figure 1. As this diagram shows, psychological distress scores are high for individuals with diminished feelings of self-worth. However, psychological distress scores begin to decline as self-esteem starts to rise. Psychological distress continues to diminish until a point is reached that corresponds to extremely high feelings of self-worth. Beyond this threshold, increments in self-esteem are associated with increased psychological distress.

To assess the practical implications of the nonlinear hypothesis fully, it is important to determine where the low point occurs in the curve shown in Figure 1. If, for example, the threshold point involves self-esteem scores that are so high that only a few individuals are at risk, then the nonlinear hypothesis has little practical value for planning and evaluating mental health interventions for the elderly. If, on the other hand, a sizable number of persons are found to be at risk, then researchers would have a much more compelling reason for applying the views of Harder (1984) and Glassman (1988) in mental health treatment settings.
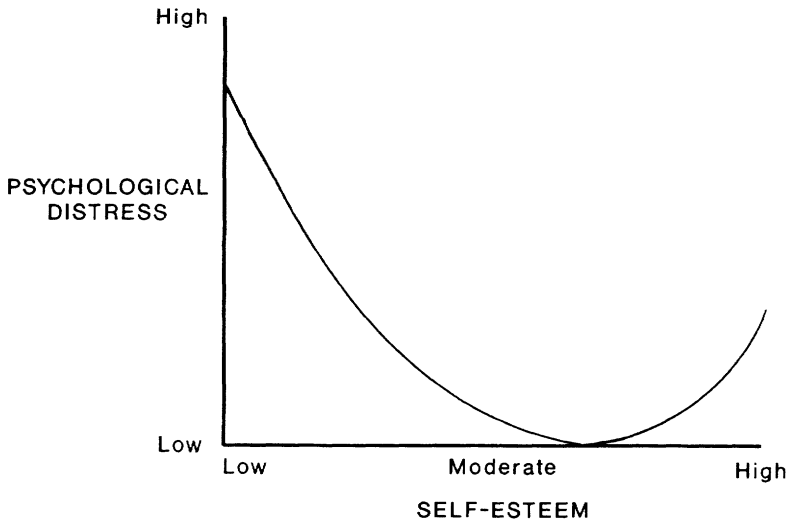
Figure 1. The proposed nonlinear relationship between self-esteem and psychological distress.

Estimating Nonlinear Theoretical Formulations

Special statistical procedures are needed to assess the nonlinear relationship depicted in Figure 1. This hypothesis is tested in the present study with the following ordinary least squares multiple regression equation:

$$D = a + b_1 SE + b_2 SE^2 + \Sigma c_i Z_i + e \tag{1}$$

where D denotes psychological distress, SE represents self-esteem, SE^2 is a quadratic term formed by squaring self-esteem scores (this captures the nonlinear effect), Z_i stands for control variables (to be discussed below), and e is a disturbance term. Finally, a represents the intercept and b_i and c_i are unstandardized regression coefficients. It should be emphasized that Equation 1 is estimated in a hierarchical fashion, where SE and the control variables (i.e., Z_i) are entered in the first step followed by the quadratic term (SE^2) in the second step.

If the analyses reveal that the quadratic term is statistically significant, then the sign of the coefficient represented by b_2 becomes important for determining whether the findings support the nonlinear hypothesis described above. If the sign of b_2 is positive, then the regression line will be concave upwards, and it will take the general form shown in Figure 1. Only under these circumstances would the hypothesis proposed by Harder (1984) and Glassman (1988) be supported by the data.

Assuming that the quadratic term is found to be statistically significant, then an additional series of computations is needed to further clarify the nature of the relationship between self-esteem and psychological distress. When the quadratic term is significant, it is not possible to interpret the coefficient for SE independently of the coefficient associated with SE^2. Instead, as Stolzenberg (1980) shows, these estimates must be considered simultaneously through the application of the following formula:

$$\partial D / \partial SE = b_1 + 2b_2(SE) \qquad [2]$$

where D, SE, and the b_i are defined as in Equation 1 and ∂ represents a partial derivative. As Equation 2 reveals, the slope representing the impact of self-worth on psychological distress will vary depending on the specific self-esteem score. Technically, a separate slope could be computed for each self-esteem value. However, we will merely illustrate the differential impact of self-esteem on distress at the following selected values: the lowest observed self-esteem score, the mean self-worth value, minus one and plus one standard deviation from the mean self-esteem score, and the highest self-esteem value.

Earlier, it was argued that it is important to identify the lowest point in the curve shown in Figure 1 so that the number of older adults who are actually suffering from the effects of excessively high self-esteem can be determined. This point can be identified with a formula provided by Cohen and Cohen (1983). The threshold point where increased self-esteem is associated with an elevated risk of psychological distress (SE_t) is determined by

$$SE_t = -b_1 / 2b_2 \qquad [3]$$

where b_1 and b_2 are defined as in Equation 1.

According to the theoretical rationale provided earlier, individuals with defensively high self-esteem may become isolated from their significant others. The relationship between self-esteem and social isolation will also be tested in the analyses presented below. If the observations of Harder (1984) are correct, then the relationship between these constructs should also be nonlinear and take the general form depicted by the regression line shown in Figure 1. To evaluate this hypothesis fully, the relationship between self-esteem and social isolation will be estimated with the formulas provided above in Equations 1 through 3.

Methods

SAMPLE

The data used in this study come from the 1978 Quality of Life Survey conducted by the University of Michigan's Survey Research Center. During the summer of 1978, face-to-face interviews were conducted with a representative nationwide sample of 3,692 individuals who were 18 years of age or older. The overall response rate was 76%. The data used in the analyses presented below are from the responses of those persons who were 60 years of age or older at the time of the interview (N = 922). Of this group, complete data were available for 825 older adults (90%).

The average age of the study participants in the analyses presented below is 69.2 years (SD = 7.2 years). Women composed 62% of the sample. Finally, the respondents reported having completed an average of 10.3 years of education (SD = 3.5 years).

MEASURES

Table 1 contains a listing of the survey items used in this study. In addition, this table also provides some preliminary descriptive information that is helpful for determining the distributions of the composite measures. A brief description of the survey items is provided below.

Table 1
Study Measures

Item descriptions	Scale		
	Mean	Standard deviation	Range
Psychological distress[a]	1.110	1.345	0—5
During the past few weeks have you ever			
1. felt so restless that you couldn't sit long in a chair?			
2. felt very lonely or remote from other people?			
3. felt bored?			
4. felt depressed or very unhappy?			
5. felt upset because someone criticized you?			
Self-esteem	16.659	2.844	2—21
1. In general how close would you say you come to being the kind of person you would like to be?[b]			
2. Considering everything, how satisfied or dissatisfied would you say you are with yourself as a person?[c]			
3. What is your overall satisfaction with yourself as a person?[d]			
Social isolation[a]	.371	.590	0—2
1. *R* has no one to call on for advice.			
2. *R* has no one to count on in times of trouble.			

a. These items were scored in the following manner (coding in parentheses): *yes* (1); *no* (2).
b. This item was scored in the following manner: *very close* (4); *fairly close* (3); *not too close* (2); *not at all close* (1).
c. This item was scored on a scale ranging from *very dissatisfied* (1) to *very satisfied* (7).
d. This item was scored on a scale ranging from *not at all satisfied* (0) to *very satisfied* (100). The scores on this item were divided by 10 to make the metric of this indicator comparable with that of the other self-esteem items.

Psychological distress. Psychological distress is measured with the five negatively keyed items in Bradburn's Affect Balance Scale (Bradburn, 1969). These indicators are scored in a binary (yes/no) format. A high score on this subscale denotes more psychological distress.

The internal consistency reliability estimate for this brief composite is .576. This is considered relatively low by most standards. However, two factors must be kept in mind when the size of this coefficient is evaluated. First, as Novick and Lewis (1967) demonstrated, Cronbach's alpha provides a lower bound or conservative estimate of the true

reliability of a scale. In addition, potential problems can arise because the alpha value reported above was computed with Pearson correlation coefficients. As Cohen and Cohen (1983) pointed out, it may not be appropriate to use Pearson correlation coefficients when working with binary or dichotomous measures, especially when the binary measures are skewed (as they are in this study; see Table 1). Under these circumstances, the maximum value that the correlation coefficient can attain will be restricted, resulting in a lower reliability estimate.

Self-esteem. Returning to Table 1, feelings of self-worth are assessed with three items that measure global or general feelings of self-esteem. These indicators were developed especially for this survey. A high score on this index denotes greater self-esteem. The internal consistency reliability estimate for this composite is .682.

It might be helpful if some additional information about the third self-esteem indicator is provided. As shown in Table 1, this item asks respondents if they are satisfied with themselves as persons. A question might be raised concerning the basis for this evaluation. One might argue, for example, that some answers reflect respondents' assessments of their physical health status but other responses might be based on satisfaction with some other life domain, such as marital relations. This is not likely to have occurred in the present study because the item contained in Table 1 was presented to the study participants immediately after they had answered a series of items assessing their level of satisfaction in fifteen areas, including health, marriage, and finances. Given this context, the item listed in Table 1 was intended to refer to overall or global feelings of satisfaction or worth.

Social isolation. The lack of close social relationships is assessed in this study with a brief composite that was formed by summing two binary measures. These measures identify study participants who have no one to turn to in times of trouble as well as those respondents who have no one with whom they feel comfortable when discussing private matters. A high score on this index represents greater social isolation.

Demographic control variables. Statistical controls were established in the analyses presented below for the effects of three demo-

graphic variables (age, sex, and education). Age was scored in a continuous format; gender was assessed with a binary variable (1 = males; 0 = females); and education was scored as a continuous measure reflecting the total number of years of completed education.

Results

SELF-ESTEEM AND PSYCHOLOGICAL DISTRESS

Findings from the second step in the hierarchical regression analysis designed to assess the nonlinear relationship between self-esteem and depressed affect are presented in Table 2. Following the recommendations of Southwood (1978), only unstandardized (i.e., metric) regression coefficients are shown in this table. The origin and metric of the scales used in this study are arbitrary. Southwood (1978) demonstrated that changes in the origins of measures such as these would produce dramatic changes in the values of the standardized estimates, making them meaningless in this circumstance. An example may help to clarify Southwood's point. The measures used in this study are scored in their original metric form (see Table 1 for a listing of these coding procedures). However, there would be a substantial change in the size of the standardized regression estimate associated with the quadratic term if self-esteem scores were recoded so that the scale values were centered on the mean self-esteem value (i.e., raw scores were subtracted from the mean).

The data in Table 2 reveal that the quadratic term for self-esteem is statistically significant, suggesting that feelings of self-worth are related to psychological distress in a nonlinear manner (b = .013; $p <$ .001). As shown in Table 2, the sign of the quadratic term is positive, indicating that the regression line is concave upward (see Figure 1). Consequently, these findings tend to support the hypothesis proposed by Harder (1984) and others.

In the process of examining the coefficient associated with the quadratic term, it may not be evident why a value as small as .013 can be related to psychological distress at the .001 level. This is a function of the fact that this is a metric coefficient and that the range of values for the squared self-esteem scores (i.e., the quadratic term) is quite

Table 2
The Nonlinear Effects of Self-Esteem on Psychological Distress (N = 825)

Independent variables	Unstandardized regression coefficient
Age	−.018*
Sex	.267*
Education	−.062**
Self-esteem	−.490
(Self-esteem)^2	.013**
Multiple R^2	.097

*$p < .01$; **$p < .001$.

large ($\overline{X}$ = 285.61; SD = 89.56). Given this wide range, a one-unit increment in the value of the quadratic term is bound to produce only small changes in distress.

Returning to Table 2, the data reveal that the four constructs in Equation 1 explain 9.7% of the variance in depressed affect scores. These findings suggest that although the variables contained in this model are significantly related to distress, researchers should consider expanding Equation 1 to include other factors, such as stressful life events (for a review of this research, see George, 1989).

As discussed above, the nature of the nonlinear relationship between self-esteem and psychological distress can be clarified by applying Equation 2 to the data provided in Table 2. These computations, which show the effect at selected levels of self-esteem, are presented in Table 3.

The lowest observed value on the self-esteem scale was 2. At this point, increases in feelings of self-worth are associated with a sharp decline in psychological distress (b = −.438). The direction of this relationship is the same at one standard deviation below the mean self-esteem score (−1 SD = 13.815), but the effect is less than one third as strong (b = −.131). The data in Table 3 further reveal that the relationship between self-esteem and psychological distress continues to weaken (b = −.057) as the mean self-worth score is approached ($\overline{X}$ = 16.659). At one standard deviation above the mean self-worth score (+1 SD = 19.503) the direction of the relationship between self-esteem and distress has changed (b = .017), indicating that increments in

Table 3
Computing Changes in Psychological Distress at Selected Levels of Self-Esteem[a]

Level of self-esteem	Level of psychological distress[b]
Lowest observed self-esteem score	−.438
−1 standard deviation from the mean of self-esteem	−.131
At the mean of self-esteem	−.057
+1 standard deviation from the mean of self-esteem	.017
Highest observed self-esteem score	.056

a. Only unstandardized (i.e., metric) coefficients are shown in this table.
b. Estimates computed with formula provided in Equation 2 (see text).

self-worth are associated with increased distress. The change in sign coupled with the fact that the coefficient is relatively small suggests that the threshold point must be somewhere between the mean and one standard deviation above the mean. Finally, the positive relationship between self-esteem and distress intensifies and becomes three times as strong by the time the highest observed self-esteem value (i.e., 21) is reached (b = .056). At this point, increases in self-esteem produce an even greater risk of distress.

Equation 3 was applied to the data in Table 2 to determine the precise location of the threshold point. These additional computations (not shown in Table 3) reveal that self-esteem begins to increase the risk of psychological distress when self-worth scores exceed 18.846. This threshold value is just below one standard deviation above the mean of self-esteem (+1 SD = 19.503). These additional computations serve to confirm the earlier finding that suggests that the sign of the relationship between self-worth and psychological distress changes when self-esteem scores approach one standard deviation above the mean.

Taken together, the analyses reviewed up to this point suggest that initially, individuals with low feelings of self-worth tend to experience higher levels of psychological distress, but that distress begins to diminish as self-esteem scores rise. There are limits, however, to the beneficial effects of self-esteem for older adults: once self-worth scores exceed one standard deviation above the mean, elderly people begin to experience greater psychological distress.

The precise identification of the threshold point is important be-
cause it allows us to estimate the number of elderly people who are at
risk. Because, by definition, 15.87% of the sample have scores greater
than one standard deviation above the mean, we can conclude that at
least 131 of the elderly people in this study have self-esteem scores
that are high enough to promote psychological distress.

SELF-ESTEEM AND SOCIAL ISOLATION

The second goal of this study is to broaden our understanding of
defensively high self-esteem by examining whether there is a nonlin-
ear relationship between self-worth and the lack of intimate social
relationships. The results from the second step of the hierarchical
regression analysis that are designed to test this hypothesis are pre-
sented in Table 4.

As shown in Table 4, the coefficient associated with the quadratic
term is statistically significant, indicating that there is a nonlinear
relationship between feelings of self-worth and social isolation. The
sign of the quadratic term is positive, revealing that the regression line
is concave upwards as shown in Figure 1. This finding further supports
the views of Harder (1984) and indicates that older adults with high
self-esteem as well as those with a low sense of self-worth tend to
experience greater social isolation than do elderly people with mod-
erate feelings of self-esteem.

The data in Table 4 suggest that the independent variables explain
only 3.2% of the variance in social isolation. However, virtually all of
the explained variance can be attributed to self-esteem because it is
the only variable to exert a statistically significant effect on the lack
of close relationships.

The nature of the nonlinear relationship between self-esteem and
the social isolation can be illustrated more clearly by applying Equa-
tion 2 to the data provided in Table 4. The results of these additional
computations are presented in Table 5.

The data in Table 5 reveal that at the lowest observed self-esteem
score, increases in feelings of self-worth are associated with a decline

Table 4
Nonlinear Effects of Self-Esteem on Social Isolation (N = 823)

Independent variables	Unstandardized regression coefficient
Age	.005
Sex	−.077
Education	−.001
Self-esteem	−.170
$(Self\text{-}esteem)^2$	.005**
Multiple R^2	.032

*p < .001.

Table 5
Computing Changes in Social Isolation at Selected Levels of Self-Esteem[a]

Level of self-esteem	Changes in social isolation[b]
Lowest observed self-esteem score	−.150
−1 standard deviation below the mean of self-esteem	−.032
At the mean of self-esteem	−.003
+1 standard deviation above the mean of self-esteem	.024
Highest observed self-esteem score	.040

a. Only unstandardized (i.e., metric) coefficients are shown in this table.
b. Estimates computed with the formula provided in Equation 2 (see text).

in the probability that older study participants will be isolated from their social network members (b = −.150). Social isolation continues to diminish as self-esteem scores approach one standard deviation below the mean, but the relationship between these measures is not as strong (b = −.032). The impact of self-esteem on the lack of close ties continues to weaken as mean levels of self-esteem are reached (b = −.003). The size of the regression coefficient at this point suggests that the regression line is nearly flat and that the threshold must be near this point. The data in Table 5 further reveal that at one standard deviation above the mean, the sign of the relationship has changed (b = .024). At this point, increases in self-esteem tend to promote greater isolation from others. Finally, at the highest observed self-esteem

value, the data suggest that there is an even greater tendency for elderly people to be isolated from their social network members (b = .040).

Applying Equation 3 to the data in Table 4 reveals that the low point on the regression curve occurs when self-esteem scores reach 16.900. This finding corroborates the results in Table 5 which suggest that the threshold point occurs just above the mean self-esteem value (X = 16.661 for the analyses shown in Table 5).

Conclusions

Several researchers have suggested that individuals with high self-esteem as well as persons with low feelings of self-worth have a greater risk of experiencing psychological distress than do people with a more moderate sense of self-esteem. Unfortunately, the majority of studies conducted to test this nonlinear relationship have relied on samples consisting of undergraduate college students (e.g., Block & Thomas, 1955; Harder, 1984; Karmis & Karmis, 1981). The purpose of the present study was to determine whether these findings could be generalized to older adults. The analyses, based on the responses of elderly people who participated in a nationwide survey, tend to support the nonlinear hypothesis proposed by these investigators. In particular, the results of the present study indicate that over 15% of the subjects in this sample of older adults have self-esteem scores high enough to place them at risk of experiencing increased psychological distress.

In addition to evaluating the impact of self-worth on distress, an attempt was made to further explore the phenomenon of defensively high self-esteem by assessing whether older adults with relatively high self-worth tend to be isolated from their social network members. This hypothesis also appears to be supported by the data. Initially, it may appear as though those persons with high self-esteem are socially isolated simply because they feel that they can handle their own problems without assistance from anyone else (e.g., Brown, 1978). After all, there is some evidence that self-reliance and independence are highly valued in later life (see Lee, 1985). However, it should be emphasized that the analyses reviewed earlier indicate that those elderly people with excessively high self-worth are also more likely to experience psychological distress. When viewed from this perspec-

tive, it appears as though the data provide more support for Harder's (1984) hypothesis that older adults with excessively high self-esteem lack close relationships because these contacts may challenge their attempts at self-aggrandizement.

Some researchers suggest that the dilemma created by defensively high self-esteem is in essence a problem in measurement (e.g., see Wells & Marwell, 1976). At the crux of this issue is the problem of how to assess denial. These investigators maintain that an instrument must be developed that can distinguish between individuals with genuinely high feelings of self-worth and persons who hide their true feelings behind the guise of defensively high self-esteem. We believe that such an instrument would indeed be useful, but we know of no rigorous measure able to perform this task. As a result, researchers who continue to rely on standard self-esteem checklists must be aware of the presence and problems created by denial that arises from defensively high self-esteem.

In order to place the findings from this study in a proper context, it is important to review some of the limitations of this research. Four such shortcomings will be discussed briefly below: (a) The first limitation arises from the fact that this is a cross-sectional study; (b) the second involves problems in the measurement of self-esteem; (c) the third drawback is concerned with the effects of measurement error; and (d) the final shortcoming arises from problems in specifying the proper form of the curved regression line.

The data examined in this study are cross-sectional. Consequently, the potential causal ordering among the relationships examined here is made on theoretical considerations alone. For example, we are unable to determine whether changes in self-worth produce subsequent changes in psychological distress or whether low self-esteem is merely a concomitant of psychological distress (for a discussion of this issue, see George, 1989). Longitudinal data are clearly needed so that this and other causal assumptions made in this study can be subjected to rigorous empirical scrutiny.

As discussed earlier, self-esteem is assessed in this study with three general or global items. This measurement strategy has some clear limitations. A number of investigators have argued that self-esteem is a multidimensional phenomenon and that if feelings of self-worth are

to be measured accurately, then researchers must assess these dimensions explicitly (for a review of this research, see Bengtson, Reedy, & Gordon, 1985). Included among these dimensions are feelings of personal competence and feelings of personal virtue or moral worth.

At least two advantages arise from following the recommendations of Bengtson et al. (1985). First, the use of multidimensional measures will help to clarify the meaning and scope of the self-esteem construct. In addition, the use of more comprehensive measures may help to provide greater insight into why high self-esteem may be associated with greater psychological distress.

The effects of random measurement error were not taken into consideration by the statistical estimation procedures used in this study. Unfortunately, a number of investigators have demonstrated convincingly that measurement error can bias regression estimates substantially (e.g., see Kenny & Judd, 1984). As the reliability estimates presented earlier reflect, the self-esteem indicators used in this study contain a significant proportion of error, making it likely that the coefficients provided above are not precise. Although researchers have attempted to confront this problem within the framework of latent variable modeling, a practical solution to the problem of measurement error has yet to be made available to the broader academic community (for a recent example of such efforts, see Hayduk, 1987).

Finally, Equation 1 was designed to test for a nonlinear relationship that takes the form of the curve shown in Figure 1. However, Southwood (1978) showed that this U-shaped curve represents only one of a wide range of forms that can be used to depict nonlinear relationships. For example, the relationship between self-worth and distress could take an L-shaped form, suggesting that once the threshold point is reached, additional increments in self-esteem neither increase nor decrease psychological distress. To the extent that the correctly specified line departs from the form shown in Figure 1, Equation 1 will not fit the data properly, and the resulting parameter estimates will be biased.

If the findings from this study can be replicated under more stringent conditions, then the concept of defensively high self-esteem may have important implications for the targeting, design, and evaluation of mental health intervention programs for the elderly. As discussed

earlier, most interventions place an emphasis on those older adults with low feelings of self-worth. However, if the nonlinear hypothesis is correct, then mental health professionals may wish to expand the scope of these programs to include elderly people with excessively high self-esteem as well.

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