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ABSTRACT

While public opinion associates old age with loneliness, some social scientists argue that emotional responses such as loneliness decline in the later years of life. The purpose of this study was to empirically examine life cycle fluctuations in loneliness. To do so, a meta-analysis of 14 data sets involving over 25,000 respondents was performed. The results showed that loneliness was highest among young adults, declined over midlife, and increased modestly in old age. Methodological cautions are advised in interpreting these findings. Three possible types of explanations for age trends in loneliness include methodological artifacts, analysis of the high or low level of loneliness in specific age groups, and general models of loneliness which incorporate age-related factors. With regard to methodological factors, the possibility of differential volunteering rates exists, as does the question of measurement equivalence across age groups. With regard to age specific explanations, some authors have offered analyses of why adolescents are so prone to loneliness (separation from parents, identity diffusion, excessive rejection). Others have claimed that the declining social ties of the elderly make them susceptible to loneliness. Finally, a model of loneliness has been proposed that uses a single primary factor to explain fluctuations in loneliness in which loneliness results when there is a discrepancy between people's desired and achieved levels of contact. (Author/NB)

# AGE DIFFERENCES IN LONELINESS: A META-ANALYSIS*

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## Abstract

While public opinion associates old age with loneliness, some social scientists argue that emotional responses such as loneliness decline in the later years of life. The purpose of this study was to empirically examine life cycle fluctuations in loneliness. To do so, a meta-analysis of 14 data sets involving over 25,000 respondents was performed. The results showed that loneliness was highest among young adults, declined over mid life, and increased modestly in old age. Methodological cautions in interpreting these findings as well as three possible types of explanations for age trends in loneliness, including Peplau and Perlman's discrepancy model, will be considered.

Loneliness is perceived to be a serious problem for older adults. As Revenson (1986, p. 117) has noted: "The print and entertainment media often portray the elderly as socially isolated and overwhelmingly lonely... Clinicians, too have written of the inevitability and sorrow of loneliness in old age." Not surprisingly, the general public shares this view. In a 1981 survey, 65% of respondents aged 18-64 said they thought loneliness was a "very serious problem for most people over 65" (National Council on the Aging, 1981). Forty five per cent of the seniors in this study concurred in this belief. Thus the loneliness of the elderly is a prevalent stereotype held by younger members of society and by seniors themselves as a self-stereotype.

Paradoxically, not all social scientists share the view that loneliness is a common, distressing phenomenon for older adults. In an article published in 1962, Dean (p. 440) argued that "the capacity to feel emotion declines with age." Since she saw loneliness as an emotion, she inferred people would become less lonely as they got older. More recently, Revenson (1986) has directly challenged popular views on the prevalence of loneliness in old age. She believes that this "myth" has impeded not only our understanding of aging but also the development of appropriate social policies.

The purpose of this project was to address the question: How does loneliness fluctuate as a function of age? To provide an empirically based answer, I undertook a meta-analysis of existing data. This presentation will report my findings and touch briefly on two related topics: a) the methodological limitations of such an analysis and b) possible interpretations of the age trends detected. Thus this presentation complements other recent attempts to place loneliness in a life-span, developmental perspective (Perlman, 1988; Rubenstein & Shaver, 1982b).

## Method

### The Data Sets

To examine age trends in loneliness, I relied on published reports and did secondary analyses of other, accessible data sets. In

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particular, I sought studies in which there were respondents under and over age 65. Studies limited to either pre- or post- retirement aged respondents (see Townsend, 1968, Russell, 1982 and Lowenthal, Thurner, & Chiriboga, 1975) were considered only for ancillary purposes. Identification of the data sets was based on 1) the present author's knowledge of the loneliness literature, 2) consultation with two colleagues familiar with large data sets of potential relevance, and 3) a keyword computer search performed on the index for all the public domain data sets available via the University of British Columbia (UBC) Data Library. In all, fifteen relevant studies were identified. One Northern California principal investigator ignored requests for access to his data set, leaving "fourteen" relevant studies for analysis. Of these, the data from seven studies were taken from published sources or provided by the principal investigator (Andersson, 1982; Dean, 1962; Lewinsohn & Seeley, 1989, Parlee, 1979; Radloff, 1982; Revenson & Johnson, 1984; Rubenstein, Shaver & Peplau, 1979). Data tapes from the remaining seven studies (Austrom & Haywood, 1982; Bradburn, 1969; Kennedy, 1981, 1984; Kennedy & Northcott, 1979; National Council on the Aging, 1974; Turner, 1989) were available for analysis by the present author.[1]

Perhaps reflecting a bias in what the UBC Data Library acquires, five of the seven available data tapes were from studies conducted within Canada. And, undoubtedly there are relevant studies that escaped notice. Nonetheless, I believe the identified studies provide a reasonable starting point for more closely examining the association between loneliness and age.

The samples ranged in size from 208 (Dean, 1962) to 6968 (Austrom & Haywood, 1982). (No sample size was given in either Andersson's [1982] or Rubenstein, Shaver and Peplau's [1979] reports, although in related reports, Rubenstein and Shaver's [1982a] analyses have been based on 3,500 cases.) Many of the investigators used careful sampling techniques to obtain representative samples. Bradburn (1969) had a national, representative sample (N=X,XXX) of Americans. Radloff's analyses were based on representative samples of two areas in the United States (N=2835). Kennedy's annual Edmonton Area Studies each had 400-450 representative adults. Andersson's analysis was based on data collected by Sweden's National Central Bureau of Statistics. The National Council on Aging's Myth and Reality of Aging Study sought a representative sample (N=1500) of US adults aged 18-64 plus an oversampling (N=2400) of Americans over 64. Turner (see Turner & Noh, 1988) obtained a representative sample of disabled adults (N=731) from the 10 counties of southwestern Ontario, and then obtained an equivalent set of non-disabled subjects (N=850) matched on age, sex and area of residence. Lewinsohn (see Lewinsohn, Zeiss, & Duncan, 1989, Samples 1, 3, and 4) invited three sets of community residents in Eugene and Springfield Oregon to participate in questionnaire research. The participants in Study 1 were volunteers recruited from County voter lists, while participants in Studies 3 and 4 were recruited from "a list of licensed drivers 50 years and older" (Lewinsohn et al., 1989, p. 108). Austrom and Haywood (1982), Parlee (1979, N>4,000), Rubenstein et al. and Revenson and Johnson (1984, N=2026) based their studies on readers who voluntarily returned questionnaires published in newspapers or magazines.

The 1981 and 1984 Edmonton Area Studies contained the same loneliness questions. Preliminary age by gender by year of data collection analyses of

1. Analyses of the data from Bradburn study is still in progress and is not included in the preliminary draft of this report but will be included prior to the APA Convention.

variance showed no main or interaction effects due to the year of the study. The data from these two samples were combined, thus providing a larger number of respondents in specific age groups. Similarly, Lewinsohn and Seeley (1989) aggregated their data across all three samples (N=4699).

The extant investigations involved two types of loneliness measures: single items and scales. The most commonly used type of measure was a single "self-labelling" item asking respondents if they were lonely. For instance, in the Myth and Reality of Aging Study, respondents were asked: "We are interested in the way people are feeling these days. Looking at your present life situation, do you feel lonely or remote from other people?" In this survey, respondents simply indicated whether or not they were feeling lonely. Other studies used three and five point response scales. In these studies, respondents answering that they were at least "sometimes" lonely were classified as lonely.

Turning to the second type of measure, scales, Shaver and his associates have typically used the 8-item NYU Scale, while the Edmonton Area Study has used the 4-item short form of the UCLA Loneliness Scale. Most of the NYU items contain references to loneliness (e.g., "How often do you feel lonely?"). The UCLA Scale avoids direct mention of loneliness. Instead, it presents respondents with such items as "No one really knows me well." Two of the Edmonton Area Surveys (1981 and 1984) contained both a self-labelling item and the UCLA Scale. These two measures correlated .34, $p<.001$.

While this plotting of age trends in loneliness is undoubtedly the most extensive available, one must nonetheless interpret the results with due caution. Five potential problems are worthy of note. First, as in all cross sectional research, age trends may be confounded with cohort effects. Second, even with large samples, the number of respondents in specific age groups (especially the older age groups) is sometimes fairly small. Since proportions based on a small number of respondents would presumably be less reliable, percentages based on less than 10 cases are not reported. Third, there may be age differences in survey research participation rates. If volunteers are less (or more) lonely than non-volunteers, then the obtained age trends in loneliness could reflect differential participation rates rather than true age differences in loneliness. This would probably have an especially strong effect on the newspaper surveys. Fourth, age may affect respondents' willingness to reveal emotional problems.

Finally, within any given data set, the same measure of loneliness was used. But across data sets, the measures differed in wording and response categories, thus affecting the percentage of respondents answering that they were lonely. On top of this, studies differed in the proportion of respondents in various age groups (and perhaps in their quality). So, in aggregating results, the obtained age trends could partially reflect the joint biases of question wording and differences in the proportion of respondents in each age group who came from various samples. Fortunately, in most samples the percentage of lonely respondents was in the vicinity of 30 per cent. Furthermore, as shall become apparent, the basic age trend held across most specific samples.

## Results and Discussion

### Age Trends

Overall, the results suggest that loneliness is high in young adulthood and generally declines over the life cycle (see Table 1). More specifically, loneliness appears to have a "backward" check-shaped curve, dropping from young adulthood through middle age and then increasing again

slightly. This pattern is graphically displayed in Figure 1, which shows the proportion of lonely respondents within each age and gender sub-group. Figure 1 is based on an unweighted aggregation of respondents (N=18,682) from the six data sets available to the present authors. In the aggregated data, 43 per cent of 18-24 year olds reported loneliness. This dropped to 25 per cent for respondents 45-64 and then rose again to 26%, 28% and 28% for individuals in the 65-74, 75-84 and 85+ age groups.

Insert Table 1 and Figure 1 about here

Two caveats must be mentioned with regard to the available studies. First, the portion of variance in loneliness scores accounted for by age is relatively small (e.g., approximately one per cent in the Myth and Reality of Aging Study). Second, the evidence on loneliness among the old-old is especially interesting. In the aggregated data, loneliness was only marginally more likely among respondents over 65 than it was among the respondents in the 44-65 year old bracket.

Similarly, in at least four studies restricted to older adults, the correlation between age and loneliness has been non-significant (Creecy, Berg, & Wright, 1985; Dooghe, Vanderleyden, & van Loon, 1980; Hoeffer, 1987; Perlman, Gerson, & Spinner, 1978). On the other hand, the large scale (N=7,375), three nation study done by Shanas and her associates found respondents over 80 more likely to be lonely than those aged 65 to 79 (see Table 2). These findings echo those of Dean (see Table 1), of Lawton, Moss, and Kleban (1985), and of a Swedish National Study cited by Berg, Mellstrom, Persson, and Svansborg (1981, p. 342). In the latter data set, "20% of the people already between 60 and 65 years old felt lonely. The proportion who were lonely rose to above 40% for those 80 years old or more." Analyses by Townsend suggest that the proportions of widowed and incapacitated persons in each older subgroup may help explain why loneliness is sometimes but not always higher in samples of respondents aged 80 and over.

Insert Table 2 about here

With slight variations, the basic age trend emerged regardless of which measure of loneliness was used. Consistent with the pattern for self-labelling items, scores on the abbreviated UCLA Loneliness Scale varied significantly as a function of age ($F=2.71$, $p<.02$). For the UCLA scores, pairwise comparisons among means (see Table 1) using Tukey's HSD procedure showed that respondents in the 25 to 34 year old range ($M=8.0$) were significantly more lonely than those in the 65 to 74 age range ($M=7.0$). UCLA Loneliness scores for the Edmonton residents aged 75 to 84 ($M=7.2$) were non-significantly higher than the scores for those aged 65 to 74. Scores on the NYU Scale manifest a steady decline in loneliness, with no increase after age 65 (see Table 1). It is noteworthy that the studies using the NYU Scale also used volunteer samples, which may partially influence the pattern.

## Gender Differences

While the basic age trend holds across measures, past research on the association between gender and loneliness has shown those results to be measure specific (see Borys & Perlman, 1985). Women have been more apt to label themselves as lonely when responding to single item measures, but men have scored higher on the UCLA scale. This nuance was replicated in the present analyses. As shown in the aggregated data (see Figure 1), a higher percentage of women (32 per cent) than men (27 per cent) labelled

themselves as lonely (chi square=57.1, $p < .0001$). Nonetheless, in the Edmonton data, men ($M$=8.0) had significantly higher scores on the abbreviated UCLA Loneliness scale than did women ($M$=7.6, $F$=4.86, $p<.03$). Borys and Perlman have presented evidence suggesting that gender linked social pressures inhibit males from explicitly admitting to emotions such as loneliness and depression. Such pressures presumably influence responses to self-labelling items more than they do responses to the UCLA Scale.

Explanations of the Age Trends

How can age trends in loneliness be explained? At least three categories of answers can be provided: 1) methodological artifacts, 2) analysis of the high or low level of loneliness in specific age groups, and 3) general models of loneliness which incorporate age related factors. With regard to methodological factors, the possibility of differential volunteering rates has already been discussed. Similarly, there is always the question of measurement equivalence across age groups: do people at different points in the life cycle have comparable views of what it means to be lonely? Could changing definitions alter the proportion of individuals reporting this experience?

With regard to age specific explanations, some authors have have offered analyses of why adolescents are so prone to loneliness. Brennan (1982), for instance, claims that separation from parents, identity diffusion, excessive rejection and the like all contribute to the likelihood of adolescents becoming lonely. At the opposite end of the life cycle, Dean (1962) has advanced the emotional constraint hypothesis and other observers have claimed that the declining social ties of the elderly make them susceptible to loneliness. Recent research provides dramatic evidence that older adults do indeed have smaller networks (Fischer & Phillips, 1982) and do spend less time with others than do either adolescent or middle-aged Americans (Larson, Zuzanek, & Mannell, 1985).

Besides efforts to explain the high or low loneliness of particluar age groups, some investigators have looked for age specific correlates of loneliness. For example, as is true of depression (McNeil & Harsany, 1989), poor health appears more closely associated with loneliness in old age than in adolescence (Schmitt & Kurdek, 1985). Presumably age related changes in these predictor variables can ultimately explain changes in loneliness. Thus these efforts are consist with shifting one's focus from specific age groups to looking at the entire life span.

Finally, Peplau and Perlman (1981; Perlman & Peplau, 1984) have offered a model of loneliness that uses a single primary factor to explain fluctuations in loneliness. According to their analysis, loneliness results when there is a discrepancy between people's desired and achieved levels of contact. Many factors may alter desired or achieved levels of contact, but it is the gap between these parameters that is identified as the immediate antecedent of loneliness. If the syllogism "being old = being alone = being lonely" is faulty, their model suggests it may be because older adults have lower desired levels of social ties. Research by Perlman, Locke and Bond (1985) demonstrates that throughout the life cycle, the desired-achieve gap is a good predictor of loneliness.

To sum up, while the mass media and the lay public depict old age as the primary time for vulnerability to loneliness, the available evidence fails to confirm this popular image. In the extant data, self-reports of loneliness are typically highest among young adults, not senior citizens. The idea that old age is fraught with

loneliness appears to be more myth than reality.

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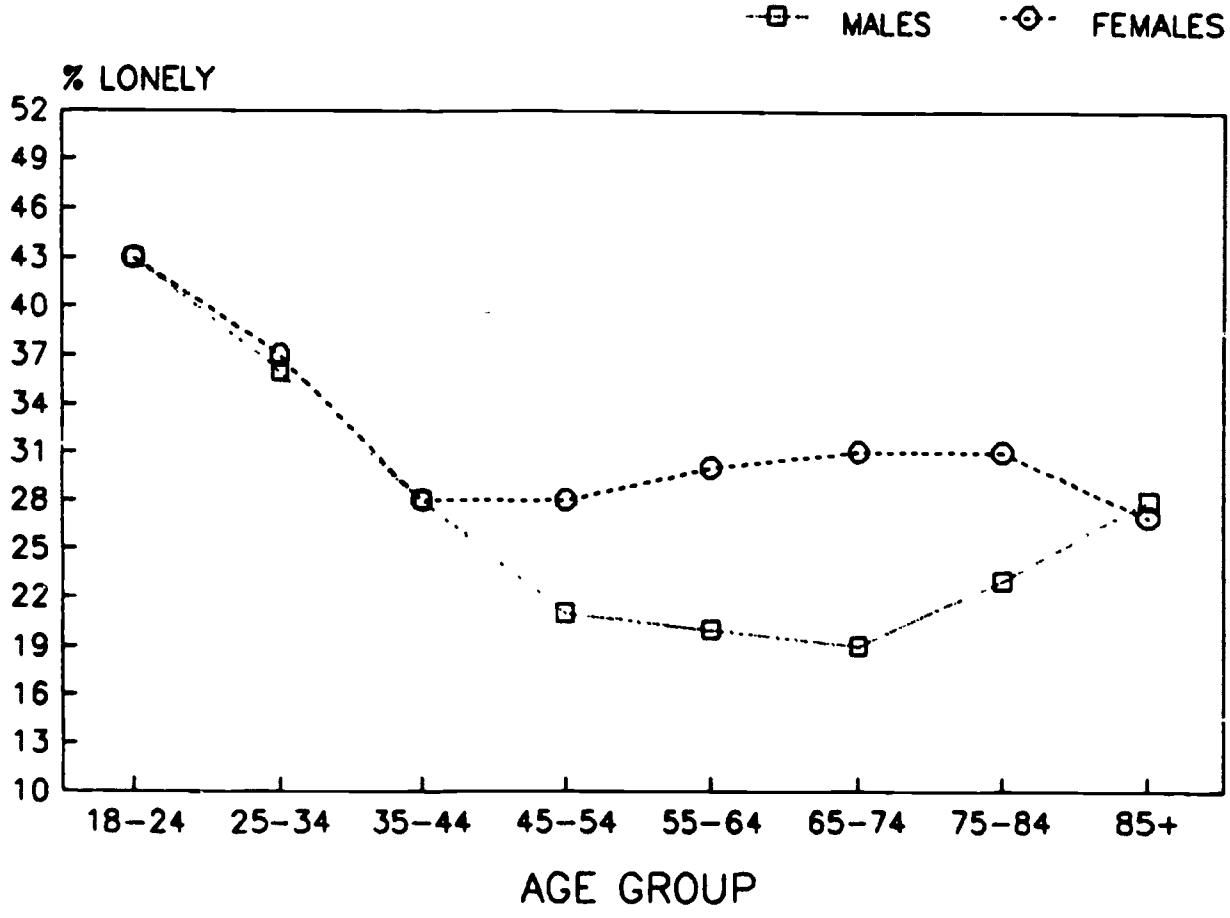

Table 1

Age Trends in Loneliness

| Study | Age Group | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Percentage of Respondents Reporting Loneliness | | | | | | | |
| Radloff - NIMH | 18-24 | 25-44 | | 45-64 | | 65+ | | |
| | 39% | 24% | | 21% | | 25% | | |
| Andersson | 16-24 | 25-34 | | 35-54 | | 55-74 | | |
| | 40% | 32% | | 31% | | 40% | | |
| Parlee (18 | 18-24 | 25-34 | 35-44 | | 45-54 | 55+ | | |
| 79% | 71% | 69% | 60% | | | 53% | 37% | |
| Dean | | | | 50-59 | 60-69 | 70-79 | 80+ | |
| | | | | 26% | 35% | 29% | 53% | |
| Myth & Reality | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75-84 | 85+ |
| | 42% | 30% | 25% | 26% | 23% | 28% | 29% | 21% |
| Edmonton 1979 | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75-84 | 85+ |
| | 45% | 43% | 28% | 27% | 17% | 26% | 27% | NA |
| Edmonton 81/84 | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75-84 | 85+ |
| | 27% | 37% | 27% | 22% | 25% | 23% | 30% | NA |
| Turner | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75-84 | 85+ |
| Matched | 47% | 34% | 14% | 24% | 19% | 17% | 29% | 14% |
| Turner | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75-84 | 85+ |
| Disabled | 53% | 44% | 29% | 35% | 46% | 35% | 39% | 63% |
| Austrom | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75-84 | 85+ |
| | 44% | 36% | 28% | 19% | 14% | 9% | 5% | 17% |
| Lewinsohn | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75-84 | 85+ |
| | 53% | 45% | 44% | 30% | 29% | 24% | 23% | 46% |
| | Mean NYU Loneliness Scores | | | | | | | |
| Rubenstein et al. | 18-25 | 26-30 | 31-39 | 40-49 | 50-59 | 60-69 | 70+ | |
| | +12.8 | +9.5 | +8.9 | +2.9 | -3.8 | -9.4 | -22.5 | |
| Revenson | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75+ | |
| & Johnson | 15.2 | 14.6 | 13.8 | 14.0 | 12.8 | 11.4 | 6.7 | |
| | Mean UCLA Loneliness Scores | | | | | | | |
| Edmonton 81/84 | 18-24 | 25-34 | 35-44 | 45-54 | 55-64 | 65-74 | 75-84 | 85+ |
| | 7.7 | 8.0 | 7.9 | 7.9 | 7.4 | 7.0 | 7.2 | NA |

Table 2

Loneliness among Old People in Three Industrial Societies

| Country | Age | | | |
|---|---|---|---|---|
| | 65-69 | 70-74 | 75-79 | 80+ |
| Denmark | 13% | 17% | 19% | 25% |
| Britain | 24% | 26% | 27% | 41% |
| United States | 25% | 29% | 35% | 38% |

Source: Townsend, 1968, p.282.