Loneliness and solitude in adolescence: A confirmatory factor analysis of alternative models

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ABSTRACT

The present study tested a four-factor model of adolescent loneliness and solitude that comprises peer-related loneliness, family loneliness, negative attitude toward solitude, and positive attitude toward solitude. Nine different instruments for a total of 14 scales and derivative subscales were completed by a sample of mid-adolescents (N = 534) from Grades 10 through 12 (aged 15–18 years) in the Dutch-speaking part of Belgium. As expected, the four-factor solution provided a better fit to the data than did alternative models that comprised just a single factor, or two and three factors. Use of the Loneliness and Aloneness Scale for Children and Adolescents (LACA) is recommended, because the instrument measures all four aspects of the model. Implications for current theories on adolescent loneliness and associated phenomena, such as adolescents' attitude toward being on their own, are briefly discussed.

1. Introduction

Loneliness is a negative emotion that comes about through a discrepancy between desired and achieved levels of social contact (Perlman & Peplau, 1981). Such negative emotions are occasionally experienced by many individuals and may have important clinical implications (Heinrich & Gullone, 2006). However, theoretical debates over the structure of loneliness and related constructs such as solitude continue. The present study examined the commonalities across a broad set of loneliness and solitude measures and compared the empirical fit of different models as inspired by extant conceptualizations of the constructs.

1.1. Conceptualizations of loneliness and related phenomena

Two approaches to measuring loneliness can be found in the literature (Shaver & Brennan, 1991): the global approach and the multidimensional approach. The global or unidimensional approach assumes that loneliness takes on essentially the same form in different situations and can therefore be measured by means of a single scale. The most widely used measure of loneliness, the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980), is inspired by this approach. The multidimensional approach, by contrast, is predicated on the assumption that loneliness can take on multiple forms.

Within the multidimensional approach, Weiss (1973) argued that different kinds of relationships offer different provisions and made an influential distinction between social loneliness, associated with the absence of an engaging social network, and emotional loneliness, associated with the absence of an intimate one-on-one relationship. Based on this distinction, generic measures of social and emotional loneliness were developed. These measures did not specify in which relationship (e.g., with peers or parents) the social provisions (i.e., social integration and attachment) were lacking (Russell, Cutrona, Rose, & Yurko, 1984). Other authors distinguished different forms of loneliness that are specific to a particular type of relationship. DiTommaso and Spinner (1993), for instance, distinguished between friendship loneliness (labeled 'social loneliness'), family loneliness, and romantic loneliness in their measure, the Social and Emotional Loneliness Scale for Adults (SELSA), by means of factor analysis.

Some researchers have extended the multidimensional approach still further and examine related constructs to place feelings of loneliness in a broader perspective (Marcoen & Goossens, 1993; Schwab, 1997). People's attitude toward being alone occupies a central role in these hybrid models of loneliness. Specifically, attitudes toward being alone might affect one's vulnerability to feeling lonely when alone. Two different attitudes toward being alone can be distinguished. The positive attitude is referred to by means of different labels such as affinity for aloneness or solitude, whereas the negative one is labeled aversion to aloneness or inability to be alone. The most comprehensive hybrid model of loneliness today is the one developed by Marcoen and Goossens

(1993), who distinguished between peer-related loneliness, family loneliness, positive attitude to solitude, and negative attitude to solitude. These authors developed a measure, the Loneliness and Aloneness Scale for Children and Adolescents (LACA; Marcoen, Goossens, & Caes, 1987), to tap these four constructs and found support for its hypothesized structure through exploratory factor analysis (EFA).

1.2. Factor analyses of sets of extant loneliness instruments

A question rarely addressed in the literature is whether any of the models described above receives support across different measures of loneliness rather than within a single instrument. Close inspection of the literature revealed that just two studies factor analyzed sizeable sets of extant measures of loneliness in search of underlying dimensions. The first study examined 7 scales and their 21 derivative subscales, as designed for use with adults, in a sample of college students (Cramer & Barry, 1999). Exploratory factor analysis with oblique rotation yielded three factors that regrouped scales across measures and a fourth factor specific to one of the instruments examined. The three common factors referred to (a) social loneliness, as defined by both generic measures of social loneliness and measures of peer loneliness, (b) family loneliness, and (c) emotional loneliness, as defined by both generic measures of emotional loneliness and measures of romantic loneliness. This study, therefore, yielded support for the three-factor-model advanced by DiTommaso and Spinner (1993), as inspired by Weiss (1973). Widely used measures of global loneliness, such as the UCLA and the de Jong-Gierveld scale (de Jong-Gierveld & Kamphuis, 1985) failed to define a separate factor but loaded on the social loneliness factor.

The second study examined three sets of loneliness and solitude measures specifically designed for use with children and adolescents in three different samples of Grades 5 and 6 children (Goossens & Beyers, 2002). In two of these samples, confirmatory factor analysis (CFA) was used and support was obtained for two factors that tapped into peer-related and family loneliness, respectively. The findings of the third study, in which EFA was used with varimax rotation, revealed a three-dimensional structure that referred to peer-related or friendship loneliness, negative attitude to solitude, and positive attitude to solitude, respectively. Taken together, then, this multi-sample study yielded support for the four-factor model advanced by Marcoen and Goossens (1993). None of the three sets of measures used, however, was designed to test the full four-factor model.

1.3. The present study

The present study set out to test the full four-factor model in a sample of high-school students using nine measures and 14 subscales designed for use with adolescents or adults. Three scales or subscales each were selected to tap into peer-related loneliness, family loneliness, negative attitude to solitude, and positive attitude to solitude, respectively. Two global measures of loneliness were also included in the questionnaire packet and they were expected to define a common factor with the measures of friendship loneliness, as was the case in the Cramer and Barry (1999) study. This four-factor model is compared to simpler, alternative models that comprise one, two, or three factors. Within the four-factor model, the factor correlation between peer loneliness and family loneliness, as inferred from CFA, was expected to range between .36 and .55 (Goossens & Beyers, 2002). Because the remaining factor correlations have never been estimated before, no specific hypotheses were advanced regarding these associations.

2. Method

2.1. Participants and procedure

A total of 534 adolescents from Grades 10 through 12 were recruited for the study from four high schools in the Dutch-speaking part of Belgium. The mean age of the participants was 16.76 years (SD = 0.90) and 53% were females. The students completed the questionnaire packet during regular school hours in a single 50-min session. In two schools, the questionnaires were administered by two undergraduate students in psychology (the fifth and sixth authors). In the other two schools, the measures were administered by school teachers according to standardized instructions as supplied by the undergraduate students.

2.2. Measures

Nine measures were included to assess peer loneliness, family loneliness, and negative and positive attitudes to solitude. Unless indicated otherwise, all items were rated on a 5-point Likert-scale ranging from *does not apply to me at all* (1) to *applies to me very well* (5). For several scales, this approach represents a departure from the format used in earlier research, a change intended to reduce the burden imposed on the participants when completing the questionnaire packet.

The Loneliness and Aloneness Scale for Children and Adolescents (LACA; Marcoen et al., 1987) is a 48-item multidimensional measure of loneliness with 4 subscales (12 items each) that capture (a) family loneliness (LACA-Parents), (b) peer-related loneliness (LACA-Peers), (c) aversion to aloneness (LACA-Negative), and (d) affinity for aloneness (LACA-Positive). All items were answered on a 4-point Likert-scale, ranging from *never* (1) to *often* (4). Higher scores indicate higher degrees of loneliness and more negative or more positive attitudes toward being alone, respectively.

The Differential Loneliness Scale (DLS; Schmidt & Sermat, 1983) asks respondents to evaluate the quality and quantity of their interactions in four types of relationships. In the present study, we included two subscales (5 items each) from the short student version (V. Sermat, personal communication, October 9, 1997) that measure dissatisfaction with the relationships with family (DLS-FAM) and friends (DLS-FR), respectively. Higher scores indicate higher levels of dissatisfaction.

The Social and Emotional Loneliness Scale for Adults-Short Form (SELSA-S; DiTommaso, Brannen, & Best, 2004) measures family, romantic, and social loneliness. In the present study, the two subscales (5 items each) measuring family loneliness (SELSA-S-FAM) and social loneliness (SELSA-S-SOC) were included. Higher scores indicate higher levels of family loneliness and peer-related loneliness, respectively.

The UCLA Loneliness Scale (Russell et al., 1980) measures general feelings of loneliness. In the present study, an 8-item short version of the scale was used (RULS-8; Roberts, Lewinsohn, & Seeley, 1993), which was expected to load onto the factor defined by the measures of peer-related or friendship loneliness. Higher scores reflect greater loneliness.

The Rasch-Type Loneliness Scale (RTLS; de Jong-Gierveld & Kamphuis, 1985; de Jong-Gierveld & van Tilburg, 2007) is an 11-item unidimensional measure of loneliness that meets the criteria of the dichotomous logistic Rasch model. The RTLS was also expected to load on the factor defined by measures of peer-related loneliness in the present study. The items were initially rated on the standard 5-point Likert-scale and recoded as "yes" or "no" following the manual of the scale (de Jong-Gierveld & van Tilburg, 2007) with higher scores reflecting higher loneliness.