

ANALYSIS OF THE RELATIONSHIP BETWEEN
LONELINESS, COPING STRATEGIES AND THE INTERNET

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INTRODUCTION

The study of loneliness is a relatively new area of organized research in academia (Perlman, 1989). Much of the previous research and theorizing into loneliness has focused on the causes of loneliness and the associations of loneliness to other behavioral and emotional problems such as depression, self-esteem, and suicide.

Not as much theorizing and research have been done on coping strategies and their relationship to loneliness, especially on cross-cultural and developmental levels. Even a lesser amount of research has attempted to collect and categorize people's subjective descriptions of loneliness and how they cope with it. This project hopes to build upon the relatively underresearched area of coping strategies and loneliness and to consolidate previous research. Accordingly, the objective of this project is threefold: to develop a model of coping strategies and its relationship to loneliness, to analyze the distribution of the model over age and culture, and to apply the model to Internet use.

In order to develop a model of coping strategies and its relationship to loneliness, this project utilizes both a questionnaire and qualitative data collected through poems and narratives. Questionnaire data were used to test a model of coping strategies and to investigate the model across age and culture. The poems and narratives allow for further understanding of patterns inductively derived from the questionnaire data.

This model may be useful in providing further insight into a recent study conducted by persons from Carnegie Mellon University, which suggested the Internet might increase the levels of loneliness within a person (Kraut, Patterson, Lundmark, Kiesler, Mukopadhyay & Scherlis, 1998). This project investigates the possibility that coping strategies may help explain the relationship between loneliness and Internet use.

In addition to examining these various aspects of loneliness and coping strategies, data for this project were collected through the Internet. The questionnaire was posted on the Internet and poems and narratives were collected over the Internet from persons who posted their loneliness experiences online. Feasibility of data collection over the Internet and methodological problems are discussed.

LITERATURE REVIEW

Loneliness - What do we know?

Most researchers of loneliness trace the first notable work on loneliness to Weiss' book in 1973. This is interesting given that some researchers and existential philosophers suggested that loneliness is a universal emotion; felt by almost (if not) all persons at some point in time or another (Miujskovic, 1979; Moustakas, 1961, 1972; Rotenberg, 1999). Because of its recent arrival into academia, much research and theorizing on loneliness still needs to be done. Since 1973, research has focused to a greater extent on the causes of loneliness and its association to other negative behavioral and emotional phenomena.

Initial work into loneliness, for example, has focused quite extensively on the causes of loneliness. Previous theorizing on the causes of loneliness include the cognitive discrepancy model (McWhirter & Horan, 1996; Perlman & Peplau, 1982), a social skills/behavioral model (Duck, 1992; McWhirter & Horan, 1996), attachment theory (Weiss, 1973, 1989), psychodynamic theory (Hojat, 1989; Sullivan, 1953) and sociological models (Gordon, 1976). Recently, Rokach and Brock (1996) have proposed a five factor model of the causes of loneliness including categories of personal inadequacies, developmental deficits, unfulfilled intimate relationships, relocation and significant separations and social marginality. There is presently an abundance of theories and supporting research that have focused on the causes of loneliness.

There is also an abundance of research about loneliness and its association to other behavioral and emotional problems. For example, Kupersmidt, Sigda, Sedikides and Voegler (1999) have mentioned links between loneliness and emotional problems (low self-esteem, depression and social anxiety), social problems (peer rejection and victimization, lack of friendships and lack of high-quality friendships) and behavioral problems (shyness, social withdrawal, spending more time alone, dating frequency and decreased participation in religious and extracurricular school activities). Perlman and Landolt (1999) reported associations between loneliness and other psychosocial problems such as physical illness, suicide, alcohol use, poor psychological adjustment, aggression, low grades in university, stealing and vandalism. There is an established empirical database of loneliness and its relationship to these problems.

Loneliness and coping strategies.

One area of research that has been less studied is the coping strategies used by lonely persons. Research on coping strategies dates back to a seminal work done by Rubenstein and Shaver (1982). However, very few subsequent studies have been conducted and there has been little theory building. Theories are still needed to explain, for example, why certain lonely individuals choose one type of coping strategy over another.

The insightful work by Rubenstein and Shaver (1982) shed light on how people cope with loneliness. Information was obtained from results of a newspaper survey with a large sample (n = 23,500). Their measures of coping strategies focused more on behavioral than on mental coping strategies. Rokach and Brock (1998) also investigated coping strategies used by lonely persons. Their investigation focused both on behavioral strategies and mental strategies from a convenience sample of 633 persons and the results from their investigation yielded six basic ways of coping. Similarities exist between Rubenstein and Shaver (1982) and Rokach and Brock (1998) in three coping strategies as depicted in Table 1 below:

Table 1

Similar coping strategies between two researches.

Rubenstein & Shaver, 1982, p. 215	Rokach & Brock, 1998, p. 110-111
<ul style="list-style-type: none"> • Active solitude <p>Study or work, write, listen to music, exercise, walk, work on a hobby, go to a movie, read and play music</p>	<ul style="list-style-type: none"> • Increased activity <p>Devoting more of one's self to work as well as taking on extracurricular activities to make one's solitary time more pleasant, productive, and meaningful</p>
<ul style="list-style-type: none"> • Social contact <p>Calling a friend, visiting someone</p>	<ul style="list-style-type: none"> • Social support network <p>Increased social involvement and interaction with others...and seeking romantic connections</p>
<ul style="list-style-type: none"> • Sad passivity <p>Cry, sleep, sit and think, do nothing, overeat, take tranquilizers, watch TV, drink, getting "stoned"</p>	<ul style="list-style-type: none"> • Distancing and denial <p>Unhealthy behaviors such as exaggerated consumption of medication, alcohol and drug abuse [<i>sic</i>], self-induced isolation, attempted suicide, turning to crime or denying loneliness altogether.</p>

The other coping behavior described by Rubenstein and Shaver (1982) was spending money, whilst for Rokach and Brock (1998) the other categories involved mental coping: reflection and acceptance, self-development and understanding, and religion and faith.

Of particular interest are the common categories, sad passivity and distancing and denial. Both categories share similar behaviors (e.g., alcohol and drug abuse, self-induced isolation), but the categories have been conceptualized rather differently. Sad passivity was associated with the loneliest participants in the study by Rubenstein and Shaver (1982). It was also negatively correlated with age suggesting that this might be a coping strategy associated with youth. Rubenstein and Shaver (1982) described this coping strategy as “a state of lethargic self-pity that may well contribute to a vicious cycle of low self-esteem and social isolation” (p. 215). Van Buskirk and Duke (1991) in a follow-up study concluded that lonely and non-lonely persons use sad passivity, however, it appears that chronically lonely individuals seem unable to break out of the vicious cycle of sad passivity.

The behaviors of the category distancing and denial however, are presented under a different conceptualization. In this sense, the behaviors are self induced social isolation mechanisms meant “both as a measure for protecting, one’s vulnerable self and as an attempt to minimize further hurt that might be caused by failed attempts to associate with others” (Rokach & Brock, 1998, p. 113). This attempt to protect oneself from future hurt may in fact have the effect of perpetuating or increasing loneliness, including the pain of loneliness resulting in further need to protect oneself.

Previous researches have suggested both different and apparently similar types of coping strategies. Of the three similar pairs of coping strategies in Table 1, the first two pairs seem to be very similar. The coping strategies in the last pair, whilst sharing some commonality are conceptualized differently. This project develops categories of coping strategies using elements from the two previous researches and adding several other coping strategies as well. The results from this investigation consolidate these two bodies of literature and provide a model for understanding coping strategies and its relationship to loneliness.

Phenomenological approach to loneliness and coping strategies.

Another area requiring further research is the phenomenological investigation of loneliness or looking at the thoughts and experiences of lonely persons. Weiss (1989), in his overview of research done on loneliness, has suggested that definitions of loneliness are not definitions at all, but rather “mini-theories.” These mini-theories embody in them possible causes of loneliness however they are “insufficiently sensitive to loneliness’ status as a real phenomena” (Weiss, 1989, p. 8). Little research has been done on people’s subjective descriptions of either loneliness or how they cope with it. By not studying people’s subjective perceptions of how they describe their loneliness experiences and their attempts to cope with it, researchers do not have a comprehensive understanding of the phenomenon.

One purpose of this research is to develop a model of coping strategies. By also undertaking a phenomenological study of loneliness and coping strategies, there will be a more complete understanding of any derived model of coping strategies. In particular, a phenomenological approach may help highlight processes that cause lonely persons to choose certain coping strategies over others. This project will also broaden the base of empirical investigations done phenomenologically into loneliness and coping strategies.

Culture, loneliness and coping strategies.

Loneliness, coping strategies and their relationship to culture, is now beginning to be looked at in some detail, especially in cross-cultural comparisons. Most theorizing about why loneliness occurs in Western societies revolves around the idea of social isolation. For example, Gordon (1976) suggested that within American culture increasing individualism was causing an increase in loneliness. The sense of community that existed especially within rural settings was being eroded and people no longer felt that they have others they can turn to for help. Gordon (1976) also proposed that increased mobility had caused an increase in loneliness as well. To her, loneliness within American culture is not only the result of “psychological baggage” but also because “American society alienates the potentially closest of friends, colleagues, loves and workmates” (Gordon, 1976, p. 22). Little exists in the way of comparative data with more collectivist cultures to determine the differences in the levels and possible causes of loneliness.

In a study conducted by Neto and Barros (2000) some attempt was made to examine whether or not a culture that is based on more industrialized, competitive values (Portugal) would have members who were lonelier than members who had less industrialized and less competitive values (Cape Verde). Their analysis revealed, rather interestingly, no significant differences between the two societies and the reported levels of loneliness in both adolescents and young adults. This raises the important question of whether or not members from individualistic societies experience similar levels of loneliness as collectivist societies.

Rokach (1999) has conducted some initial research into cross-cultural comparisons on the how people from different cultures cope with loneliness. Rokach (1999) did a cross-cultural comparison on three groups of people living in Canada with culturally distinct backgrounds, namely North American (mostly Canadian), South Asian, and West Indian. The South Asian and West Indian groups were first generation immigrants into Canada. One must initially note that these groups may not be representative of cultures from which they came. Rokach (1999) investigated whether coping strategies were different for the three cultural groups. The model of coping strategies was based on his own previous research into coping with loneliness (Rokach & Brock, 1998). There were three important findings from his research. Firstly, North Americans had the highest rated scores on the coping strategies of social support network and distancing and denial. His second finding was that West Indians had the highest rated score for reflection and acceptance. Thirdly, North Americans had an appreciably lower rated score for religion and faith than the other two groups with West Indians having the highest.

These findings suggest that different cultures influence how individuals cope with their loneliness. In particular, West Indian and South Asian cultures, often described as more religious, may influence their members to rely on the religion and faith coping mechanism. In contrast, the more “alienating North American culture, with its emphasis on competitiveness and impersonal social relations (see Ostrov & Offer, 1980), appeared to endorse distancing and denial significantly more than those who immigrated from the West Indies or South Asia” (Rokach, 1999, p. 226). These findings suggest that coping

strategies may be culturally differentiated but what was unclear was how the levels of loneliness were differentiated across cultures.

With regards to this review of loneliness and coping strategies on a cross-cultural level, two important points need to be noted. Firstly, it not clear if loneliness is in fact experienced at different levels across different cultures. The research has been inconclusive, and preliminary research by Neto and Barros (2000) suggests that there may be no difference across cultures. The distributions of levels of loneliness across cultures may have a great deal of overlap. Secondly, initial research by Rokach (1999) found that there are cross-cultural differences in coping strategies. The current project, by measuring both the level of loneliness and different types of coping strategies across cultures, may be able to provide a more cohesive cross-cultural model of loneliness and coping strategies. For example, if the levels of loneliness are different across cultures, and the coping strategies are also different, then one can begin to question whether the norm in one culture causes people to cope with loneliness in a less effective manner than people in the other culture. This model will be useful in future cross-cultural loneliness research.

Developmental approach to loneliness and coping strategies.

It has been suggested by a few theorists that loneliness and how people cope with it can be conceptualized as a developmental phenomenon. Several investigators have noted that the strength of loneliness is not evenly distributed over the life span of an individual. For instance, Rubenstein and Shaver (1982) pointed out that in their investigations loneliness was negatively correlated with age, suggesting that it is a problem associated with youth. Peplau, Bikson, Rook and Goodchilds (1982) and Brennan (1982) have reported a similar trend. While several different researchers have suggested a variety of reasons why loneliness seems abundant at this age (Brennan, 1982; Larson, 1999; Sullivan, 1953; Weiss, 1973), of particular importance is the relationship between age and the differential use of coping strategies.

Adolescents may use ineffective coping strategies to try and dispel their feelings of loneliness. Rubenstein and Shaver (1982) found that adolescents were the most lonely and used sad passivity to cope with their loneliness more so than any other age group.

Adolescents' use of sad passivity may help explain why at this age there is the greatest amount of loneliness.

Rokach and Brock (1998) do not have similar comparison of coping strategies across age. Given the trends found by Rubenstein and Shaver (1982) and that the aim of this project is to develop new model of loneliness coping strategies, it would be of interest to examine if a similar trend of the distribution of coping strategies across age, holds for these new consolidated coping strategies. By providing a more comprehensive model an improved understanding of the relationship between age, loneliness, and coping strategies can be obtained.

Internet use, loneliness and coping strategies.

A recent study conducted by Kraut et al. (1998) revealed that use of the Internet might significantly increase loneliness. They did a two year longitudinal study to examine the effects of the Internet on people who had never before had access to the Internet. One finding was that use of the Internet increases loneliness purportedly via social isolation. That finding has spawned a fury of debates about the legitimacy of the claim and evoked a need for further research to either evaluate this claim.

This project attempts to address the finding by Kraut et al. (1998) that the Internet causes loneliness. The problem with this finding is that people use the Internet differently. Internet uses can vary from solitary to sociable functions and the word "Internet" is too broad a term to apply as a cause of loneliness. What would be of greater utility is to research what determines Internet use among lonely persons and how these uses of the Internet may causes loneliness. The relationship of Internet use and loneliness may be moderated by the additional third factor of coping strategies and may help explain this relationship. It is suggested here that people who use the Internet, especially to cope with their loneliness, use the Internet in a way that parallels their general coping strategy for loneliness. Coping strategies therefore will allow us to explain the relationship between loneliness and Internet use. Some initial basis for this prediction comes from the findings of research by Korgaonkar and Wolin (1999), which demonstrated that people who use the Internet to cope with their loneliness often use the Internet for escape activities similar to coping strategies of sad passivity.

Objectives, focus questions and hypotheses.

To fulfill the objectives of this project, two different studies were undertaken. The first study used a questionnaire posted on the Internet to gather data regarding loneliness and coping strategies. Because one of the major objectives is to examine loneliness, coping strategies and the Internet, posting the questionnaire on the Internet is a convenient way of getting participants who use the Internet. Posting the questionnaire on the Internet is also convenient to collect data from people of different nationalities and of different ages. In the second study the researcher collected poems and narratives that have been posted by people on the Internet. This method was especially suited to the goal of collecting people's subjective experiences about loneliness because the Internet is a great informal database of people's descriptions and experiences of loneliness.

Below is a break down of the objectives and focus questions of this project. Objective 1 to Objective 4 refer to the four major objectives of the first study, while Objective 5 refers to the second study.

Objective 1: Loneliness and coping strategies. This objective expands the works of Rubenstein and Shaver (1982) and Rokach and Brock (1998) into coping strategies of the lonely. For the purposes of this project two levels of coping strategies are differentiated. Firstly there are the individual coping strategies such as watching TV or exercising, which will be referred to as *coping strategies*. Secondly, there are the more general coping strategies mentioned in previous research, which are a conglomeration of individual coping strategies, for example, sad passivity and distancing and denial. These will be referred to as *coping categories*. Therefore a group of coping strategies can constitute a coping category. In this project, a broader set of coping strategies both mental and behavioral will be measured in an attempt to build upon and consolidate previous research by creating a new model of coping categories and analyzing its relationship to loneliness. Questions to be addressed:

- a. What coping strategies are significantly correlated with self-reported levels of loneliness?
- b. What coping strategies factor with each other to form coping categories?
- c. How do the different coping categories correlate with loneliness?

Objective 2: Culture, loneliness, and coping strategies. This objective provides cross-cultural data by collecting measures of loneliness and coping strategies from people across the globe. Questions to be addressed:

- a. Are coping categories significantly different for people of different nationalities?
- b. Are there complementary significant differences in the level of loneliness between people of different nationalities?

Objective 3: Developmental approach to loneliness and coping strategies. The intent of this objective is to investigate the distribution of loneliness and coping categories across age. Questions to be addressed:

- a. Does the level of loneliness change from adolescence to adulthood?
- b. Do coping categories change from adolescence to adulthood?

Objective 4: Internet use, loneliness and coping strategies. This objective investigates the relationship between a variety of uses of the Internet, the strength of loneliness and coping categories of the lonely. It also examines using the Internet as a coping strategy. Questions to be addressed include:

- a. Do lonely people use the Internet as a coping strategy for loneliness?
- b. Is there a difference in the level of loneliness for different uses of the Internet?
- c. Are different coping categories associated with different Internet uses?

Objective 5: Phenomenological approach to loneliness and coping strategies. This research project will extend the phenomenological database of self-descriptive categories of experiences of loneliness and coping strategies in order to understand the derived model of coping strategies and its relationship to loneliness. This objective has three smaller objectives:

- a. To develop categories that represent collective depictions of causes and descriptions of loneliness along with coping strategies.
- b. To get the frequency of each category within all poems and narratives collected.
- c. To identify associations between categories.

STUDY 1

Method

Participants

Three hundred and fifty three persons responded to the online questionnaire posted on the Internet. These persons were self selected individuals who agreed to a consent form before participating in the questionnaire.

The age of the participants ranged from 14 to 72 years. The mean age was 27.84 ($SD = 11.52$). Approximately seventy percent of the sample was within ages 14 to 30. One possible reason for this uneven distribution is because the Internet is a medium more extensively used by younger individuals. For the purposes of this research, the adolescent period was defined as the period from ages 14-20 (34.3%), young adulthood ages 21-29 (34%) and adulthood from ages 30 to 72 (31.7%). There were 111 males (31.4%) and 242 females (68.6%).

Overall, participants from thirty-one countries took part in this research (see Table 2). However, the spread of participants from the different countries was unevenly distributed. Seventeen of the 31 countries had only one participant and 72.2% of the sample came from the United States. Because such a large proportion of the sample came from one particular country, it was difficult to create any meaningful or statistically useful groups of nationality. Therefore nations were grouped into two major categories, one group representative of an industrialized, Western and individualistic society and the other group representative of countries that are either less industrialized or have more of a collectivist culture. The researcher decided a country's classification into one or the other category. The final sample of nations was separated with 87.6% falling into the first category, industrialized societies and 12.4% falling into the latter category, collectivistic societies.

The ratio of males to females was approximately the same for the two categories of countries, however, age distribution was dissimilar from industrialized societies to collectivist societies. For the industrialized societies category, the percentage of males was 31% and in collectivistic societies it was 34%. With regards to age, participants in the industrialized societies group showed a relatively even distribution among the three age groups (37%, 29%, 34%) while collectivist societies showed a more uneven

distribution with the majority falling within the young adult age category (16%, 66%, 18%).

Table 2

Frequency of Nationality of Respondents

Industrialized Countries	Frequency	Percent	Collectivist Countries	Frequency	Percent
Australia	9	2.5	Andorra	1	.3
Austria	1	.3	Brazil	1	.3
Bahrain	1	.3	Egypt	4	1.1
Belgium	1	.3	India	4	1.1
Canada	11	3.1	Israel	2	.6
Finland	1	.3	Malaysia	3	.8
Germany	3	.8	Pakistan	2	.6
Greece	2	.6	Panama	1	.3
Ireland	1	.3	Philippines	1	.3
Netherlands	1	.3	Puerto Rico	1	.3
Norway	2	.6	Singapore	1	.3
Poland	1	.3	Trinidad & Tobago	20	5.7
Romania	1	.3	Uruguay	2	.6
Russian Fed (East)	1	.3	Zambia	1	.3
Sweden	1	.3			
England	17	4.8			
US	255	72.2			
Total	309	87.6	Total	44	12.4

Procedure

An online questionnaire was used to gather data about Internet use, coping strategies, the level of loneliness, and demographics. The questionnaire was part of a larger website dedicated to providing information about loneliness. This larger website formed part of the recruiting process for participants. The questionnaire was open to anyone with Internet access age 14 and over who had agreed with the consent form. Recruitment of participants and advertisement of the questionnaire took place in several ways:

1. Advertisements were made on research websites, that is, websites that posted online research projects.

2. Advertisements were also made on websites that are affiliated with loneliness in some way, for example, websites that are dedicated to self-help, or relationship problems.
3. The website was also advertised through search engines. The website address and a short description were submitted to several search engines. Visitors then found the website through searches performed on these search engines especially searches that included the word “loneliness” in it.
4. An attempt was made to recruit persons who had personal websites that in some way dealt with loneliness. This was usually in the form of a webpage that had a poem or other artwork about loneliness. Creators of these websites received an email inviting them to visit the website and share their loneliness experiences.
5. Recruitment was also made through online support groups, in particular, newsgroups and clubs in Yahoo. Members either received an email or read a message that was posted on the club message board, inviting them to visit the website and share their loneliness experiences.
6. Advertisements made through recommendations made by persons who visited the site.
7. Advertisement to students at the University of Illinois in classes they attended.
8. Advertisement to friends.

An Internet counter, located on the introductory page, provided partial information on the rates of visitors from referring URLs. This information suggested that advertisement procedures 1, 2 and 3 above were the most popular ways participants found the site. Advertisements made directly to persons brought vast increases in participation but was only temporary and faded after time.

The online questionnaire was constructed so that respondents would only be able to submit the questionnaire when all the necessary questions were answered. After the questionnaire was answered respondents were invited to purview some preliminary results of the data collected. They were also provided with a unique random questionnaire number. Respondents who decided to answer the questionnaire more than once were asked, in the questionnaire, if they answered the questionnaire before and to provide, if possible, the previous questionnaire number they were assigned. This was one technique used to portion out repeated participation by the same person. Five persons

reported answering the questionnaire more than once, with responses the second time being almost identical to the first. The first questionnaire responses were deleted before data analysis commenced.

Measures

Variables of interest were: the strength of loneliness, types and strengths of coping strategies used, Internet use, and demographics.

Strength of loneliness. The strength of loneliness was measured using an adapted version of the Revised UCLA Loneliness Scale (Russell, Peplau & Cutrona, 1980) plus one extra item. The Revised UCLA Loneliness scale measures loneliness by asking indirect questions about experiences associated with loneliness. The extra item asked directly whether respondents feel lonely or not. The final instrument consisted of eleven items. Responses to each item ranged from *often feel this way* to *never feel this way* on a four point Likert scale. Wilson, Cutts, Lees, Mapungwana and Maunganidze (1992) reported good reliability with eight of these eleven items. The scale itself is one of the most widely used loneliness measures and has reputable reliability and validity (Shaver & Brennan, 1991).

The loneliness scale without the extra item had an acceptable internal consistency, $\alpha = .92$. The single item that measured loneliness by directly asking participants if they were lonely had a corrected item-total correlation of .77 with the rest of the scale and raised the internal consistency of the final measure to .93.

Types and strengths of coping strategies. The sixty item instrument measured 28 different coping strategies (see Appendix A). These 28 coping measures represented both coping strategies used in previous loneliness research as well as other strategies used in non-loneliness research such as daydreaming, obtaining power and revenge, and venting one's emotions. The final instrument was a combination of three different coping instruments along with one additional item to measure the Internet as a coping strategy. The three different coping instruments were the Sustaining Fantasy Instrument (Zelin et al., 1983), the COPE scale (Carver, Scheier & Weintraub, 1989) and the Reactions To Loneliness Measure (Rubenstein & Shaver, 1982). The combined instrument was designed to fulfill Objective 1.

Of the 28 coping strategies, 13 were single item questions. Most of these single items were coping strategies used in the study by Rubenstein and Shaver (1982). The remaining 15 measures all had good internal reliability with adjustments made to two measures. Reliabilities ranged from .68 to .98 (see Table 3).

Table 3

Reliabilities of 15 coping strategies

Coping Strategy	Number of Items	Cronbach α
Aesthetics	4	.68
Use of God	3	.98
Power and Revenge	3	.74
Admiration of Self	5	.80
Withdrawal and Protection	3	.94
Love and Closeness	4	.92
Suffering*	3	.80
Competition	2	.70
Active Coping and Planning	4	.91
Seeking Social Support for Instrumental Reasons	2	.86
Seeking Social Support for Emotional Reasons	3	.94
Positive Reinterpretation and Growth	2	.88
Acceptance*	2	.72
Focus On and Venting Emotions	3	.86
Spending Money	2	.93

Note. * One item was dropped from scale to increase reliability.

Internet Use. Researchers have created several ad hoc measures of Internet use. For this research, the categories of Internet use were derived from several informal Internet use measures. Two dimensions of Internet use were of interest: different ways participants use the Internet and what they considered to be the most important use of the Internet for them. To measure these two dimensions, two different questions were asked. The first question (Appendix A, question 7) allowed participants to select as many uses (up to 12) of the Internet that were applicable to them. The second question (Appendix A, question 8) asked participants about the most important use of the Internet to them. For this second question they were presented with the same 12 items in the previous question as possible choices but were only allowed to select one.

Results

Objective 1: Loneliness and coping strategies.

A. Correlates of coping strategies and loneliness. A bivariate Pearson's correlation was computed between the 28 coping strategies and loneliness. Of the 28 coping strategies measured, 19 of them had significant correlations with loneliness at the $p < .01$ level and two had significant correlations with loneliness at the $p < .05$ level (see Table 4). Acceptance ($r = .54, p < .01$) and suffering ($r = .45, p < .01$) had the two highest positive correlation scores with loneliness whereas active coping and planning ($r = -.38, p < .01$) and positive reinterpretation ($r = -.35, p < .01$) had the two highest negative correlation scores with loneliness. Most of the coping strategies used in the scales were shown to have significant correlations with loneliness.

Table 4

Correlates of coping strategies with loneliness

Coping Strategy	Positive Correlates with Loneliness	Coping Strategy	Negative Correlates with Loneliness
Acceptance	.54**	Active coping and planning	-.38**
Suffering	.45**	Positive Reinterpretation	-.35**
Use internet	.41**	Emotional Social Support	-.31**
Withdrawal	.40**	Admiration of self	-.24**
Sit and think/do nothing	.36**	Exercise/Walk	-.22**
Taking drugs	.28**	Instrumental Social Support	-.19**
Start to cry	.25**	Use of God	-.17**
Sleep more	.24**	Aesthetics	-.07
Daydream	.23**	Competition	-.03
Being alone	.22**	Spend money	-.02
Power and revenge	.15**		
Love and closeness	.15**		
Go movies/watch TV	.12*		
Eat more than usual	.11*		
Listen to music	.08		
Venting emotions	.06		
Work or study	.02		
Work on hobby	.01		

Note. * $p < .05$. ** $p < .01$.

B. Factor analysis and the creation of coping categories. A factor analysis with a varimax rotation set to extract three factors was done on the 28 different coping strategies (see Table 5). Extracting more than three factors using factor analysis did not yield factors that held any theoretical significance.

Table 5

Factor Analysis of Coping Strategies

Factor 1: <i>Rumination and Passive-Avoidant Coping</i>		Factor 2: <i>Emotion expression and Social coping</i>		Factor 3: <i>Constructive Active Coping</i>	
	Factor Loading		Factor Loading		Factor Loading
Suffering	.70	Emotional Social Support ⁺	.74	Work on hobby [^]	.66
Withdrawal [*]	.70	Venting	.74	Exercise/Walk [^]	.60
Acceptance	.65	Instrumental Social Support ⁺	.74	Listen to music [^]	.58
Sit and think/Do nothing [^]	.53	Start to cry [^]	.56	Work/study [^]	.55
Use Internet	.53	Love and closeness	.54	Positive reinterpretation ⁺	.53
Take drugs ⁺	.53	Admiration of self	.54	Active coping and planning	.48
Daydream	.50	Spend money [^]	.48	Competition	.32
Sleep more [^]	.47	Use of God [*]	.36	Aesthetics	.35
Power and Revenge	.46				
Being alone [*]	.41				
Eat more than usual [^]	.32				
Go to movies/watch TV [^]	.30				

Note. *Coping strategies used by Rokach and Brock (1998). [^]Coping strategies used by Rubenstein and Shaver (1982). ⁺Coping strategies used by both.

The first coping category, *rumination and passive-avoidant coping* (RPA), contains 12 coping strategies. Two of these 12 coping strategies had weak factor loadings on RPA coping. Rumination applies to the thoughts and cognitions that dwell on more negative aspects of loneliness, such as suffering and acceptance. Passive-avoidant refers to the use of passive or subdued behaviors that avoid dealing with the problem of loneliness in this type of coping (e.g., sleep more). The second coping

category, *emotion expression and social coping* (EES), had 9 coping strategies that loaded on this factor with one coping strategy having a weak loading. Most of these coping strategies entail coping with loneliness by some social mechanism or through an expression of emotion. The third coping category, *constructive active coping* (CA), contained 8 coping strategies. Two of these 8 coping strategies had a weak factor loading on this coping category. These coping strategies involved behaviors and cognitions that attempted to solve the problem of loneliness or coped with loneliness in an active fashion. RPA coping explained the greatest amount of variance (15.9%), followed by EES coping (14.3%) and CA coping (7.1%). Overall, the model explained 37.4% of the variance.

C. Coping categories and its relation to loneliness. The scores of the respective coping strategies for each coping category were summed to create a composite score for each coping category. A bivariate Pearson's correlation was then calculated for the three coping categories along with the level of loneliness (see Table 6). RPA coping had the strongest correlation with loneliness ($r = .55, p < .01$) and was the only coping category that had a positive correlation with loneliness. This suggests that lonely persons use RPA coping heavily and/or that this coping strategy increases loneliness. EES coping had a significant weak correlation with loneliness ($r = -.13, p < .05$) and CA coping had the strongest negative correlation to loneliness ($r = -.30, p < .01$). Interestingly, EES coping had a significant correlation to both RPA coping ($r = .19, p < .01$) and CA coping ($r = .45, p < .01$), but RPA coping and CA coping were not significantly correlated with each other.

Table 6

Intercorrelation between coping categories and loneliness

Subscale	1	2	3	4
	(n = 353)			
1. Loneliness	-	.55**	-.13*	-.30**
2. RPA coping		-	.19**	-.10
3. EES coping			-	.45**
4. CA coping				-

Note. * $p < .05$. ** $p < .01$.

Objective 2: Culture, loneliness and coping strategies.

A. and B. Differences between coping strategies, loneliness and nationalities.

The means between the two nationalities for loneliness and the three coping categories were compared through four separate t-tests. No significant differences were found for any of these four t-tests. This was probably due to the lack of statistical power to gain significant differences between the two nationality categories since collectivistic societies were a small proportion of the sample.

Objective 3: Developmental approach to loneliness and coping strategies.

A. Correlate between loneliness and age. A bivariate Pearson's correlation between age and loneliness was computed. There was no significant correlation between age and loneliness. An ANOVA test also was computed between age categories (adolescent, young adult and adult) and loneliness to see if there were significant differences between age categories for reported levels of loneliness. The overall model was not significant at the $\alpha = .05$ level.

B. Changes in coping categories between age categories. When a bivariate Pearson's correlation was computed between coping categories and age, two coping categories were significantly related to age. EES coping was one ($r = -.20, p < .01$) and RPA coping was the other ($r = -.12, p = .02$). CA coping did not appear to have any relation to age. The other two correlations, however, suggest that these two coping strategies are used more among the younger population.

ANOVAs were then calculated between the different coping strategies and the age categories to see exactly where these differences lie (i.e., in adolescents, young adults or both). Table 7 shows that EES coping is the only category that is significant.

Table 7

Analysis of Variance of coping categories for age categories.

Coping strategy	Adolescent Mean	Young Adult Mean	Adult Mean	<i>F</i>	<i>p</i>
RPA Coping	21.08	20.56	18.80	1.53	.22
EES Coping	33.42	33.19	29.03	3.83	.02
CA Coping	22.17	23.69	21.88	1.83	.16

Post Hoc multiple comparison Scheffé tests yielded significant differences between adolescent and adult ($p = .04$) and young adult and adult ($p = .05$) for EES coping. This suggests that adolescents and young adults use EES coping significantly more than adults.

Objective 4: Internet use, loneliness and coping strategies.

A. Coping with loneliness using the Internet. The results from Table 4 show that use of the Internet as a coping strategy (measured by the additional coping item) is significantly positively correlated with loneliness ($r = .41, p < .01$). Table 5 also shows that the Internet as a coping strategy factors well into the coping category, RPA coping and had the third highest loading on that factor.

B. Differences in the level of loneliness for different uses of the Internet. Two different dimensions of using the Internet were measured, namely, regular uses of the Internet and the most important use of the Internet for a participant. There were 12 separate items for different uses of the Internet and t-tests were performed on these 12 to determine if, within any item, there was a significant mean difference in the level of loneliness. Table 8 displays the results.

Table 8

T-test of loneliness mean differences by Internet Use

Use of Internet	Percentage of Yes Responses (N=353)	Mean Difference		<i>t</i>	<i>SD</i>
		Yes	No		
Work	49.29	20.72	18.25	2.52*	.98
Entertainment	77.34	17.68	20.04	-2.02*	1.17
News/Weather	50.71	19.07	19.92	-8.58	.99
Reference Information	67.71	19.39	19.56	- .16	1.06
Instant Messaging	57.79	19.76	19.32	.44	1.00
Email	95.18	19.65	19.55	- .39	.70
Chatrooms	24.36	19.01	21.03	-1.77	1.15
Newsgroups	15.58	18.95	22.53	-2.65**	1.35
School Related Activities	42.78	21.57	16.74	5.01**	.96
Surfing the Internet	49.01	17.36	21.74	-4.57**	.96
Purchasing	38.81	20.06	18.63	1.42	1.01
Playing games	31.73	19.22	20.12	- .85	1.06

Note. * $p < .05$. ** $p < .01$.

Persons who reported regular uses of the Internet for newsgroups, surfing and entertainment had a significantly higher mean score of loneliness than those who did not. Also, persons who reported uses of the Internet for work and school-related activities had a significantly lower mean score of loneliness than those who did not use the Internet for these purposes.

Using ANOVA, a test was done to see if there were significant differences between the 12 responses in the single item variable, the most important uses of the Internet, for participants and the level of loneliness. The model was close to significant, $F(11, 330) = 1.736, p = .07$. We can see from the means plot (see Figure 1) that the important uses of the Internet for lonely persons corresponds closely with their ordinary uses of the Internet for newsgroups and surfing. An interesting change from ordinary uses of the Internet to the most important use is playing games. As denoted in Table 8 playing games did not have significant loneliness mean difference for ordinary use. Therefore whether or not people used the Internet for gaming on a regular basis was not related to their level of loneliness. However, when it is considered as the most important use of the Internet, it ranks in the top three loneliness means. Therefore if Internet gaming is of particular importance to a person, that person is more likely to be lonely.

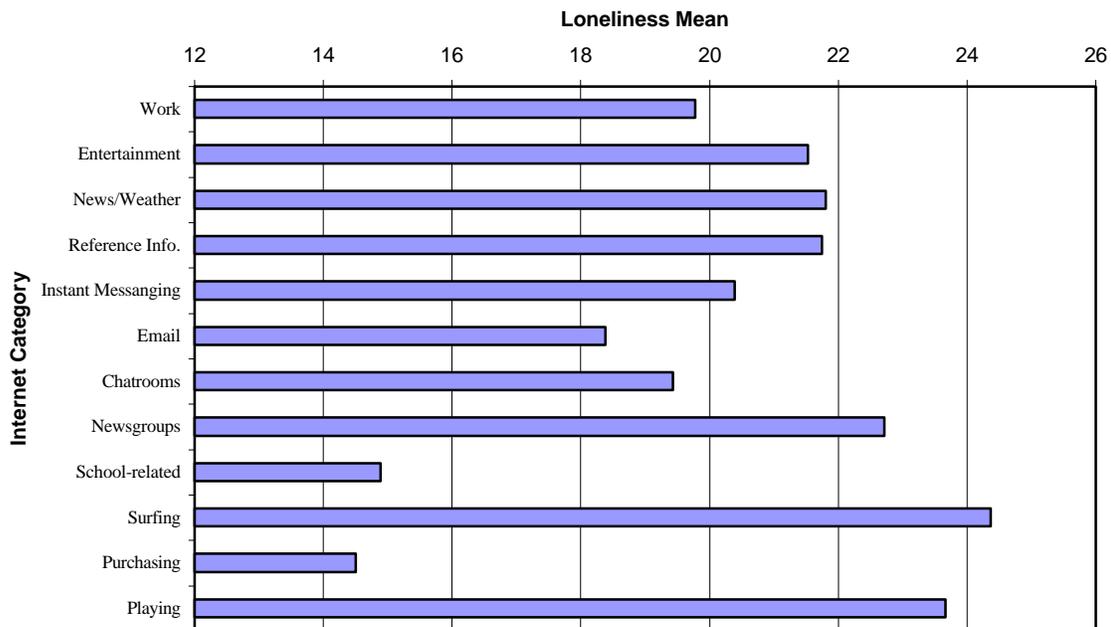


Figure 1. The loneliness means plot of important use of Internet for participants.

C. Different coping categories associated with different uses of the Internet.

Separate t-tests were done on the different uses of the Internet with the different coping categories to discern if there were differences between them. Table 9 shows the results.

Table 9

T-test of coping categories mean differences by Internet Use

Use of Internet	RPA Coping		EES Coping		CA Coping	
	No	Yes	No	Yes	No	Yes
Work	21.75	18.56**	31.85	32.05	22.06	23.14
Entertainment	17.68	20.04*	32.08	31.91	23.43	22.35
News/Weather	19.91	20.44	32.21	31.69	22.90	22.30
Reference Information	21.16	19.71	33.18	31.37	22.14	22.81
Instant Messaging	19.63	20.58	29.67	33.62**	22.81	22.43
Email	21.41	20.12	36.38	31.73	24.18	22.51
Chatrooms	19.52	22.22*	31.42	33.59	22.57	22.65
Newsgroups	19.89	21.72	32.31	29.99	23.05	20.12*
School Related Activities	21.45	18.48**	28.97	35.94**	21.72	23.76*
Surfing the Internet	17.95	22.50**	32.04	31.85	23.02	22.15
Purchasing	21.06	18.79*	32.45	31.16	22.64	22.52
Playing games	19.18	22.33**	31.64	32.62	22.66	22.46

Note. * $p < .05$. ** $p < .01$.

There seems to be a definite relationship between coping categories and Internet use. RPA coping shows strong relationship to entertainment, chatrooms, surfing the Internet, and playing games. EES coping is related to instant messaging and CA coping is related to newsgroups and school-related activities.

Summary

Study 1 provided some useful results. It was successful in obtaining three coping categories, which were made up of new coping strategies as well as coping strategies used in previous research. These three coping categories were all significantly related to loneliness. Also, these coping categories showed some discrimination among age with RPA and EES coping being associated more with adolescence and young adults. No clearly meaningful results were obtained from the analysis of the distribution of coping categories by nationality. Lastly, the coping categories were effective in discerning differences in Internet use, illustrating how different ways of coping with loneliness is associated with different ways of using the Internet. RPA coping also contained a factor,

which suggested that people who use RPA coping will also use the Internet to help cope with their loneliness as well. The discussion section will further review some of the results obtain in Study 1.

STUDY 2

Method

Sample

Poems and narratives from 180 people were collected through online searches for the word “loneliness”. It was possible that a person could have had more than one poem or narrative in the analysis but the unit of analysis was limited to the person rather than the poem or narrative.

Procedure

The poems and narratives collected online were used to provide information about the levels of loneliness, the subjective experiences of loneliness, and coping strategies of the website creator. Poems and narratives were collected from personal homepages/websites. Personal websites means that the website is not associated with a business, company or any other institution. The websites are publicly available and are usually geared towards strangers viewing them (as reflected, for example, in the use of guest books). The websites were limited to specific web hosts, namely *Tripod*, *Angelfire* and *Geocities*. The web hosting provided by these companies is free and can be utilized by anyone who has access to the Internet. They contain computer programs that can assist persons interested in putting up a website but don't know how to (e.g., knowledge of HTML is not required). This ensured that the participant base was not unnecessarily limited.

To find and collect loneliness poems, searches were conducted on the specific web host domains and the search results were viewed sequentially to obtain poems and narratives. While the collection was not random, the researcher did not selectively choose poems either. Only the following search results were excluded: addresses of websites that no longer existed, results that entailed things other than poems (e.g., pictures about loneliness) and results that referred to web pages with unoriginal material (that is material not created by the website maker). Once a web page containing what was perceived to be an original loneliness poems or narrative (most of these pages mentioned that the website creator was the author of the poem/narrative), they were copied and collected, along with the URL of the website. Each author was assigned a unique number, and all poems obtained from that website were assigned that number.

Coding.

Three major themes were coded in these poems and narratives: the cause of loneliness, the experiences/descriptions of loneliness, and coping strategies used. The researcher did all coding. Coding took place in two parts. The first part, involved open coding, whereby poems and narratives were analyzed and common themes and descriptions that emerged were assigned a code. A later refinement of codes was done through progressive readings to produce a list of representative and independent codes. Throughout the coding process, themes that were associated around causes, descriptions, and ways of coping with loneliness were coded. The categories mentioned in Objective 5 were the established codes derived from the poems and narratives. In order to properly identify categories in the poems and narratives, a description of each category was formed, along with a collection of common examples of the category. The end result was a list of inductively derived categories of causes of loneliness, descriptions of loneliness and coping strategies, along with a description of each category and some common examples found in the poems and narratives (see Table 10).

The second part of the coding involved event coding. If a poem or narrative possessed one or more of the derived categories, a note was made in the codebook for that poem or narrative of the presence of all the categories found. Hence it was possible for one poem or narrative to be coded under several categories. The code merely represented the presence or absence of that category for each poem or narrative. Because of this coding system, it was possible to obtain the frequency of each category over all 180 poems and narratives.

Results

Objective 5: Phenomenological approach to loneliness and coping strategies.

A. and B. Derived categories and their frequencies. In all, 24 different categories were found. Below (Table 10) is the list of categories, their frequencies, along with their descriptions, and common example phrases. The table is arranged according to the themes causes of loneliness, descriptions of loneliness and coping strategies. Within each theme, categories are arranged by the number of people whose poems/narratives mentioned the particular code.

Table 10

Categories, frequencies, descriptions and excerpts of poems and narratives.

Category	Description	Excerpts
Causes of Loneliness		
1. No Social Network (<i>n</i> = 93)	A lack of friendships or people, especially people who care for and understand the person.	lack of support, no one around, isolation, lack of steady friendships, invisible, solitude, alone, no one understands you,
2. Abuse or Rejection (<i>n</i> = 39)	An expressed feeling of being abused, mistreated or rejected by others	used and abused, treated as a pest, hated, lied to, unloved, burnt by those around me, abandoned, neglected, play those stupid games, rejection, I have been called horrible names, feelings of neglect, I became the butt of a joke.
3. Broken heart (<i>n</i> = 35)	A feeling of being rejected by a loved one	my heart shattered into a million pieces, broken heart, he doesn't love you, the one you love has gone away, my heart it's now crushed
4. Missing someone (<i>n</i> = 22)	The expressed feeling of missing a significant someone	missing you, I wish I could be with you, I want to be in your arms, I miss my friends
5. Misfit/ unable to fit in (<i>n</i> = 13)	Expressions of feeling different from others or unable to fit into the status quo	black pearl in a box of shining jewels, I wish I was more like everyone else, I cannot be loved, you simply won't fit, I am just an outsider looking in, not "popular"

Table 10 cont.

Category	Description	Excerpts
Descriptions of Loneliness		
1. Pain (<i>n</i> = 101)	Anything described as painful or is implied as being painful (e.g. broken, bleeding).	pain, hurt, sorrow, suffering, ache, depression, sadness, torn up, broken, bleeding
2. No Direction, Purpose (<i>n</i> = 74)	A feeling of being lost, confused, or not knowing	Lost, drowning, blinded, being nowhere, lack of meaning, darkness, lack of understanding, clueless, no where to turn, night, I don't know
3. Nothingness (<i>n</i> = 60)	A feeling of emptiness or nothingness	void, emptiness, nothingness, black hole, something missing, abyss, hollow, incomplete, empty space
4. Trait loneliness (<i>n</i> = 42)	A ever-present sense of feeling lonely	years of loneliness, feeling never goes away, inescapable, all the time, always there, no exits,
5. Being Overwhelmed (<i>n</i> = 41)	A feeling or sense of being overwhelmed or reaching one's limits in dealing with an emotion	Overwhelms, I don't know how much longer I can take this, taking too much, slowly drowning in a sea of despair, torn me apart, I'm about to burst, close to breaking
6. No control (<i>n</i> = 34)	Having a sense of not being in control of one's emotions, wishes or desires	emotion that betrays, takes the will away, steal your soul, binds you in chains and robbing you, being a prisoner, forces outside our control, paralyzing

Table 10 cont.

Category	Description	Excerpts
7. No emotion (<i>n</i> = 34)	A state of not feeling anything or any emotions	cold, void of true feelings, no life, frozen, icicle princess, chill
8. Scared or Afraid (<i>n</i> = 29)	A feeling of being afraid or scared of something, usually of loneliness or of being rejected	fear, loneliness is the scariest thing there is, frightened that I'll never see you again, fear of disappointing, dread, afraid to [cry], scared [of apathy]
9. Anger/ hatred (<i>n</i> = 20)	Expressed feelings of anger or hatred, usually against a person or loneliness itself	I am fucking pissed off, all the hate remains, I hate you with love, hatred, anger, I hate being alone, drive a person mad with anger, the world of hate, raging calmness, I hate people
Coping with Loneliness		
1. Desire for someone (<i>n</i> = 77)	The expressed desire for someone, usually believed to be their cure for loneliness	longing for someone by my side, all I really need is someone to care, I wish everyone could have someone, someone to come along and be my one true friend & love
2. Crying (<i>n</i> = 73)	Experiences related to crying	cry, tears, weep
3. Hiding feelings (<i>n</i> = 36)	A desire to hide one's painful feelings or feelings of loneliness	I feel pain no one dares to show, can't seem to bare, I lock the pain away in the vault of my heart, your pain you have to hide, my secret loneliness, a professional faker, a mask, can't let people see the pain, secret tears, I keep all my feelings to myself

Table 10 cont.

Category	Description	Excerpts
4. Inactivity (<i>n</i> = 33)	Expressions of periods of low physical activity	sit and watch, sit inside, sit in corner, lay in my bed, sit and wait, sit alone and wonder, curl up in a ball
5. Withdrawal (<i>n</i> = 25)	A pulling away from reality, having or living in a dream.	run away, teapped in a fantasy world, dream, denial, wishes, an illusion, an envelope you can send yourself into
6. Death (<i>n</i> = 23)	Descriptions of death, or wanting to commit suicide	loneliness can kill, killing myself to get away, I'm fascinated with death, death I can accept, I shall die, looking by the suicide mystery, I'm dying, suicide for 2
7. Religion (<i>n</i> = 13)	Religious expressions, usually in response to feeling lonely	in His hand he helps me, pray for a miracle, oh god I hope I'm wrong, oh god...do you know, find yourself praying to God, Jesus is the light, I hope and pray
8. Sleep (<i>n</i> = 12)	Poems mentioning sleep especially as a way of coping with loneliness	I don't use sleep as a way of rest, cry yourself to sleep, you close your eyes in restful sleep, crying myself to sleep, I fall asleep with you on my mind, I fell asleep, the sandman comes

Causes of loneliness. From the categories derived, five categories stood out as possible causes of loneliness. These were in order of frequency mentioned: no social network, abuse or rejection, broken heart, missing someone, and misfit. No social network was by far one of the most pervasive themes mentioned by the authors. Very often the authors mentioned that there were people around to talk to, but somehow these

people weren't considered appropriate sources of social support. There was a lack of closeness. Abuse and rejection came from several sources: parents, peers and past or present romantic partners. The idea of being a misfit or being unable to fit in seemed closely tied to being abused and/or rejected. Other causes of loneliness were directly tied to a romantic partner or significant other, whether it was missing someone through a consciously chosen decision, by circumstance or by having one's heart broken. Very often when a broken heart was mentioned, there would have also been a description of missing that person as well. Overall, loneliness seemed to be caused by a lack of close friends/social network due to a variety of reasons suggested by the other four categories (abuse or rejection, broken heart, missing someone, and misfit) as possible causes of this lack of social network.

Descriptions of loneliness. Eight descriptions seemed to be associated with the experience of loneliness. They were in order of frequency: pain, no direction/purpose, nothingness, trait loneliness, being overwhelmed, no control, no emotion, scared/afraid and anger/hatred. Pain was the most frequently mentioned category out of all the categories of loneliness found in the analysis of the poems and narratives. It is clear that loneliness was a painful experience for these individuals. So painful at times, that some people described it as overwhelming and for some it seemed to last a long time as highlighted in the trait loneliness category.

A feeling of having no direction or purpose was the second most frequent category and was associated with being lost or confused. Nothingness was usually a feeling that occurred when the authors felt a lack of social support around them, and so this void or emptiness was formed. Other authors felt a lack of control over their emotions, and described their emotions as betraying them, or locking them up, keeping them prisoner and so forth. It was as if their emotions had a life of their own. In some cases, loneliness was personified, as in the poem, "Loneliness is a tall, dark man." Loneliness was also associated with feeling no emotions, usually described as cold. One case explicated stated the inability to feel emotions and resembled some kind of psychic numbness.

The last two categories were being scared or afraid and anger and hatred. Usually feelings of being scared and afraid were associated with authors' fear of being alone.

One individual expressed an almost pathological need to be in the proximity of someone at all times. The associated feeling was that of a lack of security, which may take on special significance if the person lives in a hostile environment. For those who expressed feelings of anger or hatred, it is usually expressed against loneliness itself. In some cases, though, it was expressed against people (i.e., I hate people).

Coping mechanisms. There were a variety of coping mechanisms mentioned in the poems and narratives. These were, in order of frequency mentioned in the poems and narratives: desire for someone, crying, hiding feelings, inactivity, withdrawing, death, religion, sleep, use of drugs and pushing others away. Most people thought that if they had someone special in their lives their loneliness would dissipate. This would make sense since most authors perceived that their loneliness was coming from a lack of social network or a sense of alienation. This thought seemed to be a conscious expression of their desire to fill their void or nothingness. The second most frequent coping category, crying, reflected another dimension of loneliness, namely, how painful it is. Perhaps one of the first and most common reactions to pain is crying. It would make sense, therefore, that crying would appear so frequently.

One interesting coping strategies mentioned by the authors was hiding feelings. Authors expressed hiding their feelings particularly because the expression of such feelings was not socially acceptable. It made them seem weak in an environment where they wanted to appear strong. Authors talked about being a professional faker, or wearing a mask so as to appear acceptable.

Some coping strategies suggested a general ‘pulling away’ from the painful experience of loneliness. These included, withdrawing, death, sleep and use of drugs. Living in a dream world, or constructing dreams (such as the perfect mate, the knight in shining armor) were central ideas in withdrawing. Also mentioned was suicide and death as a means of escaping loneliness. Sleep and use of drugs also fell within this general mode of coping as well.

Another interesting category is inactivity. Surprisingly a lot of authors revealed periods of inactivity such as sitting and thinking, lying in bed, and curled up in a ball. What were they thinking about? The general experience associated with this category was thinking about loneliness itself. Most of the times authors were self-reflective, trying

to make sense out of why they feel lonely (what did I do to deserve this punishment?) or thinking about their life in general. It was associated to the ideas of being lost or having no direction/purpose and no control. Feeling powerless or paralyzed might have caused inactivity, but also authors seemed to be trying to figure out what this loneliness was, where it came from and what they could have done about it.

The use of religion as a means of coping was a way of appealing to a 'higher power' to somehow bring about supernatural changes, in some cases, so desperately needed. For example, praying that the right person will come along. In one case, God was used as a substitutive replacement for having people around, i.e., God was the perfect person they were looking for and filled the void for social interaction. Other uses of religion simply involved an exclamation appealing to God, e.g. "oh God..."

The last, relatively, infrequent category was pushing others away. In this instance, people were perceived to be the source of pain and there was more desire to be alone rather than with someone else.

Summary

This study revealed 24 different subjective categories of causes and descriptions of loneliness and coping strategies. The most frequent cause of loneliness was not having the desired social interaction. Descriptions of loneliness suggested that loneliness is painful, prolonged, paralyzing, and evokes both fear and anger. The coping strategies mentioned in most cases tended to avoid dealing with the problem of loneliness directly and instead sought activities and thoughts that tended to deflect the experience of loneliness.

DISCUSSION

This research is focused on developing a model of coping strategies used by lonely persons. In this study three coping categories were derived from the data, namely, rumination and passive-avoidant coping (RPA), emotion expression and social coping (EES), and constructive active coping (CA). These coping categories are similar to the coping categories found in previous research by Rubenstein and Shaver (1982) and Rokach and Brock (1998). CA coping is similar to increased activity (Rokach & Brock, 1998) and active solitude (Rubenstein & Shaver, 1982) because CA coping, increased activity, and active solitude deal with the idea of increased physical activity or involvement in a constructive pursuit. Likewise, EES coping is comparable to social support network (Rokach & Brock, 1998) and social contact (Rubenstein & Shaver, 1982) because EES coping, social support network, and social contact, to some degree, share coping that involves talking to people or social communication. Finally, RPA coping resembles distancing and denial (Rokach & Brock, 1998) and sad passivity (Rubenstein & Shaver, 1982) because they contain similar behaviors (sit and think, take drugs, sleep more, watch TV, being alone, etc.) and thoughts (withdrawal). Therefore there were similar coping strategies in each coping category from the previous researches to this project. The only exception is the coping strategy crying, which is located in sad passivity for Rubenstein and Shaver (1982) but is located under EES coping in the present study. The EES category created by the factor analysis, included coping strategies that not only suggested social outreach, but also strategies that expressed emotion, as for example, venting. In both a theoretical and statistical sense, crying as a coping strategy had a better fit in EES coping than in RPA coping hence the discrepancy with the previous study by Rubenstein and Shaver (1982).

These three coping categories seem to fall along a continuum from RPA coping (negatively correlated with loneliness) through EES coping to CA coping (positively correlated with loneliness). While these may not be the only coping categories used by lonely people, they may highlight important points along a continuum of coping with loneliness. Below is a more detailed discussion of the individual coping categories.

Constructive Active Coping.

Within this category, two different types of coping strategies were used: activity and problem-focused types of coping strategies. The activity type of coping involved increased physical behaviors (such as walking, exercising) or behaviors that were constructive or productive (such as working on a hobby, work or study). This was also reflected through Internet use. CA coping had a strong relationship to school-related activity, which was a more constructive Internet behavior. The problem-focused coping strategies suggested that these persons may also be trying to find ways to solve their loneliness problem. Previous research has focused more on the active part of this coping and has not tapped into the idea that these individuals also tend to focus on their problem of loneliness and finding ways to deal with and overcome it. People who use this coping category, therefore, take an active part in trying to solve their loneliness problem and is reflected in CA coping having the largest negative correlation with loneliness.

Within the content analysis of poems, none of the categories found were similar to the coping strategies constituting CA coping. This would be expected given the fact that the people who use this coping category probably experience loneliness rather infrequently and to a lesser extent than others thus do not feel compelled to document their experiences. A similar trend was detected in the amount of questionnaires answered. Fewer questionnaires were received by persons who use CA coping. This may be because the website had appealed more to individuals who felt lonely.

Emotion Expression and Social Coping.

This coping category had a significant but weak correlation with loneliness. Adolescents and young adults utilized this coping category more than older adults. It included coping strategies that not only deal with reach out or talking to other persons but also as a means of expressing emotions. People who used EES coping also tended to use the Internet for instant messaging. This would seem to follow since EES coping involves some use of social outreach and instant messaging has an almost exclusive social function. For example, instant messaging usually involves talking with friends and relatives rather than strangers, and can mimic the properties of a telephone (i.e., real time communication via typing or voice messaging, or even video and voice messaging).

Because instant messaging involves talking with known people it may be safe to assume that conversations can safely go to an intimate level.

The use of both emotional and instrumental social support coping strategies suggested that these people may have talked to others, not only to express how they feel or get emotional support, but also to try to get advice about what to do. Persons who used EES coping may also be talking to others in an attempt to increase the quality of the friendships that they have or to gain new meaningful friendships as attested to by the coping strategy, love and closeness. This was especially true if the attempt is to get the friendship to a romantic level. Overall the EES coping category was characterized by a reaching out to others.

One coping strategy within EES coping, love and closeness, provided a link to the content analysis data in Study 2. Love and closeness involved thinking about and desiring to have someone close to the lonely person. The poems and narratives shared a similar strategy called desire for someone. This desire for someone was usually phrased in a romantic context. Participants were usually looking for a romantic relationship, in a romantic relationship that was somehow suspended (for example, the partner is in another country working) or coming out of a romantic relationship. Therefore, EES coping, while not entirely, may to some degree be taking place within a romantic context, manifested through the shared strategies of desire for someone and love and closeness. The relationship between EES coping and one type of romantic context, namely looking for a romantic relationship, is similar to the coping category, social support network (Rokach & Brock, 1998), which included seeking romantic connections.

Given the potential conflictual nature of romantic relationships, if EES coping was taking place within a romantic context, it was understandable that these persons have a tendency to express their emotions particularly through crying and venting. Even the strategy religion in one sense, represented an exclamation in response to an overwhelming feeling to turn to God for help.

This research adds to past research by expanding on the relationship between EES coping and the romantic context. Study 2 gives a variety of romantic contexts that includes not only looking for a romantic partner but also missing a romantic partner or having one's heart broken.

Rumination and Passive-Avoidant Coping.

RPA coping had the strongest significant negative correlation with loneliness. It also had a significant but weak negative correlation with age suggesting that this coping category was used more by youth. This coping category involved both cognitions and behaviors. This study consolidated the two categories of sad passivity and distancing and denial outlined in previous research by taking into account both behaviors and thoughts. It also added other coping strategies such as suffering, acceptance, using the Internet, daydreaming, and power and revenge. Persons in this category adopted a mode of coping that perpetuated the state of loneliness they were in. Most of the behaviors described are either harmful to the person (e.g. taking drugs, overeating) or involved a passive state (e.g. sitting, being alone). The rumination described persons reflecting more on the experience of loneliness itself, rather than on what to do about it. In this sense it is possible that a bi-directional relationship between loneliness and RPA coping may exist, creating a vicious cycle.

The results showed that there is a significant relationship between using the Internet as a means of coping with loneliness and the level of loneliness. This confirms the finding of Kraut et al. (1998) that says there was some relationship between loneliness and Internet use. However, this study also showed that using the Internet to cope with loneliness loads well in the RPA coping factor. What this means was that persons who are using the Internet to cope with loneliness tended to use other RPA coping strategies as well. The data suggested that lonely people, who used the Internet as a way of coping with loneliness, systematically used the Internet in a way that will help them avoid dealing with the problem of loneliness, i.e., they used it as a means of escaping the problem. In particular this research found that using the Internet for surfing, chatrooms, entertainment and playing games was associated with both higher levels of loneliness and RPA coping.

This is congruent with previous research by Korgaonkar and Wolin (1999), which suggested that lonely people use the Internet as a way of escaping their loneliness. In particular, the Internet was used to “relieve boredom and stress” (Korgaonkar & Wolin, 1999, p. 63) that involved not only activities they defined as entertainment, but also email and chatrooms as well. The categories surfing and playing games used in this project

seemed to fall within their entertainment category as well. Chatrooms, while initially appearing as something social, may in fact have more entertainment utility than social utility. It is quite possible that conversations rarely ever reach a deep intimate level, unless it is with a person or group of people who have been talking in chatrooms over a period of time.

These results add to previous research by not only demonstrating the translation of RPA coping into a practical example of use of the Internet but also questioning Kraut et al. (1998) findings. If people were using RPA coping even before using the Internet, then using the Internet may have just amplified a process that was already taking place. Therefore loneliness and use of the Internet may be moderated by RPA coping.

The content analysis helped to illuminate RPA coping. Content analysis can help in the understanding of RPA coping in two ways. Firstly, there was some overlap in categories found in the poems and narratives in Study 2 and the coping strategies in RPA coping in Study 1, therefore providing further insight into the coping strategies in this category. Secondly, by describing possible causes and experiences of loneliness one can get a sense of the mechanism behind why a person may choose RPA coping over other types of coping.

Several of the coping strategies found in the poems and narratives overlapped with the coping strategies within RPA coping. These coping strategies included, inactivity, withdrawal, sleep, drugs and pushing others away. The term inactivity was used instead of sit and think/do nothing, because other behaviors fell under inactivity as well, such as, being curled in a ball or lying in bed. Sit and think/do nothing therefore, was a general state of passivity, involving a variety of different behaviors.

Added to the coping strategies are ideas of hiding feelings and death. Death was another category describing escaping behavior and thoughts. Both sad passivity and distancing and denial had an element of suicide or attempted suicide within them. Hiding feelings seemed to come out of the social undesirability of displaying feelings of loneliness. However, the question of whether individuals truly deny their loneliness (as suggested by Rokach and Brock, 1998) or whether they are merely cleverly hiding it from outsiders arises. More research is needed into this particular problem.

The poems and narratives provided several possible causes of loneliness, all revolving around the idea of having insufficient social networks. In particular however, two causes strongly suggested that the cause is beyond the person's control, abuse and rejection, and misfit. In cases where an individual felt powerless to change the cause of the situation, even if it was only perceived, may have resulted in RPA coping. Because there seems to be little escape from their loneliness, the EES and CA coping would have been ineffective strategies. It makes little sense to constantly try to solve a problem a person perceives an unsolvable (CA coping) nor does it make sense to use EES coping, since these people had little social networks to begin with in the first place. The end result may be a heavy reliance on RPA coping, reflected in particular by the coping strategy, acceptance.

The descriptions of experiences of loneliness also provided useful insights as well. While there was no test to link certain experiences to RPA coping, certain experiences appeared to fit into RPA coping. Specifically, experiences such as painful, no direction/purpose, nothingness, no control, no emotion described what loneliness may have felt to some people leading to RPA coping. Previous research has not empirically pointed to the categories of no direction/purpose, nothingness, no control and no emotion. The category no control can be linked to the previous paragraph's idea of having little control. In this case, while a person may be unaware of the cause of his/her loneliness, there can still be that sense of having little control over his/her feelings of loneliness causing an over-reliance of RPA coping. The idea of no emotion was a state of lethargy or not having the energy to do more active coping. It could also have been withdrawing from the painful experience of loneliness. Finally, the category no direction/purpose, may in some ways help to explain why people who use RPA coping report spending time sitting and thinking. Perhaps it is an attempt to make sense of the situation they find themselves in, a situation they seem to have little understanding about.

Summary of coping strategies.

These three coping strategies provide some insight into how different people cope with loneliness. This study adds to previous research in several different ways: by suggesting a continuum of coping strategies, showing both the behavior and cognition in each strategy, providing a possible link between the idea of romance and EES coping,

linking Internet use to loneliness and coping (and questioning previous research in this area), providing phenomenological descriptions of both EES and RPA coping and suggesting possible mechanisms behind RPA coping and loneliness (i.e. why certain people would choose internal avoidant coping). Also this study suggests that perhaps therapeutic attempts at loneliness should focus on coping, especially RPA coping, and try to pull lonely individuals from one end of the continuum to the other, while being mindful of the processes behind RPA coping.

The results, however did not document a mechanism that would determine individuals' use a particular coping strategy. It is plausible that a third unseen factor may help to explain the correlations between loneliness and coping categories. This third factor could explain why some individuals choose certain coping categories over others. The data from poems and narratives provided some information regarding a possible mechanism for choosing RPA coping, but further empirical research needs to be done. Also unclear was the direction of the relationship between loneliness and the coping categories. The correlations between loneliness and coping categories suggested that the level of loneliness may affect the way people cope with it, but also the way people cope with loneliness can affect the level of loneliness. It is unclear whether the relationship is truly bi-directional, or it operates only in the direction of loneliness to coping. Longitudinal research is needed to determine the direction of the relationship.

Strengths and Limitations.

Two important issues arising out of the methodology need further deliberation. These two issues are collecting data over the Internet and using a joint quantitative and qualitative approach. Below is an analysis of the strengths and weakness of adopting this methodological approach.

Advantages of Internet data collection. One benefit of Internet data collection was the low cost of recruiting participants at an international level. With focused effort and planning, the Internet can be a powerful, yet inexpensive tool in conducting cross-cultural studies.

Study 1 collected data via an electronic questionnaire posted on the Internet. Electronic questionnaires have several advantages over the traditional pen-and-paper approach, especially if items on the questionnaire are close-ended. In one instance, it

allows for the collection of responses that are unambiguous and complete. That is to say, the researcher knows exactly what responses were chosen, and also the electronic questionnaire contains internal checks to ensure that all necessary questions are answered and answered appropriately. For close-ended questions, the electronic questionnaire also eliminated the need for coding and data entry, since responses given were already stored electronically. When dealing with large numbers of questionnaires, this increases efficiency and cuts down on time spent on data checking, coding and data entry.

From Study 2, one can see that loneliness feeds creativity. However, it can be difficult to gain access to these creative expressions of loneliness because they may be sparse among large numbers of people and are usually kept very personal and hidden. The Internet provides a medium of self-expression without the risk of being identified, making it safer and thus more likely that these loneliness expressions usually kept hidden away, to be revealed to others. And by providing a search function, the Internet allowed the researcher to find in a short space of time wholesome lists of these expressions spread across thousands of websites.

Disadvantages of Internet data collection. Although Internet data collection provided some benefits, there were some shortfalls as well. Especially with regards to Internet data collection, the authenticity of the data collected is always suspect. For this study there was no foolproof test to ensure that the data collected was authentic. However, several confirmatory procedures were in place to reduce erroneous data. One procedure asked respondents to indicate if they had answered the questionnaire before. Another procedure utilized an Internet counter, which had the ability to track the country where incoming visitors were accessing the website. This was matched against responses for nationality in the questionnaire to determine if there were any discrepancies. Though not comprehensive, these procedures did provide some evidence that the data came from a variety of different and independent sources.

It would be difficult to obtain a sample of participants based on random selection using the Internet. Given this fact, the most viable procedure for getting participants was through self-selection. However, self-selection had the unfortunate consequence of biasing the sample in several ways. Respondents therefore were more likely to be lonely, young, female, and from the United States. Nationality was so skewed, for example, that

there was limited ability to detect significant differences. One possible way of correcting this is to collect a sample of sufficient size to allow for statistical analysis.

Due to the financial constraints of the researcher, the questionnaire was only posted in English, preventing non-English speakers from answering this questionnaire. One can see from the frequencies of nationality that it was more likely that participants from English-speaking countries would answer the questionnaire (e.g. US, England, Australia).

Another problem is the ethics behind gathering data over the Internet, especially with regards to collecting data from minors or asking sensitive questions. Within the United States, the Children's Online Privacy Protection Act makes it illegal to collect information from children younger than 13 years without parental consent. The researcher decided to use a safe minimum age of 14 years. In addition, the nature of the Internet makes it difficult to collect verifiable parental consent from minors. In order to avoid having to ask for parental consent from the 14 plus sample, all sensitive questions on the original questionnaire had to be dropped. Sensitive questions were also dropped because communication was not face to face and there was limited ability to provide follow up support in cases where it would have been needed. The poems and narratives provided a means of circumventing some of these problems.

Benefits of a combined qualitative and quantitative approach. This research incorporated both the use of a questionnaire and content analysis. A combination of both methods provided useful insights into loneliness and coping strategies, more so than an individual contribution from just one method. Questionnaire data were useful in finding general trends and patterns whilst the poem and narrative data were particularly useful in furthering the understanding of loneliness, EES and RPA coping and possible mechanisms behind lonely people's choice of RPA coping.

FUTURE DIRECTIONS

This research suggested that there were three major coping strategies or coping categories used by lonely persons when coping with their loneliness. These three coping categories were also a consolidation of previous research that had been done on coping strategies. The coping categories also seemed to fall along a continuum from RPA coping, through EES coping to CA coping. However this research raised a number of questions that need to be answered in future research.

First is the direction of the relationship between loneliness and coping strategies. It appeared from the present study that there may be a bi-directional relationship between loneliness and coping strategies, especially for RPA coping, however this cannot be confirmed given the cross-sectional methodology used here. Future studies need to investigate how loneliness and coping strategies relate with each other and whether or not this relationship is bi-directional.

Secondly, there is a question of how lonely people choose which coping mechanism they will use. For example, what makes one person choose RPA coping and another choose CA coping? Some initial theorizing had been done here, but it is not accompanied by systematic investigation. Previous theorizing and empirical investigations in this area have been lacking. It may be related to such things as locus of control, feelings of powerlessness, the intensity of the painful loneliness experienced and the ability of the person to do something to alleviate their loneliness.

Thirdly, there seemed to be three common coping categories found among lonely individuals. It may be possible that these three coping categories may be related to the ways in which these individuals form attachments to other people. Shaver and Hazan (1989) have done some initial work into attachment styles among the lonely and have found that avoidant attachment and anxious/ambivalent attachment are associated more with loneliness than secure attachment. Could there be a one to one relationship between attachment styles and coping, so persons who exhibit avoidant attachments also RPA cope, those who exhibit anxious/ambivalent attachments use EES coping and those who have secure attachments use CA coping? This would be an interesting area of future research.

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APPENDIX A: ABRIDGED QUESTIONNAIRE¹

If you have answered this questionnaire previously and want to redo the questionnaire please enter the random number assigned when you first answered this questionnaire (remember to include a minus sign if one was present):

If you have answered this questionnaire previously, but you can't remember your 5-digit number, please check here:

In this first section I would like to get some information about yourself:

1. Age:
2. Sex: (*Male/Female*)
3. Nationality (or the country where you have spend most of your life):
4. Ethnic Background:(not required)
5. Highest Level of Education: (*None, Primary Education, Secondary/High School, Technical/Vocational College*)

Next I would like to get some information about your internet habits:

6. How regularly do you use the internet?

Several times a day
Once a day
Several times a week
Once a week
Several times a month
Once a month
Several times a year
This is my first time on the Web

7. What do you use the internet for (check all that apply)?

Work
Entertainment
News/Weather/Sports
Reference Information
Instant Messaging
Email
Chat Rooms
Newsgroups
School-Related Activities
Looking for new and interesting sites on the web

¹ Please note that responses to items have been italicized and bolded items identify the different coping strategies mentioned in the text but were not on the questionnaire.

Purchasing or shopping at online stores

Playing Games

Other (please specify):

8. Out of the 13 activities listed above, which one activity has the most importance in your personal life (please select one)?

Work

Entertainment

News/Weather/Sports

Reference Information

Instant Messaging

Email

Chat Rooms

Newsgroups

School-Related Activities

Looking for new and interesting sites on the web

Purchasing or shopping at online stores

Playing Games

Other (as stated above)

9. Please give the URL addresses of your five favorite websites you usually visit while on the internet:

- a.
- b.
- c.
- d.
- e.

Please read the following introduction:

Sometimes when people experience loneliness they help themselves feel better by thinking certain thoughts or having certain wishes. Please indicate how much of each of the following thoughts have made or do make you feel better when you are feeling lonely. Please answer all questions.

Responses: Hardly at all, A little bit, Somewhat, Quite a lot, Extremely

Aesthetics

10. Thinking about the beauties of nature, like a beautiful sunset

11. Thinking about beautiful art or music
12. The thought of traveling to interesting places
13. Remembering a wonderful love story

Use of God

14. Knowing that God will take care of me
15. Knowing that God will protect me
16. Knowing that God loves me

Power and Revenge

17. The thought of people obeying me because of the powerful position I have reached
18. The thought of really putting someone down who thinks he/she is great
19. Becoming so powerful that no one could ever hurt me again.

Admiration of Self

20. Thinking of how someone appreciates my good qualities
21. Thinking about the good deeds I have done and will do in the future
22. The thought of how good I am for being able to take my troubles
23. Thinking about how considerate I am of others, even when they are not nice to me
24. The thought of being popular and well-liked

Withdrawal

25. Locking myself away (mentally) someplace where I won't get hurt
26. Thinking of hiding myself away within a mental shell or wall where I am safe and no one can hurt me
27. Mentally withdrawing to a safe place where people cannot hurt me
28. Being alone
29. The thought of taking something (marijuana, alcohol or drugs) that would make me feel better

Love and Closeness

30. Having someone love me a tremendous amount
31. Finding someone who I can love a great deal
32. Being close with someone who would know all my wishes and who could help sustain me

33. Being so close with someone that I would know their every wish and they could know all of mine

Suffering

34. Feeling sad about myself and my life

35. Thinking about all my suffering

36. Thinking that everything is a dream, so I will wake up some day and everything will be alright

37. Thinking about how other people are worse off than I am

Competition

38. Being a star athlete

39. Thinking about the excitement or pleasure in watching sports

Please read the following introduction:

There are a lot of others ways to deal with loneliness. This part of the questionnaire will ask you to indicate what you generally do and feel when you experience loneliness.

Obviously, different events bring out somewhat different responses, but think about what you usually do when you feel lonely especially when loneliness becomes a problem or burden for you.

Responses: I usually don't do this at all, I usually do this a little bit, I usually do this a medium amount, I usually do this a lot.

Active coping and planning

40. I take action to try to get rid of the problem

41. I concentrate my efforts on doing something about it

42. I try to come up with a strategy about what to do

43. I think about how I might best handle the problem

Instrumental Social Support

44. I try to get advice from someone about what to do

45. I ask people who have had similar experiences what they did

Emotional Social Support

46. I talk to someone about how I feel

47. I try to get emotional support from friends and relatives

48. I discuss my feelings with someone

Positive Reinterpretation

49. I look for something good in what is happening

50. I try to see it in a different light, to make it seem more positive

Acceptance

51. I can learn to live with it

52. I give up the attempt to get rid of my loneliness

53. I admit to myself that I can't deal with it, and quit trying

Venting of Emotions

54. I get upset and let my emotions out

55. I let my feelings out

56. I feel a lot of emotional distress and I find myself expressing those feelings a lot

Work or Study

57. I turn to work or my studies to take my mind off things

Listen to music

58. I listen to music to help relieve my loneliness

Exercise or Walk

59. I do exercises or go for a walk

Work on hobby

60. I work on a hobby, like reading or playing music to take my mind off things

Start to cry

61. I start to cry when I feel lonely

Sit and think/do nothing

62. I usually sit and think or do nothing

Eat more

63. I eat more than usual

Go to movies/watch TV

64. I go to the movies or watch TV, to think about it less

Daydream

65. I daydream about things other than this

Sleep more

66. I sleep more than usual

Spend money

67. I go shopping when I feel lonely

68. I spend money when I feel lonely

Use the Internet

69. I use the internet when I feel lonely

Please read the following introduction:

For each of the twelve statements below, please indicate how much you feel this particular way:

Responses: I never feel this way, I rarely feel this way, I sometimes feel this way, I often feel this way

Loneliness measure

70. I lack companionship

71. There is no one I can turn to

72. I feel left out

73. I feel isolated from others

74. I am unhappy being so withdrawn

75. People are around me but not with me

76. There are people who really understand me

77. My friendships are superficial

78. No one really knows me well

79. I am an outgoing person

80. I can find companionship when I want it

81. I feel lonely