Suicide Probability: A Study on Reasons for Living, Hopelessness and Loneliness

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SUMMARY

**Purpose:** The purpose of the current study is to specify the reasons that hold people clinging to life; to investigate their suicide probability, and to describe the relationship of these variables with other variables such as hopelessness and loneliness, taking age, education and other socioeconomic variables into consideration.

**Method:** The subjects were 683, randomly chosen adolescents and adults between the ages of 15-65, residing in Ankara and İzmir. The assessment instruments were Reasons for Living Inventory, Suicide Probability Scale, UCLA Loneliness Scale, and Beck Hopelessness Scale. The data were analyzed using the SPSS for Windows 10.00.

**Results:** The analyses revealed that the group aged between 15-25 years reported fewer reasons for living, higher suicide probability, more hopelessness and loneliness, compared to older ages. Moreover, women reported more reasons for living, along with less loneliness and hopelessness. The regression analyses pointed out that age, education level, hopelessness, loneliness and reasons for living are predictive variables for suicide probability.

**Conclusion:** As it was previously reported the current study also revealed that age is an important variable to be taken into consideration when suicide probability is being determined. In addition, was also found to be an important variable, at least for this Country. In parallel with the results of the studies in the relevant literature, reasons for living, hopelessness, and loneliness were found to be significant predictors of suicide probability.

**Key Words:** Suicide, aging, education, loneliness

INTRODUCTION

Suicidal behavior may be seen in all age groups, but its incidence among young people has increased in recent years. As a result, scientific interest has been focused on this subject and many clinical studies have been conducted. Especially age factor has been emphasized in these studies. Suicide rates are different for each country, but the increase among young people is very prominent versus other age groups (Rotheram-Borus et al. 1996, Lubin et al. 2001, Bilici et al. 2002, Ö zgüven and Sayılı 2003). The same situation is valid for suicidal thoughts as well (Kjoller and Helweg-Larsen 2000, Mazza 2000). Another interesting aspect of the literature related with suicide is increasing concern on prophylactic factors like reasons for living. Risk factors like hopelessness and loneliness have been extensively studied for many years.

While studies on suicides were generally focused on "negative" cognitions which accompanied the situation, the "Reasons for Living Inventory" which has been developed by Linehan and colleagues (1983) dealt with "positive" cognitions which avoided suicides. In recent studies, it has been showed that "reasons for living" concept was an important cognitive factor which played a role in suicidal behavior in both adolescents (Pinto et al. 1998, Langhinrichsen-Rohling 1998) and elderly people (Bender 2000). There are some similar
studies from our country (Şahin et al. 1998).

According to cognitive theory, suicide is thought to be an exit of hopelessness and despair and if a person is full of hopelessness, suicidal risk increases significantly (Minkoff et al. 1973). It has been reported that there was a strong relationship between hopelessness and suicidal intention (Beck and Weishaar 1990). Hopelessness level was highest in patients who tried to suicide and depressive patients were in the second line in a Turkish study in which patients who tried to suicide at least once, psychiatric patients without suicide and normal individuals were compared with each other (Durak 1994).

Loneliness was considered as another variable of suicide concept (Stravynski and Boyer 2001, Pinquart 2003). Peplau and Perlman considered loneliness as a consequence of modern life and they thought it somehow different from living alone. They defined it as an unfavorable psychological state which was a consequence of recognition of the difference between present and wishful social relation (Demir 1989). Socio-demographic variables like age, gender and marital status were found to be important factors for loneliness in different studies (Demir and Tarhan 2001, Kim 2001, Pinquart 2003). Loneliness was reported to be related with suicidal behaviors in both normal individuals and patients (Eskin 1996, Stravynski and Boyer 2001).

The purpose of the current study is to specify the reasons for living and suicide probabilities of people between 15-65 years old while taking socio-demographic variables like age, gender and education level into consideration and to determine the relationship between them and thoughts like hopelessness and loneliness.

METHOD

Sampling

The subjects were totally haphazard 683 individuals who were between 15-65 years old and residing in Ankara and İzmir. Some younger subjects were students from University of Ankara Faculty of Language, History and Geography and University of Dokuz Eylül, Faculty of Education in Buca. Other adolescent and adult subjects were from close environment of the investigator and these students (i.e. personnel of the universities, housekeeping employees, close relatives or friends). Mean age was 27.48 (SD=11.06). The ages were between 15-25 in 54.5%, 26-40 in 31.3% and 41-65 in 14.2% of the subjects. There were 430 (63%) females and 253 (37%) males. Education levels were 47.3% for primary-high school graduates and 52.4% for college graduates. Two subjects (0.3%) did not state education levels.

Data Handling Instruments

Reasons for Living Inventory (RFL). This inventory has been developed by Lynehan and colleagues in order to determine positive and negative reasons which avoid suicidal behaviors (1983). It depends on self-reporting. In a study which compare 20 different scales in evaluation of suicidal behaviors, it has been found as one of few which had adequate psychometric characteristics in both patients and normal individuals (Range and Knott 1997).

In our study, we used culturally adapted RFL which included 70 questions (Durak et al. 1993, Şahin et al. 1998). Points were given in Likert type between 1-6 for each question (totally 70-420).

Suicide Probability Scale (SPS). It is a self-report scale which consists 36 questions which are evaluated in Likert type between 1-4. This scale has been developed by Cull and Gill (1988) in order to evaluate suicide risk in adolescents and adults. Higher points indicate higher risks. It has been shown as valid and reliable in our country (Batgün and Şahin, 2003). This scale is also one of few which have adequate psychometric characteristics (Range and Knott 1997).

UCLA-Loneliness Scale (UCLA-LS). This scale has been developed in order to determine the perception of loneliness degree (Russell et al.1980). It consists 20 questions which are answered between 1-4 (total point interval is between 20-80). Higher points indicate more intense feelings of loneliness. Validity and reliability studies have been completed (Demir 1989).

Beck Hopelessness Scale (BHS). It is a self report scale which consists 20 questions. It has been developed by Beck and colleagues (1974) in
order to determine pessimist future expectations. The answers should be "true" or "false" and reflect negative expectations. Point interval is between 0-20. Validity and reliability studies have been completed (Durak 1994, Durak and Palabỹkoglu 1994).

**Procedure**

Scales which were defined above were shuffled randomly following demographics sheet and formed a battery. This batteries were given to subjects individually or for college students publicly in borders of Ankara and İzmir. Subjects were briefly informed about the objective of the study. Voluntarily participation was a must. Total performance duration varied between 20-30 minutes. Data analysis was performed via SPSS for Windows 10.0.

**FINDINGS**

**1. Analysis of Demographic Data**

In the first stage changes of scale points were evaluated for "age", "education" and "gender" variables. Age groups were determined as 15-25 (n=372), 26-40 (n=214) and 41-64 (n=97), education groups were determined as primary-high school (n=323) and university (n=97) during analyses. Consequently, ANOVA analysis was performed with three variables; age (3) x education (2) x gender (2). Effects of these demographic variables over other variables like reasons for living, suicide probability, hopelessness and loneliness will be evaluated separately below.

Only gender variable was effective over total points of Reasons for Living Inventory [(Female: x=312.14, SD=52.08; Male: x=301.59, SD=54.90); F(1, 680)= 5.15, p< .02]. Same gender effect was present in "moral and religious obstacles" [(Female: x= 40.08, SD= 10.84; Male: x= 36.32, SD= 12.02); F(1, 680)= 11.12, p< .001], "responsibility and love versus family and friends" [(Female: x= 56.73, SD= 11.80; Male: x= 54.13, SD= 12.33); F(1, 680)= 6.86, p< .01] and "fear from death" [(Female: x= 12.14, SD= 4.09; Male: x= 10.74, SD= 4.26); F(1, 680)= 11.16, p< .001] subscales. When mean points of these subscales were taken into consideration, females got significantly higher points than males.

Education variable was effective over "general optimism" [(Primary-high school: x= 139.08, SD= 28.60; University: x= 146.80, SD= 23.78; F(1, 680)= 10.58, p< .001], "moral and religious obstacles" [(Primary-high school: x= 40.05, SD= 10.24; University: x= 37.45, SD= 12.32); F(1, 680)= 14.53, p< .001], "fear from suicide and negative consequences" [(Primary-high school: x= 37.85, SD= 9.31; University: x= 35.19, sd= 10.56; F(1, 680)= 12.14, p< .001] and "devotion to nature and life" [(Primary-high school: x= 17.80, SD= 5.17; University: x= 18.68, SD= 4.46); F(1, 680)= 3.40, p< .05] subscales.

Age variable caused no change in total points of RFL, but was effective over "moral and religious obstacles" [(F(2, 680)= 5.59, p< .001], "fear from suicide and negative consequences" [(F(2, 680)= 3.29, p< .02 ] and "devotion to nature and life" [(F(2, 680)= 3.90, p< .02 ] subscales. In order to determine causative subgroups for this age effect Scheffe test was performed and it was shown that points of 15-25 age group in "moral and religious obstacles" and "devotion to nature and life" subscales was lower than points of 41-65 age group. A similar relation was valid for "fear from suicide and negative consequences" subscale; points of 26-40 age group was lower than points of 41-65 age group.

When total and subscale points of Suicide Probability Scale were evaluated according to age, education and gender variables, it was shown that all three variables were effective over total and "rage" subscale points. Total [(Females: x= 68.30, SD= 13.45; Males: x= 70.68, SD= 13.32); F(1, 680)= 3.40, p< .05] and "rage" subscale [(Females: x= 17.23, SD= 4.15; Males: x= 18.08, SD= 4.24); F(1, 680)= 7.99, p< .005] points of males were significantly higher than females. Similarly total [(Primary-high school: x= 72.20, SD= 14.05; University: x= 66.47, SD= 12.28); F(1, 680)= 24.90, p< .000] and "rage" subscale [(primary-high school= x= 18.39, SD= 4.54; University: x= 16.78, SD= 3.70); F(1, 680)= 20.95, p< .001] points of primary or high school graduates were significantly higher than university graduates. That may be considered as suicide probability of university graduates was lower than primary or high school graduates. When age variable was evaluated via Scheffe test, total SPS points [F(2, 680)= 6.28, p< .001]
of 15-25 age group (x = 70.52, SD = 14.12) were higher than 41-65 age group (x = 65.55, SD = 12.93); similarly rage subscale points [F(2, 680) = 14.43, p < .001] of both 15-25 age group (x = 18.13, SD = 4.21) and 26-40 age group (x = 17.36, SD = 4.09) were higher than 41-65 age group (x = 15.74, SD = 3.88). With another saying, suicide probability of individuals between 15-40 years was higher than 41-65 age group. Only education variable was effective over "negative ego and being exhausted" [(Primary-high school: x = 41.72, SD = 9.01; University: x = 38.51, SD = 8.10); F(1, 680) = 16.03, p < .000] and "break out clinging to life" [(Primary-high school: x = 14.17, SD = 3.93; University: x = 12.91, SD = 3.51); F(1, 680) = 17.26, p < .000] subscales of SPS. Points of primary-high school graduates were higher than university graduates in both subscales.

Gender and education variables were found to be effective over total and three subscale points of Beck Hopelessness Scale. Males got higher points than females in total [(Females: x = 3.69, SD = 4.01; Males: x = 4.60, SD = 4.36); F(1, 594) = 3.89, p < .05], "feelings and expectations about the future" [(Females: x = .62, SD = 1.13; Males: x = .85, SD = 1.31); F(1, 652) = 4.07, p < .05], "loss of motivation" [(Females: x = 1.71, SD = 1.70; Males: x = 2.10, SD = 1.82); F(1, 648) = 4.47, p < .03] and "hope" [(Females: x = 1.20, SD = 1.52; Males: x = 1.56, SD = 1.76); F(1, 628) = 4.61, p < .03] subscales. That meant hopelessness points of males were higher than females. A similar tendency was present for education variable. Total [(Primary-high school: x = 4.84, SD = 4.64; University: x = 3.37, SD = 3.61); F(1, 594) = 16.20, p < .001], "feelings and expectations about the future" [(Primary-high school: x = .84, SD = 1.35; University: x = .59, SD = 1.05); F(1, 652) = 6.41, p < .01], "loss of motivation" [(Primary-high school: x = 2.26, SD = 1.93; University: x = 1.49, SD = 1.48); F(1, 648) = 36.06, p < .001] and "hope" [(Primary-high school: x = 1.62, SD = 1.80; University: x = 1.08, SD = 1.40); F(1, 628) = 9.63, p < .002] subscale points of primary-high school graduates were higher than university graduates.

When points of Hopelessness Scale were evaluated according to age variable, points of "feelings and expectations about the future" subscale [F(2, 653) = 6.25, p < .001] were higher in 15-25 age group (x = 1.24, SD = 1.20) than both 26-40 age group (x = .74, SD = 1.18) and 41-65 age group (x = .54, SD = 1.02).

When interaction between age, education and gender variables and UCLA-Loneliness Scale was taken into consideration, it was shown that gender [(Females: x = 35.01, SD = 10.69; Males: x = 37.24, SD = 10.63); F(1, 680) = 8.04, p < .005] and education [(Primary-high school: x = 37.34, SD = 11.08; University: x = 34.61, SD = 10.05);
F(1, 680) = 12.66, p < .000] had basic effects. Loneliness points of males and primary-high school graduates were higher than females and university graduates.

**II. Correlations Between the Scales**

Correlation coefficients between points taken from scales are presented in Table I.

It may be seen at the table that there are significant correlation coefficients between total and subscale points of Suicide Probability Scale which vary between r= .72 (p < .001) and r= -.54 (p < .001). It is parallel with our expectations that as suicide probability increases, hopelessness and loneliness increase as well and reasons for living decrease.

**III. Regression Analysis**

In order to determine the variables which effect Suicide Probability, regression analysis in hierarchic order is performed that is convenient with the purpose of the study. Results are summarized in Table II.

In order to evaluate possible effects of demographic variables like age, education and gender, these variables are included in the equation at the first line. Later, hopelessness is in the second, reasons for living concept is in the third and loneliness is in the fourth line. It may be seen that "socio-demographic variables" are definitive when considered together [Freg (3, 591) = 13.54, p < .000], moreover "education" (t = 4.77, p < .000) and "age" (t = 3.76, p < .000) have independent contributions. Hopelessness variable which takes place in the equation in the second line is shown to be a predictor [Freg (6, 588) = 68.64, p < .000] with age and education. Moreover, "feelings and expectations about the future" (t = 5.16, p < .000), "loss of motivation" (t = 6.47, p < .000) and "hope" (t = 2.89, p < .004) have independent effects on prediction. "Reasons for living" which takes place in the third line has prediction power [Freg (12, 582) = 51.95, p < .000] when considered with other variables from previous lines. Other variables like "general optimism" (t = 5.59, p < .000), "responsibility and love versus family and friends" (t = 3.29, p < .001) and "fear from negative consequences of suicide" (t = 5.85, p < .004) have independent effects as well. "Loneliness" which is fourth and last line variable has predictor power when considered with other variables [Freg (13, 581) = 66.34, p < .000].

**DISCUSSION**

When previous studies about suicide concept are reviewed, it may be seen that being young (15-24 years old), excessive hopelessness and loneliness feelings and having less reasons to live
are important risk factors. In this study, gender and education variables are added and a series of analyses are performed in order to determine their relationships with suicide probability.

The results of variance analyses revealed that people between 41-65 years reported more reasons to continue living than other age groups. These reasons included moral and religious obstacles, devotion to nature and life and fear from negative consequences of suicide. Miller and colleagues (2001) reported a similar result. They compared people between 17-34 years old with people between 60-95 years old and found that older individuals received higher points from subscales of moral values, anxiety about children and responsibility versus family. With other words, older people presumed more reasons not to suicide. In other studies it was shown that older people received higher points in "moral and religious obstacles" subscale of RFL. This finding may be explained by prohibition of suicidal behaviors in most religions and more extensively use of religious belief by older people as a coping strategy (Koenig et al. 1988). Lower points in "devotion to nature and life" subscale of younger individuals was an interesting finding. This subscale was not present in original form of the scale. It was added in cultural adaptation study (Durak et al. 1993). So, we did not have any chance to compare our results with international studies. But it was reported that younger individuals received higher points during scale development procedures (Durak et al. 1993). Moreover, some of previous studies pointed out that environmental sensitivity was increasing among younger people (Şahin and Şahin 1995). As mean age of scale development population was close to mean age of our sampling, it might be considered as whether environmental and natural sensitivity among youth decreased or different reasons for living replaced this attitude in recent years. This concept should be taken into consideration in future investigations.

It was shown before that suicide risk was higher in young people (Dixon et al. 1992, Mazza 2000). Our results were consistent with this finding. In another Turkish study in which the same scale (SPS) was used, the results were similar; both total and rage subscale points of 14-24 age group were significantly higher than other age groups (Batıgün and Şahin 2003). The difference was more prominent in rage subscale. It was reported before that rage was an important predictor of suicide (Tardiff and Sweillam 1980) and common among younger individuals (Cairns et al. 1989, Werner and Crick 1999).

When points from Hopelessness Scale were evaluated according to age variable, it was shown that 15-25 age group received higher points from "feelings and expectations about the future" subscale. In another study which evaluated hopelessness and loneliness variables in adolescents, it was shown that individuals with higher hopelessness levels were focused on "feelings and expectations about the future" subscale (Page 1991). In our country adolescents from this age group are about to meet with university election exams and unemployment problem. Taking this point into consideration may lead to better understanding of higher points of young individuals from this subscale. It is well known that hopelessness plays an important role in suicidal action especially in adolescents (Wilde et al. 1992).

When points received from scales were evaluated for gender variable, our results were consistent with the literature. In a study with RFL, it was reported that females received higher points from "fear from suicide" and "moral obstacles" subscales (Range et al. 1993). In another study performed with college students, it was shown that total RFL, "responsibility versus family and friends" and "fear from suicide" subscale points of females were higher than males (Rogers et al 1996). Findings like stronger devotion to religious belief and more negative attitude against suicide among females supported our results (Canetto 1992, Stack 1983). Our results may help illumination of the literature finding which states completed suicides are less common in females. Some causes like having more dominant moral and religious beliefs and thoughts, stronger feelings and responsibilities about family and friends and fear from death may steer females to life devotion and lead them to stay apart from suicidal behaviors. Nonetheless, there are some other studies which could not find any difference between two genders for reasons for living (Connell and Meyer 1991, Langhinrichsen-Rohling et al.1998).
There are controversial findings about gender variable in studies which use Suicidal Thoughts Scale and Suicide Probability Scale. While some studies report that females have suicidal thoughts more commonly (Uçar 1999, He and Lester 2001), others do not state any difference between two genders (Eskin 1996, Kjoller and Helweg-Larsen 2000). One of previous studies performed in our country supports our findings. Tüzün (1997) reported that males had significantly higher points in his study which was conducted with Suicide Probability Scale. These findings form meaningful evidences about higher probability of suicides among males.

In our study hopelessness points were higher in males like suicide probability points as expected. Also in another study performed with a greater population, it was reported that hopelessness points of males were higher (Page 1991). Having more supports in life and more easily and frequent admission for professional aid may explain relatively low points of hopelessness and suicide probability of females (Canetto 1992).

Loneliness points of males were significantly higher in our study. This means males feel more lonely. Some data from the literature support this finding (Koenig et al. 1994, Hojat et al. 1999), but there are different findings as well. In some of them, it was reported that there was no difference between two genders (Lau et al. 1999, Demir and Tarhan 2001). In another study, it was reported that loneliness feelings were more prominent in young women than young men (Kim 2001). But, this condition was shown to be reverted by aging. It was reported that unmarried, divorced or widowed males expressed loneliness feelings more frequently than females at the same social status after joining of marital status variable (Pinquart 2003). Cultural characteristics are another important aspect in loneliness concept. For example, it was reported that loneliness points of Northern Americans were higher than Hispanics (Rokach et al. 2001). Loneliness points of individuals from three different cultures were compared; there was no difference between males and females in Northern America and Turkey, but females from Argentina received higher points than males (Rokach et al. 2000).

When effect of education variable on scale points was evaluated, we could not find any study which investigated the effect of this variable on reasons for living and suicide probability. But studies with suicide attempters revealed that lower educational level was a risk factor. In a study from Batman, it was reported that most of the suicide attempters were only primary school graduates or illiterates (Deniz et al. 2000). In another study which evaluated crisis cases with or without suicide attempts, it was shown that suicide attempters were more common in lower education levels (Özgüven et al. 2003). Nonetheless, in another study from China with a greater sampling size, education variable was not found related with suicidal thoughts (He and Lester 2001).

Education variable was not emphasized in American and European studies on suicidal behavior and its relations with hopelessness and loneliness variables. But in a review study it was reported that racial differences had some effect on education variable (Stack 2000). In their study performed in Turkey, Durak and colleagues (1993) reported that hopelessness points of primary school graduates were higher than university graduates.

In correlation analyses which were performed in order to determine the relationships between variables and their directions, it was found that there were expected relationships and significant coefficients between points of suicide Probability Scale, Reasons for Living Inventory, Beck Hopelessness Scale and UCLA-Loneliness Scale. These findings were consistent with the literature (Malone et al. 2000, Gutierrez et al. 2000, Stravynski and Boyer 2001, Heisel et al. 2003).

It should be remembered that as a consequence of regression analysis all variables together were found to be effective on suicide probability. Moreover, it was shown that most subscales were independent predictors as well. Hopelessness (Weishaar and Beck 1992, Burge and Lester 2001), reasons for living (Langhinrichsen-Rohling 1998) and loneliness (Blai 1989, Page 1991) were reported as important predictors of suicide behavior in different studies. Our study revealed that the additional effect of age and education variables should be taken into consideration. Relatively
lower levels of feelings and expectations about the future and protective factors like moral and religious obstacles and devotion to nature and life may be the reasons for higher suicide probability in individuals 15-25 years old.

The findings of this study which are commented in this section reveal that variables like reasons for living, hopelessness and loneliness are as important as socio-demographic characteristics in prediction of suicide behavior. If an individual is young and has a lower educational level; and at the same time has some hopelessness factors like "negative feelings an expectations about the future" and "inadequate motivation"; may report less reasons for living. It may be concluded that all of these factors increase suicide probability.

A recent study reported that suicide rates decreased in some European countries (Birt et al. 2003). But there are some other studies which state just the opposite both from our country (Deniz et al. 2001, Bilici et al. 2002, Özgüven and Sayil 2003) and abroad (Beautrais 2000, Bille-Brahe 2001, Hernandez et al. 2004). From this point of view, results of this study have vital importance in prevention of suicides. Our findings may provide clues in order to determine especially high risk groups. For example, screening high school and college students at the beginning of the semesters, may lead to determination of high risk individuals whose hopelessness and loneliness levels are increased and reasons for living are inadequate. Some education programs directed towards these individuals with high risk (to develop social and/or communication skills may prevent loneliness, group practices may provide being aware of own reasons for living) may lead to improvements in suicidal behaviors. Moreover, our findings related with gender variable may be used in determination of high risk groups and preparation of intervention programs. For example, higher points from "rage" subscale may awaken efforts to decrease "aggressive behaviors".

Reasons for living are important aspects of suicide prevention efforts which may be used independently in intervention programs. Studies performed with depressive patients revealed that having more reasons for living prevented suicidal thoughts in critical periods (Malone et al. 2000). In a study from our country, it was shown that RFL had reminding and recalling effects (Durak et al. 1993). Some individuals reported that they liked the content of the scale and might benefit from its statements by remembering their own reasons for living. From this point of view, the scale may provide people being aware of their tendency to negative thoughts and realizing the beautiful parts of life. This preventive effect was reported in the literature (Neyra et al. 1990, Osman et al. 1991).

Greatest limitation of this study was sourced from sampling characteristics. First, individuals of sampling were elected with haphazard method. So they did not reflect whole society. Moreover, most of the subjects (52.4%) were university students or graduates. Number of individuals at primary school level was inadequate. That was the reason why we divided the group into two as "primary-high school" and "university" in order to analyze education variable. There was no doubt that dividing the population into three as "primary school", "high school" and "university" would provide more detailed and safe data about education variable. A similar limitation was present for loneliness concept. Marital status was considered as an important aspect of loneliness concept. Being married, unmarried and widowed were reported to be related with loneliness feelings. Not handling marital status as a variable may be considered as another limitation of our study. Additionally, including another group of suicide attempters would provide valuable data about factors like reasons for living, hopelessness and loneliness which affected suicide probability. Taking these limitations into consideration and not making generalizations would be the right approach in evaluation of these findings. Further studies which include other variables related with loneliness concept like types of interpersonal relations or marital status are needed.
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