AN EXAMINATION OF SUICIDE PROBABILITY IN ALCOHOLIC IN-PATIENTS

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Abstract — Aims: This study evaluated correlations of self esteem, depression, and state–trait anxiety with suicide probability in alcohol dependence. Methods: The sample consists of 70 patients who were hospitalized in the Alcohol and Substance Abuse Treatment Unit in the Psychiatry Clinic of Ankara University between the years 1999 and 2000. Patients’ histories, the Suicide Probability Scale, the Coopersmith Self-Esteem Inventory, the Beck Depression Inventory and the Spielberger State–Trait Anxiety Scales were used. Correlation, linear regression and t-test statistical analyses were performed. Results and Conclusions: It was found that self-esteem, depression and trait anxiety predict suicide probability. Suicide probability was higher within the sub-sample with a history of a suicidal act in comparison to those without such a history.

INTRODUCTION

Suicidal behaviour is a universal problem related to a variety of factors (Gidis et al., 2000). It cannot be associated with a single causative element. Biologically based disturbances as well as disorders of psychological origin appear to have concurrent effects on the construction and development of suicidal behaviour. Particular constitutional personality features and genetic propensity deserve to be mentioned additionally, and interfering social life events and situations specifically play a role in the manifestation of suicidal behaviour.

Substance misuse and dependence exhibit a bidirectional cause–effect interaction. While suicidal behaviour may present itself as a primary feature, it can also appear as a secondary problem in alcohol and substance misuse. So, suicidal behaviour should be handled as an important problem in this patient group.

There are studies on the aetiological role of alcohol dependence in suicidal thought and act (Hawton et al., 1989; Miller et al., 1992). The effect of alcohol on the brain develops sometimes immediately, sometimes with time. This effect is always associated with the blood alcohol concentration level and with the persistence of this level, leading to complications in terms of attitudes, behaviours and mood. These appear as altered cognitive functions and thought processes, such as, for instance, impaired judgement and mood. The relationship between alcohol dependence and depression has received unequivocal acceptance (Miller et al., 1992; Ağırgün et al., 1994). Most studies examining the alcohol and suicide relationship have pointed to the concomitant existence of depression (Berglund, 1984; Cornelius et al., 1995; Harrison and Luxenburg, 1995; Overholser et al., 1997; Schuckit et al., 1997; Arıkan et al., 1999; Waller et al., 1999; Kelly et al., 2001). Thus, suicide should be evaluated in the course of alcohol dependence (Murphy et al., 1992). Furthermore, alcohol misuse leads to physical illness and disturbances causing feelings of incompetency and inefficiency in the individual, amounting to low self-esteem, despair in relationships and a feeling of failure. All of these situations contribute to the development of suicidal ideation and suicidal tendency (Dukes and Lorch, 1989; Kienhorst et al., 1990; Doğan, 2002).

Murphy et al. (1992) reported that life-time suicide risk in alcohol dependence is 2–4%, and various other authors reported rates of suicide varying between 11 and 50%. Also reported is that a quarter of those who commit suicide are alcohol-dependent. Comorbidity is a risk factor for suicide; depression relatively increases the risk of suicide in alcoholic patients. In addition, the rate of suicide associated with depression in alcohol-dependent individuals is stated as 15% by Murphy et al. (1992). Loss of self-esteem and negative self-image in alcohol dependence and hopelessness seen in both depression and alcoholism speed up the suicidal process (Dukes and Lorch, 1989; Malone et al., 1994; Cornelius et al., 1995; Arıkan et al., 1999). Beck et al. (1989) found a positive relationship between depression and suicidal intention in alcohol-dependent patients. Malone et al. (1994) detected that patients with a past history of suicide attempts had exaggerated tendencies toward anxiety, depression and disordered thinking. Again, Arıkan et al. (1999) found significant relationships between suicidal ideation, plan or act and levels of depression and anxiety (28.3%).

In a study by Mırsal et al. (1999), suicide behaviour in alcohol-dependent patients was examined and a significant relationship between depression and suicidal ideation/behaviour was found, whereas this was not true for state/trait anxiety levels and suicide. Rossow et al. (1999) reported that the rate of suicide attempt, rather than that of completed suicide, was significantly high in alcohol-dependent individuals. In conclusion, it can be said that the most frequent psychiatric symptoms in alcohol-dependants are depression and anxiety.

In the present study, the aim was to investigate the relationship between self-esteem, depression, state and trait anxiety levels and probability of suicide, and to determine the extent to which these factors predict suicide. In addition, another purpose was to search whether there was any difference in terms of suicidal act between those who had previous suicidal ideation and those who did not.

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SUBJECTS AND METHODS

Subjects

The sample consisted of 70 alcohol-dependent male patients (diagnosed according to DSM-IV criteria, American Psychiatric Association, 1994) without any organic psychiatric or psychotic disorders, who were hospitalized at the Ankara University Psychiatry Clinic, Alcohol and Substance Abuse Treatment Unit, between October 1999 and May 2000. Eighty per cent of the study population was determined to be free of any comorbid psychiatric disorder, whereas 20% were diagnosed to have a mood disorder, an anxiety disorder and/or a personality disorder. Mean age (± SD) for the sample was 41.6 ± 8.1 years (range: 28–75).

Sociodemographic variables, such as marital status, educational level and occupational status, were as follows: 46 patients (65%) were married, five (7.1%) were single, nine (12.9%) were divorced and 10 (14.3%) were separated.

Fourteen (20.0%) were elementary school, 19 (27.2%) were secondary school, 22 (31.4%) were high school and 15 (21.4%) were university, graduates. Thirty-nine were government officials, nine were labour workers, six were working in various non-governmental companies, 14 (20.0%) were retired, and two were unemployed.

Assessment

The following scales were used for assessment.

The Suicide Probability Scale (SPS). This was first developed by Cull and Gill (1990) and its validity and reliability studies for the Turkish population were performed by Tüççu (1996). This scale consists of 36 items and four subscales, namely hopelessness, suicidal ideation, negative self-assessment and hostility. The maximum and minimum scores are 146 and 30, respectively. The greater the score, the higher the probability of suicide.

The Coopersmith Self-esteem Inventory (CSI). This scale was developed by Coopersmith (1986) and adapted to the Turkish population by Tufan (1988). It consists of 25 items. A high score corresponds to high self-esteem in the individual (belief of the individual that he is skilled, successful and valuable).

The Spielberger State–Trait Anxiety Inventory Scale (STAI). This scale is made up of two separate scales originally developed by Spielberger et al. (1970). Its adaptation, validity and reliability studies for Turkey were done by Öner and Le Compte (1985). The State Anxiety Inventory assesses how one feels in particular situations at particular times, reflecting the anxiety one feels in specific situations. The Trait Anxiety Scale defines how one feels in general.

The Beck Depression Scale (BDI). This is a self-rating scale determining the level of depression, consisting of 21 items and originally developed by Beck (1961). It was adapted to the Turkish population by Hisli (1989).

Patients in the Alcohol and Substance Abuse Treatment Unit were detoxified during the first 5 days of their hospitalization with a benzodiazepine (diazepam), and an intravenous thiamine and nicotinamide combination treatment. In the following week, their psychological state was assessed by the aforementioned scales. Demographic information, as well as retrospective alcohol use history and details of suicidal history were taken.

Statistics

Each relationship between suicide probability and scores for self-esteem, depression, state and trait anxiety has been tested using Pearson’s correlational analysis. Linear regression has been used in analysing relationships among self-esteem, depression, state and trait anxiety and suicide probability. The suicide probability score was taken as the dependent variable. Finally, t-test for equality of means has been applied to compare suicide probability scores of those with and without a history of a suicidal act, as well as the scores of those with and without suicidal thoughts. SPSS for Windows computer program has been used for all statistical analyses.

RESULTS

The number of suicide attempters was determined as 12 (17.1%), half of whom (50%) reported more than one attempt. Routes of suicide were slicing the wrists (41%), ingesting a high dose of medicine (50%), gun-shot (8.3%), jumping from a height (8.3%) and ingesting an excessive amount of alcohol (16.7%). Eighty per cent of the study population were determined to be free of any comorbid psychiatric disorder, whereas 20% were diagnosed as having a mood disorder, an anxiety disorder and/or a personality disorder.

The relationship between CSI and SPS scores had a –0.64 correlation coefficient (Table 1). In addition, it was found that the CSI score significantly predicted suicide probability by 41%. Similarly, there was a relationship between the BDI and SPS scores with a correlation of 0.74 and the depression scores significantly predicted suicide probability by 53%.

The correlation coefficient between STAI and SPS scores was 0.56 (Table 1) and state anxiety scores predicted suicide probability by 56%. Again, the correlation coefficient between suicide probability and trait anxiety scores was 0.72, and trait anxiety predicted suicide probability by 51%.

As shown in Table 2, there was a significant difference between the suicide probability scores of patients with suicide thoughts and the scores of those without suicide thoughts ($t = -4.586$, $P < 0.0001$). Similarly, a significant relationship

<table>
<thead>
<tr>
<th>Scale</th>
<th>$r$</th>
<th>$R$</th>
<th>Beta</th>
<th>$T$</th>
<th>Significance ($P$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem</td>
<td>-0.64</td>
<td>0.41</td>
<td>-0.64</td>
<td>6.89</td>
<td>0.00001</td>
</tr>
<tr>
<td>BDI</td>
<td>0.73</td>
<td>0.53</td>
<td>0.73</td>
<td>8.72</td>
<td>0.00001</td>
</tr>
<tr>
<td>State anxiety</td>
<td>0.56</td>
<td>0.31</td>
<td>0.56</td>
<td>5.56</td>
<td>0.00001</td>
</tr>
<tr>
<td>Trait anxiety</td>
<td>0.72</td>
<td>0.51</td>
<td>0.71</td>
<td>8.35</td>
<td>0.00001</td>
</tr>
</tbody>
</table>

| BDI, Beck Depression Inventory; STAI, State and Trait Anxiety Inventory. |

<table>
<thead>
<tr>
<th>Group</th>
<th>$n$</th>
<th>Mean</th>
<th>SD</th>
<th>Significance ($P$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group with suicide thoughts</td>
<td>15</td>
<td>85.87</td>
<td>17.12</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Group without suicide thoughts</td>
<td>55</td>
<td>64.98</td>
<td>15.23</td>
<td></td>
</tr>
</tbody>
</table>

$t$-Value: –4.586.
was found between the history of the suicidal act and suicide probability ($t = 2.20, P < 0.01$) (Table 3).

A significant difference has been detected between SPS scores of patients with and without a psychiatric comorbidity (Table 4).

**DISCUSSION**

Various results were obtained about causes of suicide among alcohol-dependent individuals. Depression and anxiety exist significantly in this group (Tuğcu, 1996; Doğan, 2002). One's self-perception and the value assigned to oneself play a very important role in suicidal ideation and act. From this viewpoint, the relationship between self-esteem and suicide probability was investigated and this relationship was found to be significant, as self-esteem appeared to predict suicide probability by 1/3. The alcohol-dependent individual perceives himself as worthless, insufficient and unsuccessful in controlling the pattern and dosage of alcohol consumption as well as in evaluating results of his drinking behaviour. Given the risk for suicide, it is of great importance to evaluate the self-esteem of the alcoholic in-patient for determining the appropriate treatment approach.

Low self-esteem increases the probability of appearance of depressive symptoms. The significant relationship between self-esteem and depressive symptoms determined in this study is consistent with results of other authors (Beck et al., 1989; Miller et al., 1992; Arıkan et al., 1999; Mirsal et al., 1999). Alcohol dependence and depression are frequently concomitant, and it is accepted that depression is a consequence, rather than a cause. Doğan et al. (1990) proposed that depression could be a state of mood resulting from life-style and experiences. Another suggestion is that depressive mood could be a component of the whole withdrawal syndrome rather than an original psychopathology or a condition secondary to alcohol dependence. Another comment on the results of this study may be that 'self-directed aggression in alcohol-dependent subjects increases the risk of suicide' (Türkcan et al., 1999).

Another factor predicting suicide probability in alcohol dependence is anxiety experienced at the symptom level. The anxiety experienced by an individual in a particular context is defined as 'state anxiety, whereas the anxiety as an answer to how an individual feels in general' is defined as trait anxiety. These two types of anxiety were evaluated and their relationship to suicide probability was analysed. It was seen that the relationship between trait anxiety and suicide probability was highly significant, while the relationship between state anxiety and suicide probability was moderate. Again, trait anxiety predicted suicide risk much more strongly than state anxiety. In contrast, Mirsal et al. (1999) found that neither state nor trait anxiety could discriminate alcohol-dependent subjects with and without suicidal ideation. A high level of anxiety in alcohol-dependent patients is a biological as well as a psychosocial consequence of alcohol misuse. So, anxiety is an entity that gains a persistence in the life of the alcohol-dependent individual. This persistent pattern of anxiety in the alcoholic patient should be considered a risk for suicide.

Another result of this study was that suicide probability was higher among alcohol-dependent patients with suicidal ideation compared with those without. This is a finding consistent with that of Murphy et al. (1992), who reported that suicidal thoughts as well as lack of social support, major depressive disorder, unemployment, living alone, drinking too much during terminal phases, having medical problems, and talking about suicide were risk factors related to suicide probability.

Statistically significant higher suicide probability scores were found in the group with a comorbid psychiatric disorder, compared with those without a comorbid disorder. This result is similar to results from other studies (Suominen et al., 1996; Overholser et al., 1997; Waller et al., 1999; Kelly et al., 2001). However, the small sample size was a limitation of the present study, as it rendered performing statistical analysis on smaller groups after specifying comorbidity for each patient impossible.

This study indicates that suicide probability was higher among those with a history of a suicidal act, compared with those without such a history; this result is consistent with that of Malone et al. (1994). Menninger (1966) defined alcohol dependence as a chronic suicidal act; according to this definition, alcohol-dependent individuals prefer an apparently pleasurable way of destruction, rather than a direct way of suicide. Further studies which would determine risk factors directly responsible for suicide in alcohol dependence would add to our knowledge about suicide in this particular disorder.

**REFERENCES**


