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Original article

Correlations between interpersonal and cognitive difficulties: Relationship to suicidal ideation in military suicide attempters

L. Shelef [a], E. Fruchter [a], J.J. Mann [b], A. Yacobi [a,c,*]

[a] Mental Health Unit, Medical Corps, Israel Defense Force, Israel
[b] Division of Molecular Imaging and Neuropathology, Department of Psychiatry Columbia University, New York, NY, USA
[c] Geha Mental Health Center and Sackler School of Medicine, Tel Aviv University, 7 Ha'avoda Street, POB 323, Givea't Shemuel, Tel Aviv, Israel

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ABSTRACT

Background: Understanding suicidal ideation may help develop more effective suicide screening and intervention programs. The interpersonal and the cognitive-deficit theories seek to describe the factors leading to suicidal behavior. In the military setting it is common to find over- and under-reporting of suicidal ideation. This study sought to determine the relationship between these two models and determine to what degree their components can indirectly predict suicidal ideation.
Methods: Suicide attempters ($n = 32$) were compared with non-suicidal psychologically treated peers ($n = 38$) and controls ($n = 33$), matched for sex and age (mean 19.7 years). Pearson's analysis was used to quantify the relationship between the variables from the two models and hierarchal regression analysis was used to determine the explanation of suicidal ideation variance by these variables.
Results: Suicide attempters have more difficulties in problem-solving, negative emotion regulation and burdensomeness compared with their peers ($P < .001$). These variables are all closely correlated with each other and to suicide ideation ($r > \pm 0.5$; $P < .001$). Prior suicide attempt, loneliness and burdensomeness together explain 65% ($P < .001$) of the variance in suicidal ideation.
Conclusions: Suicidal ideation is strongly correlated with components of interpersonal and cognitive difficulties. In addition to assessing current suicidal ideation, clinicians should assess past suicide attempt, loneliness and burdensomeness.

1. Introduction

Suicide is one of the leading causes of death in young people, and the leading cause of death in the military in peacetime [1,18]. Two current theories of suicidal behavior are the interpersonal-psychological (IP) theory [14] and a cognitive-deficit model [10,16].

The IP theory suggests that three components are necessary for an individual to engage in suicidal behavior:

- the sense that one does not belong to a valued social group (low belonging and loneliness);
- a sense that one is a burden on others (termed perceived burdensomeness);
- the acquired capability to enact lethal self-injury (termed habituation) [15].

Loneliness and social isolation were originally part of Durkheim's model for suicide [8,24]. Perceived burdensomeness is the subjective perception that one's own death will bring relief to family and friends. It has been reported to account for variance in suicide ideation, even after predictors such as depressive symptoms, hopelessness, and functional impairment are controlled [9]. While feelings of loneliness and burdensomeness may amplify the wish for suicide, it is still necessary to overcome the survival instinct in order for suicidal behavior to result from ideation [15]. The IP theory proposes habituation, a mental process in which the individual obtains the ability to execute lethal self-harm through repetitive exposure to painful or fearsome experiences. This results in a higher tolerance for pain and a sense of fearlessness in the face of death [14]. Previous suicide attempts are the strongest predictor of serious future suicide attempts [15]. Habituation has also been postulated to occur through other repeated painful and fear-inducing behaviors like self-injury and physical abuse [20]. The IP theory speculates that the combined occurrence of the first two elements, low belongingness and perceived burdensomeness, are sufficient to produce the desire to die [14], and this desire can only translate into lethal

* Corresponding author at: Geha Mental Health Center and Sackler School of Medicine, Tel Aviv University, 7 Ha'avoda Street, POB 323, Givea't Shemuel, Tel Aviv, Israel. Tel.: +972 54 20876549.
E-mail address: assafyacobi@gmail.com (A. Yacobi).

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or near-lethal behavior in the presence of the acquired capacity for lethality [15]. In regards to the military setting, the IP theory has been studied in the US military [26]. These studies found that military experiences may increase suicidal behavior, primarily due to the stresses resulting from training and combat, which may increase acquired capability and enhance one's ability to inflict lethal self-injury. Thwarted belongingness and increased feelings of burdensomeness may also increase as a result of being away from familiar environment and difficulties adjusting to the new one. Combat exposure increases attempt lethality, and thus suicide potential [19]. In contrast, another important model is the stress-diathesis model, which portrays suicide attempts as the result of other factors that increase the risk of suicide, thus explaining why most suicides die as a result of the first suicide attempt, rather than going through a process of repeated suicide attempts as a way to acquire a capability for lethality [17]. Nevertheless, the association of these features is important beyond their explanatory structure over which there is disagreement.

The cognitive-deficit model speculates that individuals with problem-solving difficulties find it harder to identify efficient solutions to life situations while under stress, especially if they have increased emotional reactivity. As a result, such individuals may become overwhelmed by helplessness and hopelessness, feel trapped and eventually turn to suicide as their only solution [10,16]. The deficiency in problem-solving skills in suicidal individuals is comprised of two fields: the cognitive field in which cognitive rigidity impairs reappraisal and identification of alternative solutions or approaches [16] and the emotional-experiential field which relates to the perception of the problem as a threat or a challenge [22]. The latter includes low belief in one's ability to cope with life situations and feeling helplessness when faced with problems that are perceived as unsolvable. Perception of a problem as a threat does not predict suicidal behavior directly, but rather precipitates helplessness through poorer problem-solving performance [22]. Helplessness when confronted by problems as well as heightened emotional reactivity to failed problem-solving are associated with the probability of suicidal behavior [10]. The ability to regulate negative emotions plays an important role in the cognitive-deficit theory [12,3]. Mental pain alone may not lead to suicidal behavior, but when the individual feels unable to regulate and abate the emotional pain such that he experiences it as unbearable, then suicidal behavior becomes a risk [21,28].

The present study groups were the subject of a previous paper [29], in which the demographic and psychologic characteristics of military suicide attempters were compared to nonattempters who were treated for psychiatric problems and healthy unit controls. In that study, we showed important differences in treatment seeking behavior and some aspects of confidence in handling their military role. In the military there are barriers to reporting suicidal ideation accurately. One group avoids reporting suicidal ideation and seeking help because they are afraid it may jeopardize their military career, while another group seeks a way of avoiding combat and may over-report suicidal ideation. Identifying correlates of severity of suicidal ideation may allow more accurate assessment of the severity of suicidal ideation and associated distress that may carry the risk of suicidal behavior in the military.

This study therefore sought to integrate variables from the two theories presented above in order to better understand their relationship to severity of suicidal ideation. We examined the three major components of the IP model (loneliness, burdensomeness and habituation) and three of cognitive-deficit model (problem-solving ability, perceived as unsolvable and emotional reactivity).

The study aims to conduct a broad-spectrum analysis of the underlying factors influencing and enabling suicidal thoughts in suicidal and non-suicidal young adults. A secondary purpose of the study is to identify potential correlates of suicidal ideation, which will help the mental health professional evaluate suicidal ideation, independently of addressing the issue directly. In this way it might be possible to synthesize a new tool for identifying individuals in the military and other settings at higher risk for suicidal behavior.

2. Participants and methods

The data presented here are part of a more comprehensive study in the Israeli army. The study population included 103 subjects of which 66 were males (64%) and 37 were females (35.9%). The current article is part of a wider study that took place between April 2008 and June 2009 and included 168 participants. The demographic and psychological characteristics of the participants, as well as characteristics of the suicidal behavior and ideation, were previously published [29]. The current article employed some new rating scales that were added towards the end of 2008. Therefore, the data collection period was reduced to January and June 2009. Recruitment methods and criteria were remained the same. All participants were regular military service soldiers between the ages of 18–21 years, average age 19.7 (SD = .99). Study subjects belonged to one of three research groups:

- suicide attempters (SA group, $n = 32$): subjects were invited to join the study and interviewed within 4 weeks of attempted suicide. "Suicide attempt" was defined according to the C-CASA definition: "A potentially self-injurious behavior, associated with at least some intent to die, as a result of the act. Evidence that the individual intended to kill him/herself, at least to some degree, can be explicit or inferred from the behavior or circumstance. A suicide attempt may or may not result in actual injury" [23]. All suicide attempts were assessed and verified by psychiatrists, who had no knowledge of the study. Known cases of deliberate repetitive or prolonged self-harm and self-mutilation without suicide intent were only included if they had also made a suicide attempt [23]. About 75% of the soldiers who attempted suicide in the study time frame entered the study. The rest either refused ($n = 6$) to participate or were hospitalized ($n = 4$) and thereby unreachable by the research team. The mean duration of military service for this group was 11.1, SD = 8.1 months. About 75% of participants had a personality or adjustment disorder. Only 9% had a mood disorder and 19% had a history of drug and alcohol abuse;
- psychologically treated subjects (PT group, $n = 38$). All had been treated by a mental health-care professional for at least four sessions, and had no indication of suicidal ideation or behavior, according to their therapists and clinical records, prior to entering the study. The mean duration of military service for this group was 13.1 ± 8.7 months. About 66% of participants had a clinical diagnosis, mostly mood disorder (29%), and 8% had a known history of drug or alcohol abuse;
- control group (C group, $n = 33$). This group consisted of subjects with no clinical diagnosis, no known mental health treatment and no known history of suicidal behavior.

Subjects in the PT and C groups were matched with the SA group for age, sex and served in the same unit. In order to avoid selection bias, these participants were selected by health-care professionals who had no relationship to the study, and were unaware of the study hypothesis. The mean duration of military service of this group was 16.5 ± 9.1 months.

3. Scales and measurements

Research data was collected by means of self-report questionnaires. The research data was collected by use of the following measurement tools: