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Understanding the Factors Associated with Military Suicide: A Comprehensive Review

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Abstract: *This paper presents the various factors within armed forces and military contexts that are contributing to military suicide by considering psychological, personal, social, behavioral and official issues. The paper will pinpoint the important factors that lead to the startlingly high suicide rate in the military personnel. Understanding these factors is crucial for enhancing the well-being, safety, and effectiveness of military personnel. Through a comprehensive analysis, this paper categorizes the identified risk factors into distinct domains. We aim to provide a comprehensive understanding of all major factors by providing a structured overview. We have searched the online databases, journals and libraries for the papers related to the topic. After applying inclusion and exclusion criteria we have shortlisted 6 studies for the study. The study compares the results and findings of all the selected studies and find out the most important factors. Descriptive statistics of all studies compared and found that the most important factor are Mental disorder and personal issues. It is also found that there is no difference in the stress level among the different levels of officers and soldiers in military.*

Index terms: Military, Factors, Stress, Suicide, Soldier.

I. INTRODUCTION

“The Defence ministry compiled data for cases of suicide during the period between January 1, 2014, and March 31, 2017, and came out with the shocking revelation that one person on duty from either the Army, Navy or Air Force ended life every three days. As per its data, 348 regulars died by suicide while on duty” [1].

The alarming rise in suicide rates among armed forces personnel is a grave concern that demands urgent attention and comprehensive understanding. This project aims to identify and analyze the multifaceted factors influencing suicidal tendencies within the armed forces, shedding light on this critical issue that jeopardizes the well-being of our military personnel. Several factors may contribute to the elevated suicide rates, including but not limited to combat exposure, post-traumatic stress disorder (PTSD), deployment-

related stress, interpersonal conflicts, and access to lethal means. However, the complex interplay of these elements remains poorly understood.

By undertaking a systematic investigation, this project seeks to unravel the intricate web of circumstances surrounding armed forces suicides. Through surveys, interviews, and data analysis, we aim to discern patterns, commonalities, and outliers within the demographic, psychological, and environmental aspects of armed forces personnel. The findings will not only provide valuable insights into the root causes but also serve as a foundation for developing targeted intervention strategies and support mechanisms. Ultimately, this research endeavors to contribute to the overall well-being of armed forces personnel by fostering a deeper understanding of the factors influencing suicide rates, paving the way for evidence-based policies and initiatives to address this pressing concern.

Since the year 2003 to 2022 total 2932 soldiers committed suicide which is a huge number. As per the report of Deccan Herald (DH) in every three days one of the soldier is committing suicide. Year wise distribution is given in Table 1.

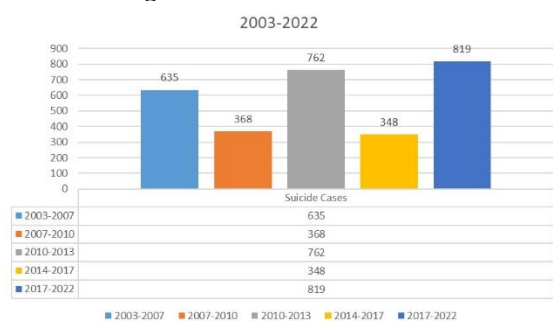


Figure 1: Year wise suicidal cases in armed forces

This concerning rise in self-inflicted fatalities among military personnel has raised significant alarms within both the armed forces and the broader society. While the exact reasons behind this surge are multifaceted and complex, several underlying factors have been identified. Among them are the intense operational tempo, prolonged separation from families, inadequate mental health support systems, and the stigma surrounding mental health issues within the military culture. The demanding nature of military service often exposes personnel to high-stress environments, traumatic experiences, and prolonged deployments, all of which can take a toll on one's mental well-being. Furthermore, the hierarchical structure of the armed forces may deter individuals from seeking help for fear of being perceived as weak or unfit for duty.

II. MATERIALS AND METHODS

Descriptive statistics encapsulate data succinctly, providing crucial insights for understanding and decision-making. By summarizing large datasets into manageable measures like mean, median, and mode, they unveil patterns, trends, and central tendencies.

Such statistical snapshots facilitate easy comprehension and comparison across different groups or periods. They're indispensable in various fields, from finance to healthcare, aiding in risk assessment, resource allocation, and performance evaluation. Moreover, descriptive statistics lay the groundwork for advanced analyses, guiding researchers towards relevant hypotheses and methodologies. Without them, navigating through data complexities would be daunting, hindering effective problem-solving and informed decision-making essential for progress in diverse domains.

Suicide is common in the general public as well as in the military. In the general scenario, not much research has been done in the military. This could be due to the limited access to the data, or there could be some other administrative or political reasons. We searched the online databases and found that 58 articles were found using key words such as military suicide and factors. After removing duplicates, we left with 36 papers. We applied the inclusion and exclusion criteria as follows: (1) free full text; (2) comparable statistics; (3) focus on military personnel as subjects; (4) year of publication: 2010–2024; and (5) factors and reasons in the body of the papers.. Figure 2 shows the flow char for this.

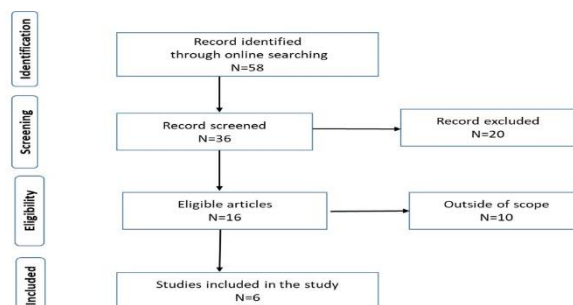


Figure 2: Prisma flow chart of included studies

Related work in the area has been reviewed. After the main information about the factors, their reasons, what their significance is, how much they influence the suicide rate, what are the statistics used to conclude the results, and in which year the publication has been made, all the necessary information is included in Table 2: Comparison of Related Work.

Sr. Author name	Title of publication	Year of publication	Journal/Conference name	Type of study	No. of samples	Year from to	Independent variables	Factors found	Performance measures/Analysis	Remark
1. Ali Fathi-Ashiani	Effective factors of suicide in soldiers of a military force	Summer 2012	Journal of Military Medicine	cross-sectional	341	2010-2022	suicide and self psychological problems, family and individual problems, workplace and colleagues' problems, drug	major depressive disorder, posttraumatic stress disorder, racial/ethnic, lifetime	descriptive statistical analysis	mental disorders (37.2%), suicide methods and means
2 Robert J.	Factors Associated With Suicide Ideation in U.S. Army Soldiers During Deployment	2020	JAMA Network J	Survey study	357	August 2018 and August 2019	mental disorders, suicidal ideation, posttraumatic stress disorder, racial/ethnic, lifetime	major depressive disorder, posttraumatic stress disorder, racial/ethnic, lifetime	logistic regression analysis	major depressive disorder
3 Scott D. Landes	Risk Factors Explaining Military Deaths From Suicide, 2008-2017: A Latent Class Analysis	2023	HHS Public Access	Survey study	2650	Department of Defense Suicide Event Report	suicide	job/administrative/legal risk factors (45.1%), general health risk factors (20.7%), mental health risk factors (47.7%)	latent class analysis	relationship dissolution in the past year
4 K C Dixit	Addressing Stress-Related Issues in Army	2023	Indian Army	Survey study	500	Indian Army Forces	suicide	Domestic environment	descriptive statistical analysis	suicide waiting to solve personal problems
5 Jafar Anisi	The Factors Associated With Suicide Ideation in Iranian Soldiers	2010	Iranian Journal of Psychiatry	questionnaire	1380	Iranian Army Forces	suicide ideation	41.4% dissatisfied with the compulsory period	statistical analysis	mental health problem
6 Jafar D	Suicide in the Military: Understanding Rates and Risk Factors	2019	MILITARY MEDICINE	questionnaire	280	Department of Defense Suicide Event Report	suicide	failed/failing intimate partner relationship was present in 38.1% legal and/or administrative stressors	statistical analysis	84% engaged in health care services, 46.1% had

Table 1. Related work

III. DISCUSSION

- Ashtiani, Ali Fathi-et al. (2012). In their cross-sectional investigation, [1] found that 44% of the participants had a history of self-mutilation or suicide. Mental illnesses accounted for the majority of the background factors associated with suicide and self-mutilation (37.2%). difficulties with coworkers and the work environment (13.8%), as well as family issues (36.7%). Winter was the season when most suicides were committed. usage of guns (49.9%), stabbing (25.2%), drug usage (18.5%), hanging (4.4%), consuming oil and hand soap (1.2%), and jumping from a height (0.9%) were the means of suicide. For his research, he employed analytical tests like the Chi-Square test and descriptive statistical techniques.
- Using a survey study, Robert J. et al. (2020) [2] discovered that 44.2% of people had major depressive disorder (MDD). Aside from this post-traumatic stress disorder, other indicators include race or ethnicity, lifetime noncombat trauma, interpersonal issues, legal issues, or the illness or death of a friend or family member.
- Scott D. Landes et al. (2023) [3] used a survey study in their procedures. While conducting the study, they used latent class analysis and a logistic regression model and found that job/administrative/legal risk factors (45.1%), general health risk factors (20.7%), mental health risk factors (47.7%),

and relationship dissolution in the past year (51.1%) were the major factors for suicide among soldiers.

- K. C. Dixit et al. (2011) [4] conducted a survey in the Indian Army in 2011 to find out the factors contributing to suicidal attempts. They performed descriptive statistics and concluded that the domestic environment is the main factor. The study stated that the majority of soldiers were unable to solve personal problems and were depressed, which motivated them to make suicidal attempts.
- Jafar Anisi et al. (2010) [5] revealed that psychological factors, negative family background, environmental and task-related problems, and sociodemographic problems were significantly associated with suicide ideation: 41.4% were dissatisfied with the compulsory period, 25.2% were not satisfied with those officers in charge of soldiers, and 11.9% of the subjects showed feelings of worthlessness in their work environment.
- Using DoDSER data reports, Larry D. et al. (2019) [6] found that 49.1% of the population had a history of at least one behavioral health condition. Twenty-six percent (24.6%) received a diagnosis of substance addiction or dependence. The second most common diagnosis, found in 23.2% of cases, was adjustment disorder. In 12.5% of cases, major depression was found, and in 8.3% of cases, post-traumatic stress disorder was diagnosed.

Suicide is a complex and multifaceted issue, and in the military, there are unique risk factors that may contribute to the elevated rates of suicide compared to the general population. It's important to note that these risk factors are not deterministic, and individuals may experience a combination of factors. Additionally, the military has implemented various prevention programs and support systems to address these issues. Some of the risk factors for suicide in the military include:

- Deployment and Combat Exposure:** Military personnel who have experienced combat or multiple deployments may be at higher risk due to the stress, trauma, and challenges associated with these experiences.
- Post-Traumatic Stress Disorder (PTSD):** Exposure to traumatic events during military service can lead to the development of PTSD, which is associated with an increased risk of suicide.
- Mental Health Issues:** Pre-existing mental health conditions, such as depression, anxiety, or bipolar disorder, can contribute to an elevated risk of suicide.

4. **Substance Abuse:** Substance abuse, including alcohol and drug misuse, is a significant risk factor for suicide. Military personnel may be at risk due to the availability of substances and the stressors associated with their profession.
5. **Access to Firearms:** The availability of firearms, often a standard issue in the military, increases the lethality of suicide attempts.
6. **Relationship Issues:** Difficulties in personal relationships, including family problems, divorce, or social isolation, can contribute to emotional distress.
7. **Financial Strain:** Financial difficulties, such as debt or economic instability, may contribute to stress and increase the risk of suicide.
8. **Legal Issues:** Legal problems, including disciplinary actions, criminal charges, or court-martial proceedings, can be significant stressors for military personnel.
9. **Stigma and Barriers to Help-Seeking:** Concerns about stigma, career impact, or perceived weakness may discourage military personnel from seeking help for mental health issues.
10. **Lack of Social Support:** Feeling isolated or lacking a strong social support system can contribute to emotional distress and increase the risk of suicide.
11. **Demographic Factors:** Certain demographic factors, such as age, gender, and rank, may influence suicide risk. For example, younger enlisted personnel may face different challenges than older officers.

IV. RESULT

Comparing all the studies selected, it is found that mental disorders are the first main factor and personal problems are the second main factor of suicidal among soldiers. Method of suicide also explored and it is found that availability of the firearms is the main method of suicide in most of the cases. Taking the study of "K C Dixit" [2] as a base study, in this study that focuses on two main points (1). Evaluation of Org and Domestic Environment and (2) Stress Assessment. We took stress assessment where there were 12 questions for all three groups (Officers, JCOs, and OR). we also try to find out which cadre officers, JCOs or other rank who is more stressed or more depressed that motivates them to suicide attempt. We choose Chi square test as we have categorical dataset for analyzing the stress level. Each question analyzed separately for all three groups and found a significant difference ($p < 0.05$) in stress level of all three groups Table 2.

Sno	Question	Pearson Chi Square	df	P value Significance level
1	Do you feel tense, nervous, anxious or upset?	120.156	4	0.000
2	Do you feel low in energy, exhausted and tired?	117.961	4	0.000
3	Do you feel sad, Depressed?	98.238	4	0.000
4	Do you ever feel that life is not worth living?	14.382	4	0.006
5	Do you find yourself preoccupied with personal problems?	86.494	4	0.000
6	Do you feel hopeless in unpleasant situation?	5.190	4	0.268
7	Do you feel tired in the morning?	5.390	4	0.250
8	Do you find problems in concentrating?	22.981	4	0.000
9	Do you find no self-control over events in life?	3.679	4	0.451
10	Are you able to achieve the required standards?	147.673	4	0.000
11	Are you unable to solve your problems?	171.571	4	0.000
12	Do you feel close to/by the people around you?	138.969	4	0.000

Table 2: List of questions with their Significance Level and degree of freedom=04.

for questions (1,2,3,4,5,8,10,11,12). Thus, the null hypothesis is rejected and alternate hypothesis accepted for these questions and concludes that there is a difference in the stress level among the three group. While looking at question 6 ,7 and 9 results there is no difference in the responses of all three groups, they are behaving in similar way. They feel hopeless in unpleasant situation, they feel tired in the morning and sometime they even find no self-control over some events. After looking all data and results of all questions Other Ranks personnel are found more stressed.

V. CONCLUSION AND FUTURE WORK

Suicidal incidents continue to rise despite attempts to address mental health issues in the military, such as campaigns to raise awareness and de-stigmatize asking for help. This highlights the critical need for more extensive support networks and interventions. It is imperative that mental health specialists, legislators, and military leadership work together to identify risk factors, improve preventive measures, and offer service members who are experiencing mental health problems with appropriate treatment alternatives. Further, lowering the suicide rate and protecting the wellbeing of individuals who commit their life to serving their country can be achieved by cultivating an environment of transparency, empathy, and support inside the armed forces. The importance of the armed services' resilience and mental health cannot be overstated as the country struggles with this urgent problem.

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