

Beliefs toward mental illness: Findings in a sample of military personnel

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Abstract

Stigma associated with mental illness is recognized as a significant public health issue. Cultural factors, particularly those embedded in military culture, significantly influence the stigma experienced by military personnel. Within military environment, current research illustrates that the stigma experienced by military personnel towards mental illness has been identified as a barrier to accessing mental health services. The purpose of the present study has been to investigate the beliefs towards specific psychopathological entities, as well as to identify the factors associated with mental illness stigmatization by military personnel. The data analysis elucidate certain distinctions in dimensions related to mental illness stigmatization by the certain sample. The findings suggest that initiatives directed at enhancing mental health care utilization in the military would be most effective by concentrating on mitigating mental illness stigma associated with seeking mental health services. Further comprehensive studies are warranted to delve deeper into these results. The sample consisted of three hundred military personnel. 273 of them were males, the mean age was 33.5 years (± 7.7) and the mean of years of professional experience was 14.8 (± 7.7). A demographics questionnaire (covering data as gender, age, professional experience, marital status, educational level and direct/ indirect contact with people with mental disorders) was administered and Stigma Cognitive Schemes were assessed with the Mental Illness Stigma Scale. The scale is composed of 9 items and a Comprehensive Stigma Perception Index finally derived from the mean of items per mental disorder. Confirmatory Factor Analysis in Mental Illness Stigma Scale presented satisfactory goodness-of-fit indices. Through analysis of variance for dependent measures, statistically significant differences were identified for all the items of the scale per mental disorder. The highest scores in Comprehensive Stigma Perception Index appeared for Schizophrenia and Substance Use and the lowest for Anxiety Disorders and Anorexia. With reference to the sources on which the participants relied to answer the questions it emerged that Comprehensive Stigma Perception Index for Alcohol use disorder and Anorexia were predicted by information from media. The current study elucidated distinctions in dimensions related to the stigma of mental illness within a military personnel sample. These findings suggest that initiatives directed at enhancing mental health care utilization in the military would be most effective by concentrating on mitigating mental illness stigma associated with seeking mental health services. Further comprehensive studies are warranted to delve deeper into these results.

Keywords

Stigma, Mental illness, attitudes, military, contact, beliefs, burden indices

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Introduction

Engaging in military service is inherently characterized by both physical and psychological demands, necessitating the imperative provision of mental healthcare for military personnel [1]. Despite the acknowledgment of these demands, individuals within the military often encounter stigma and face barriers hindering access to mental health treatment [2-4]. Recent scholarly inquiries have explored the impact of attitudes towards mental health care on the decision-making process of seeking help, among military personnel. As posited by Kim et al. [5], pervasive stigma, negative attitudes and organizational obstacles persist as substantial impediments, deterring military individuals from seeking the necessary assistance. Numerous studies underscore the influence of stigma directed towards mental illness and mental healthcare in obstructing the utilization of mental health services by military personnel dealing with mental health conditions [3,5,6]. The current study endeavors to scrutinize the perspectives held by military personnel regarding mental illness, with a particular focus on specific disorders. Additionally, our objective is to discern factors that exhibit an apparent association with the stigma surrounding mental health conditions.

Mental health and Mental illness

In accordance to the definition provided by the World Health Organization (WHO), mental health is delineated as a condition of emotional well-being wherein an individual can reside and engage in occupational pursuits harmoniously within the societal milieu and deriving contentment from one's attributes and accomplishments [7]. This very definition implies the requisite awareness of one's identity, self-sufficiency, vitality, autonomy from societal influences (particularly when in disagreement), adeptness in regulating environmental parameters, resilience to stressors, and adept problem-solving capabilities. Consequently, this encompasses the capacity for adaptive comportment within the environment and concurrently, the ability to tailor the environment to one's individual requisites. In the broader context of mental health, the individual is positioned to derive satisfaction from the faculties of love, occupation, and recreation.

Conversely, mental illness serves as a fertile ground for the generation of a particularly intricate mythology [8]. The historical evolution of human cognition and the societal response to mental illness is underscored by the primal trepidation of "madness". The human inclination to apprehend and alienate phenomena that deviate from the normative and comprehensible is deeply ingrained, representing a fundamental defense mechanism. On an unconscious collective level, there appears to be a tendency to expel and categorize incomprehensible and menacing elements into the domain of psychopathology, ascribing them to the "other" (emphasizing the "not myself" discrimination need for safety) Consequently, this "other" becomes stigmatized and relegated to the margins of societal acceptance. The treatment of individuals subject to such stig-

matization is contingent not on their intrinsic presence, but rather on the label affixed to the demographic cluster to which they belong, according to labeling theory [9]. The undesirable trait becomes the central aspect/core of the individual's essence, echoing Goffman's concept of the "core stigma" [10].

Within the realm of social stigma literature, the interaction with stigmatized individuals is intricately tied to dimensions such as centrality, reflecting the extent to which one perceives the stigmatized characteristic as integral to the individual's core self. Additionally, plausibility, delineating the visibility and external detectability of the stigma, and the attribute of control, pertaining to the perceived responsibility of the individual for the identified problem, are pertinent dimensions in this context [11].

The seminal work of Lemert in the 1960s laid the groundwork for the formulation of theories addressing primary and secondary deviation. The concept of "primary deviance" encapsulates behaviors departing from institutionalized social norms, manifesting as anomalous, undesirable, and pathological. It is posited that primary deviation does not substantially impact the individual's execution of social roles and overall functioning [12]. The repercussions in the form of punishments, rejection, and marginalization, reinforcing primary deviance, give rise to the phenomenon recognized as secondary deviance. This latter concept denotes the process wherein the individual embraces the role of deviance [13]. The diagnosis of mental illness, the severity of symptoms, and the tolerance of deviance by the broader society are deemed pivotal in the transition from primary to secondary deviance. The deviant individual emerges as a product of the labeling process, rendering them susceptible to negative stereotypes and subsequently compelling adherence to the assigned role [14].

Mental illness stigma

The psychiatric patient encounters a confrontation of apprehension and mistrust, resulting in curtailed opportunities within both social and occupational spheres. This, in turn, engenders deleterious effects on the patient's capacity as far as independent living is concerned, contributing to degradation in his/her overall quality of life and exacerbating pre-existing challenges. Consequently, mental illness becomes functionally associated with psychosocial disability within the confines of this cyclic dynamic. Within this intricate cycle, the individual experiences a detriment to his/her self-esteem, accompanied by feelings of guilt and unhappiness, ultimately leading to social withdrawal and a severe inability to assert even the inherent rights as a human being. Consequently, the perpetuation of this vicious circle culminates in self-stigmatization, denoted as self-stigma.

Analysis of pertinent studies reveals that the discrimination endured by individuals with mental illness is predicated upon stereotypical beliefs that attribute responsibility for their condition to themselves [15-17]. These stereotypes further encompass perceptions that individuals with mental illness consistently exhibit peculiar behaviors and speech, as well as pose a perceived danger to those in their immediate vicinity [17].

The movement to mitigate and combat mental health stigma

In 1996, the World Psychiatric Association initiated a global initiative aimed at alleviating the stigma associated with Schizophrenia. The interdisciplinary program named "Open the doors" was formally launched in August 1996 in Geneva, outlining primary strategies to combat mental health stigma and promoting inclusivity for psychiatric patients within various communities.

Subsequently, in Greece, the anti-stigma program targeting schizophrenia commenced in 2000 under the auspices of the Research University Institute of Mental Health. Over time, this initiative has evolved to encompass the broader spectrum of mental disorders. The comprehensive program incorporates distinct components: a) Research activities, b) Educational endeavors directed at mental health professionals, families, secondary school students, and diverse workplace personnel, and c) Communication strategies encompassing media engagement, publications, websites, helpline services, the establishment of volunteer networks and "stigma hunters", community awareness initiatives, and participation in cultural events [18].

Beliefs about Mental Illness

The examination of beliefs and attitudes concerning mental illness constitutes a pivotal research domain within our country, particularly in the context of ongoing psychiatric reformation. The relocation of individuals with mental health conditions from psychiatric facilities to community settings exposes the community to the prevailing social representations of mental illness [19-21]. Resistance to this transformative shift is, among other factors, significantly rooted in the stigmatization of psychiatric patients, with Lasalvia et al. [22] highlighting that stigmatizing attitudes can give rise to discrimination against individuals with mental disorders.

Global surveys consistently underscore the enduring prevalence of public stigmatization towards psychiatric patients. Notably, 20-35% of respondents, as revealed in various studies [23], perceive psychiatric patients as potentially dangerous to others. However, noteworthy distinctions emerge, with individuals possessing higher educational levels, occupying elevated positions in community workplaces, and identifying as female, displaying a proclivity toward a more positive portrayal of psychiatric patients [23-24]. Conversely, research indicates that those who tend to deny the existence of psychiatric facilities in their vicinity are predominantly individuals with children [25].

Within the Greek population, a nationwide survey conducted as part of the Anti-Social Stigma Program revealed significant perceptions: 78% of the public associates schizophrenia with violence and perceived danger, 61% would be disinclined to hire an individual with mental illness as an employee, 92% would avoid residing in an apartment in a building where a person with schizophrenia resides, and 75% would choose

not to live in a neighborhood with a psychiatric institution. Intriguingly, 51% express positivity towards the presence of a small hospice for psychiatric patients in their vicinity [26].

Parallel findings from cross-cultural investigations underscore the universality of such stigmatizing attitudes. Notably, comparative studies conducted in Canada and Germany reveal that negative representations constituting psychiatric stigma are more pronounced in the Greek context [27-29].

The present study

The purpose of this study has been to investigate the stigma toward mental illness among military personnel, as well as identify the factors associated with stigma. Identifying factors related to stigma toward mental illness could be useful for developing mental health policies in the future, such as encouraging early intervention and medical consultation for members with mental illness and mental vulnerability. In the current investigation, we endeavor to explore the variation in perceived burden associated with distinct mental disorders and elucidate diverse dimensions of the stigma surrounding mental illness in respect of each specific mental disorder.

Method

Mental Illness Stigma

Items from previous measurement instruments assessing mental illness stigma were used to develop the certain questionnaire [30-32]. The following nine items were selected: they are isolated; you cannot communicate with them; they cannot work normally; they do not recover, despite treatment; they are responsible for their own situation; they have an inherited predisposition; they should not create a family; they have self-destructive tendencies; they are dangerous for others. The questionnaire consisted of clusters of statements on Depression, Bipolar Disorder, Anxiety and Panic Disorder, Schizophrenia, Dementia, Anorexia, Alcohol Abuse and Substance Use. The scale assesses participants' stigmatization attitudes on a 5-point scale (1=strongly disagree to 5=totally agree). The mean of the items composed the Comprehensive Stigma Perception Index. A prior iteration of the questionnaire had been employed in an experimental research study [33]. Stigma indices had acceptable internal consistency (Cronbach's α : Depression $\alpha=0,71$, Anxiety and Panic Disorder $\alpha=0,83$, Bipolar disorder $\alpha=0,82$, Schizophrenia $\alpha=0,86$, Alcohol Abuse $\alpha=0,76$, Substance Use $\alpha=0,82$, Dementia $\alpha=0,77$ and Anorexia $\alpha=0,75$).

Participants

Three hundred (300) military personnel, 273 of them were males, the mean age was 33.5 years (SD = 7.7) and the mean of years of professional experience was 14.8 (SD = 7.7). Regarding contact with people with mental illness, all participants had been in contact in the context of their job, 114 (38%) had frequent contact with a person with a mental illness out

of their job and 14 (42%) had a person with mental illness in their close family circle. Regarding the sources of information that participants relied on in order to answer, most reported that they relied on knowledge originating from their experience (204, 68%) and media (124, 41.3%). More details on the demographics of the sample are reported in Table 1.

Table 1. Demographic characteristics of sample

	<i>F</i>	<i>%</i>
Gender		
Male	27	9.0
Female	273	91.0
Family status		
Married	124	41.3
Single	176	58.7
Having child		
No	165	55.0
Yes	135	45.0
Military Rank		
Professional Soldier	42	14.0
Sergeant to Sergeant Major	89	29.7
Warrant Officer to Captain	103	34.3
Major to Brigadier General	66	22.0
Educational level		
High school	98	32.7
University	176	58.7
Master/PhD	26	8.7
Contact with person with mental disorder		
No	186	62.0
Yes	114	38.0
Having in family a person with mental disorder		
No	258	86.0
Yes	42	14.0
Information about mental illness		
Studies	48	16.0
Experience	204	68.0
Scientific sources	61	20.3
Media	124	41.3
	<i>M</i>	<i>SD</i>
Age	33.5	7.7
Years of professional experience	14.8	7.7

Procedure

The study was carried out under the auspices of the Psychiatric Clinic of the 414 Military Hospital for Special Diseases, and the research activities transpired within the hospital premises. We certify that the research adhered to the ethical principles of the American Psychological Association [34]. The questionnaire was distributed to Army officers upon their arrival at the Infirmaries of the 414 Military Hospital for Special Diseases, specifically during their annual health examinations. Prior to participation, the researchers provided comprehensive information to the participants elucidating the research's purpose and assured them that the acquired data would be exclusively employed for scientific purposes. The data were anonymized and confidential. Voluntary and anonymous completion of the questionnaire was emphasized, and explicit verbal consent was sought from each participant prior to their engagement in the study. The preliminary phase of the research was piloted with a sample comprising students from the School of Social Sciences of the University of Crete.

Results

Confirmatory Factor Analysis

A Confirmatory Factor Analysis was conducted on the Mental Illness Stigma Questionnaire to ensure the statistical appropriateness of the measurement model. The analysis showed acceptable goodness of fit indices in the determination of the underlying structure ($\chi^2 = 13.78$, $df = 8$, $p = 0.088$, $\chi^2/df = 1.72$, $TLI = 1.00$, $CFI = 1.00$, $RMSEA = 0.017$, $SRMR = 0.007$ (see Figure 1).

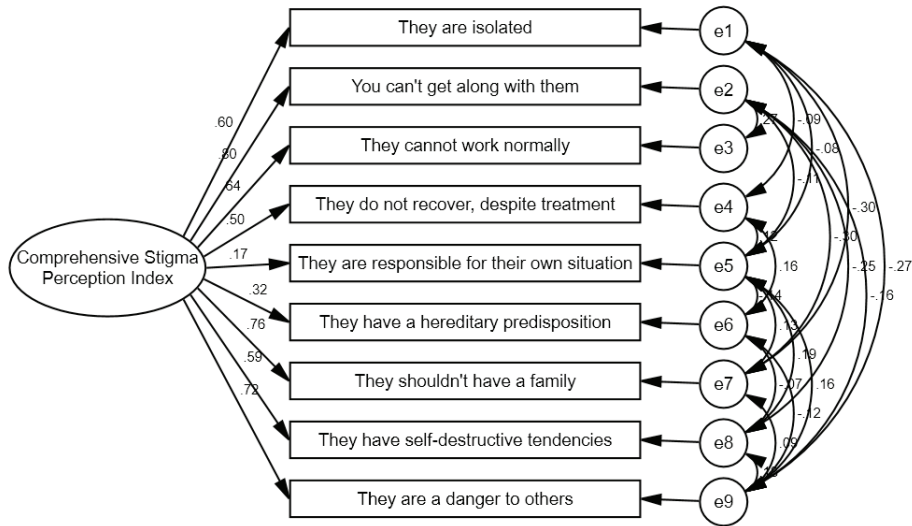


Figure 1. Confirmatory factor analysis for the Mental Illness Stigma Questionnaire

Repeated measures ANOVA per item and Comprehensive Stigma Perception Index regarding mental disorders

Ten univariate analysis of variance models for repeated measures were designed (They are isolated, You can't get along with them, They can't work normally, They don't get along, despite treatment, They are responsible for their condition, They have a hereditary predisposition, They shouldn't create a family, Have self-destructive tendencies, Are dangerous to others ; Comprehensive Stigma Perception Index X nosological category: Depression, Anxiety, Bipolar disorder, Schizophrenia, Alcohol abuse, Substance use, Dementia, Anorexia).

Regarding the Comprehensive Stigma Perception Index, the differences of the means between the repeated measurements were statistically significant (see Table 2). As multiple comparisons of repeated measures with the post hoc Bonferroni test showed, 4 profiles are created with the total burden indices: a) for Anxiety and Anorexia showing the lowest levels and systematically differing from the other groups; b) for Depression and Anorexia showing average low levels and differing systematically from the other groups; c) for Bipolar Disorder, Alcohol Abuse and Dementia showing medium high levels and differing systematically from the other groups; d) for Schizophrenia and Substance Use showing the highest levels and differing systematically from the other groups (see Figure 2).

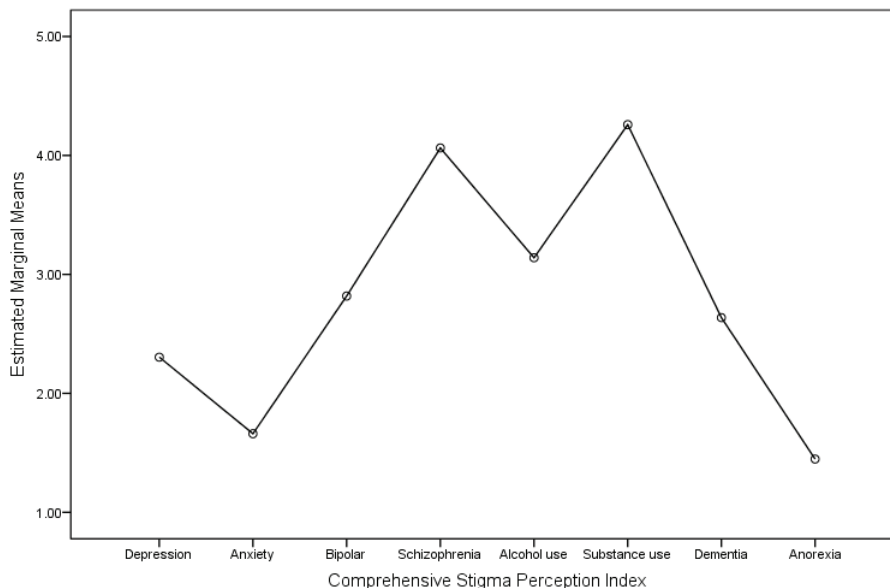


Figure 2. Estimated means of the Comprehensive Stigma Perception Index per mental disorder.

Regarding the dimension of isolation, the differences of the means between the repeated measurements were statistically significant (see Table 2). As multiple comparisons of repeated measures with the post hoc Bonferroni test showed, 2 profiles are created with the overall burden indices: a) for Alcohol Abuse, Anxiety and Anorexia showing low levels and differing systematically from the other group; b) for Depression, Bipolar Disorder, Schizophrenia, Substance Use and Dementia showing the highest levels and differing systematically from the other group. However, Depression, Bipolar Disorder and Schizophrenia differed systematically from Dementia (see Figure 3).

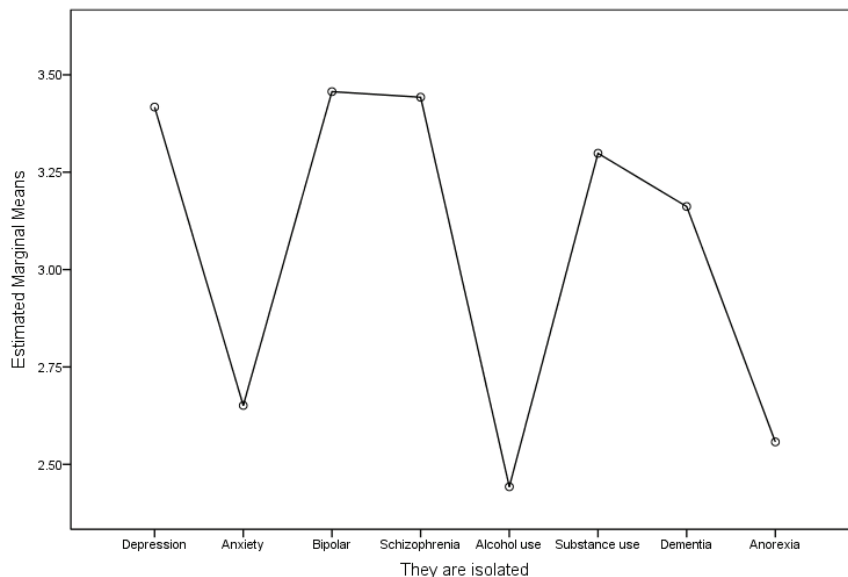


Figure 3. Estimated means of the item “They are isolated” per mental disorder

Regarding the inability to agree, the differences in the means between repeated measurements were statistically significant. (see Table 2). As multiple comparisons of repeated measures with the post hoc Bonferroni test showed, 4 profiles are created with the burden indices: a) for Anorexia showing the lowest levels and systematically differing from the other groups; b) for Depression and Anxiety and Alcohol Abuse showing medium low levels and differing systematically from the other groups; c) for Bipolar Disorder and Substance Use showing medium high levels and differing systematically from the other groups; d) for Schizophrenia and Dementia showing the highest levels and differing systematically from the other groups (Figure 4).

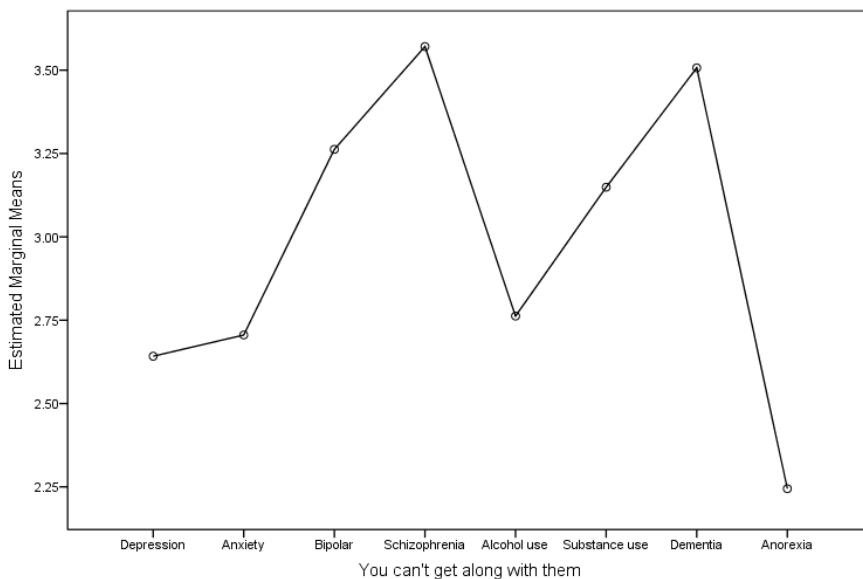


Figure 4. Estimated means of the item “You can't get along with them” per mental disorder

Regarding the incapacity for work, the differences of the means between the repeated measurements were statistically significant. (see Table 2). As multiple comparisons of repeated measures with the post hoc Bonferroni test showed, 4 profiles are created with the burden indices: a) for Anorexia to show the lowest levels and systematically differ from the other groups; b) for Depression and Anxiety and Alcohol Abuse showing medium low levels and differing systematically from the other groups. However, the Anxiety burden index differed systematically with the Alcohol Abuse index; c) for Alcohol Abuse and Bipolar disorder showing average high levels and differing systematically from the other groups with the exception of Alcohol Abuse which did not differ from Depression; d) for Schizophrenia and Dementia and Substance Use showing the highest levels and systematically differing from other groups (see Figure 5).

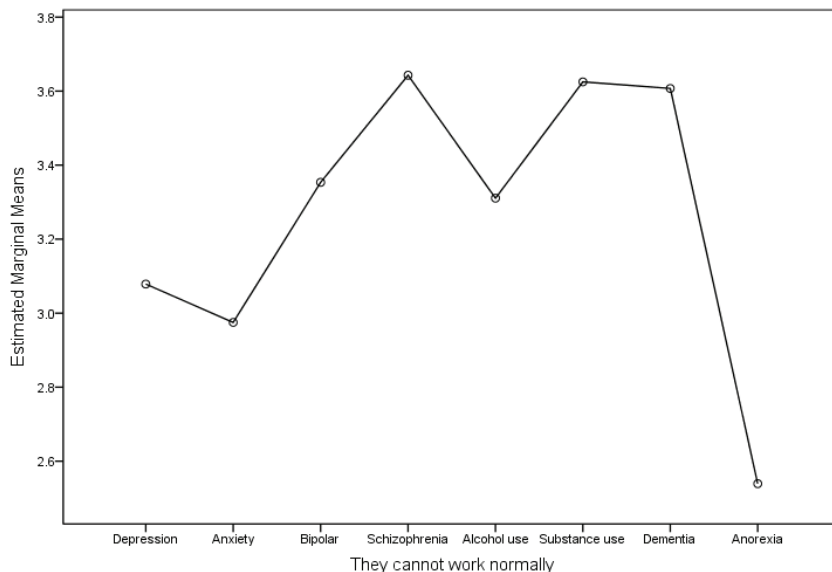


Figure 5. Estimated means of the item “They cannot work normally” per mental disorder

Regarding failure to recover despite treatment, the mean differences between repeated measurements were statistically significant (see Table 2). As multiple comparisons of repeated measures with the post hoc Bonferroni test showed, 4 profiles are created with the burden indices: a) for Depression and Alcohol Abuse showing the lowest levels and differing systematically from the other groups; b) for Anxiety, Alcohol Abuse and Anorexia showing medium low levels and differing systematically from the other groups. However, the Anxiety burden index differed systematically from the Alcohol Abuse index, and the Alcohol Abuse index did not differ systematically from the Anxiety index; c) for Bipolar disorder and Substance Use showing medium high levels and differing systematically from the other groups; d) for Schizophrenia and Dementia showing the highest levels and differing systematically from the other groups (see Figure 6).

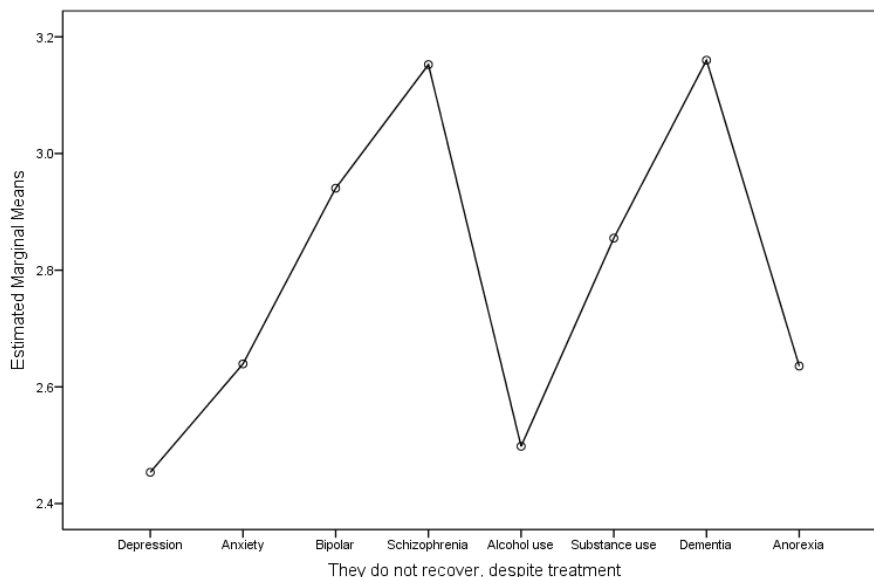


Figure 6. Estimated means of the item “They do not recover, despite treatment” per mental disorder

With regard to the responsibility of the sufferers for their disease, the differences of the means between the repeated measurements were statistically significant (see Table 2). As multiple comparisons of repeated measures with the post hoc Bonferroni test showed, 3 profiles are created with the burden indices: a) for Depression and Dementia showing the lowest levels and differing systematically from the other groups. However, Dementia did not differ systematically from Anxiety; b) for Anxiety, Bipolar Disorder and Schizophrenia and Dementia showing average levels and differing systematically from the other groups. However, the burden index for Bipolar Disorder differed systematically from the Dementia index; d) for Alcohol Abuse, Substance Use and Anorexia showing the highest levels and differing systematically from the other groups (see Figure 7).

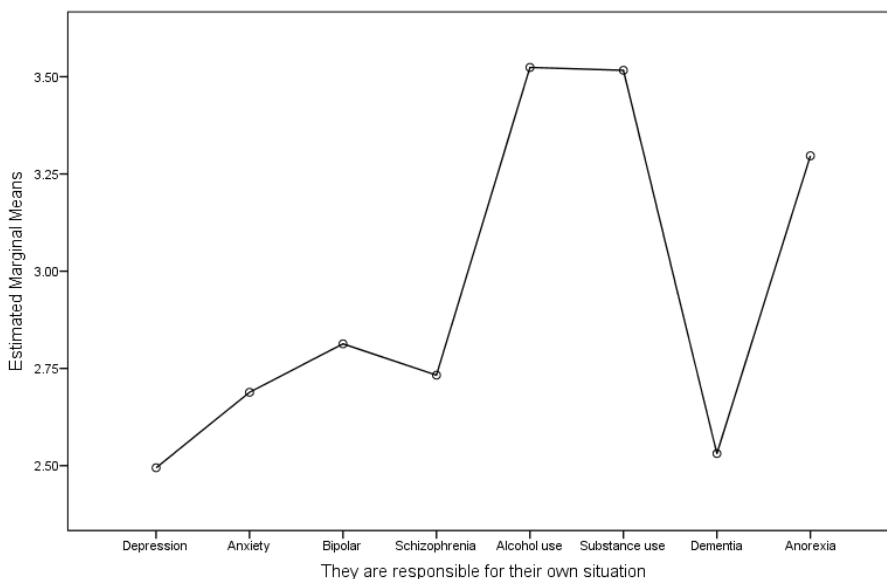


Figure 7. Estimated means of the item “They are responsible for their own situation” per mental disorder

Regarding the hereditary predisposition, the differences of the means between the repeated measurements were statistically significant (see Table 2). As shown by the multiple comparisons of the repeated measurements with the post hoc Bonferroni test, 4 profiles are created with the burden indices: a) for Alcohol Abuse and Substance Use showing the lowest levels and systematically differing from the other groups; b) for Anxiety, Depression and Anorexia showing mean low levels and differing systematically from the other groups; c) for Bipolar disorder and Dementia showing medium high levels and differing systematically from the other groups; d) for Schizophrenia showing the highest levels and differing systematically from the other groups (see Figure 8).

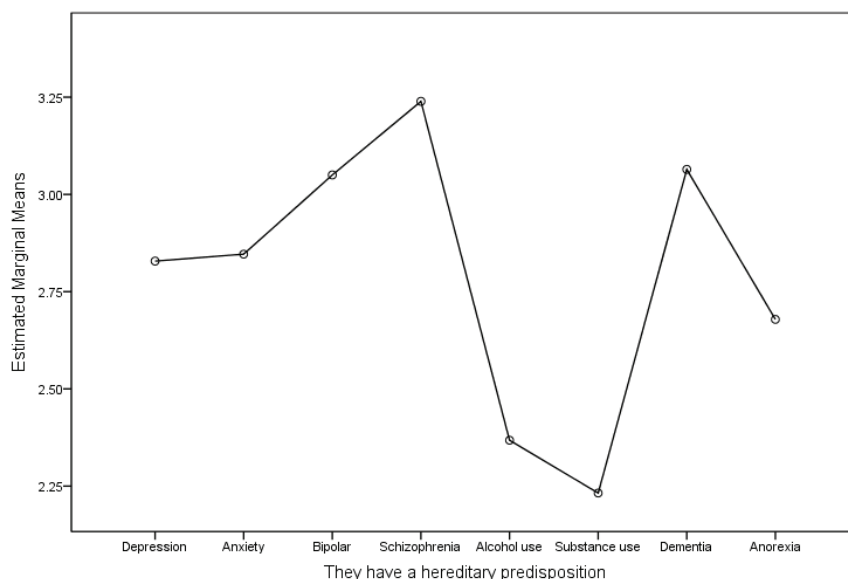


Figure 8. Estimated means of the item “They have a hereditary predisposition” per mental disorder

Regarding whether the sufferers should not create a family, the differences in means between repeated measurements were statistically significant (see Table 2). As multiple comparisons of repeated measures with the post hoc Bonferroni test showed, 5 profiles are created with the burden indices: a) for Anorexia showing the lowest levels and systematically differing from the other groups; b) for Dementia showing the low levels and systematically differing from the other groups; c) for Anxiety, Depression and Substance Use showing medium low levels and differing systematically from the other groups; d) for Bipolar disorder and Alcohol Abuse showing medium high levels and differing systematically from the other groups; e) for Schizophrenia showing the highest levels and differing systematically from the other groups (see Figure 9).

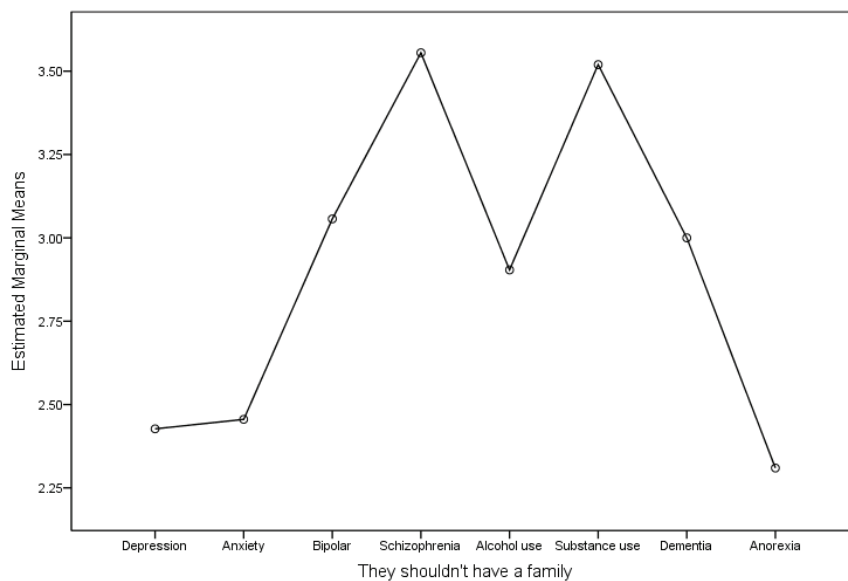


Figure 9. Estimated means of the item “They shouldn’t have a family” per mental disorder

With regard to self-destructive tendencies, the differences of the means between the repeated measurements were statistically significant (see Table 2). As shown by the multiple comparisons of the repeated measurements with the Bonferroni post hoc criterion, 3 profiles are created with the burden indices: a) for Anxiety, Dementia and Anorexia showing the lowest levels and differing systematically from the rest of the groups; b) for Depression, Bipolar Disorder and Alcohol Abuse showing average levels and differing systematically from the other groups. However, the burden index for Alcohol Abuse differs systematically from the index for Bipolar Disorder; c) for Schizophrenia and Substance Use showing the highest levels and differing systematically from the other groups (see Figure 10).

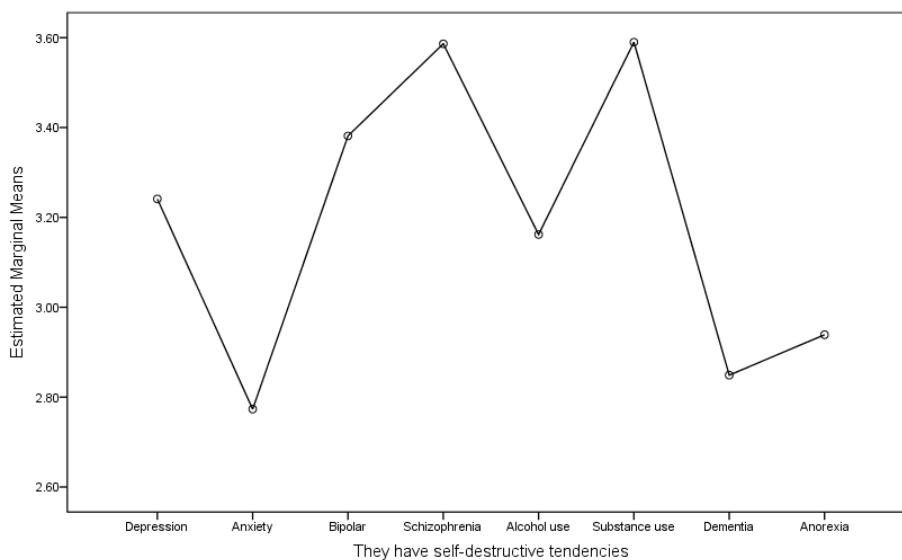


Figure 10. Estimated means of the item “They have self-destructive tendencies” per mental disorder

Regarding whether they are dangerous to others, the differences in means between repeated measurements were statistically significant. (see Table 2). As multiple comparisons of repeated measures with the post hoc Bonferroni test showed, 4 profiles are created with the burden indices: a) for Depression and Anorexia showing the lowest levels and differing systematically from the rest of the groups; b) for Anxiety and Dementia showing mean low levels and differing systematically from the other groups; c) for Alcohol Abuse, Bipolar Disorder and Substance Use showing medium high levels and differing systematically from the other groups. However, Bipolar Disorder differs systematically from Substance Use; d) for Schizophrenia showing the highest levels and differing systematically from the other groups (see Figure 11).

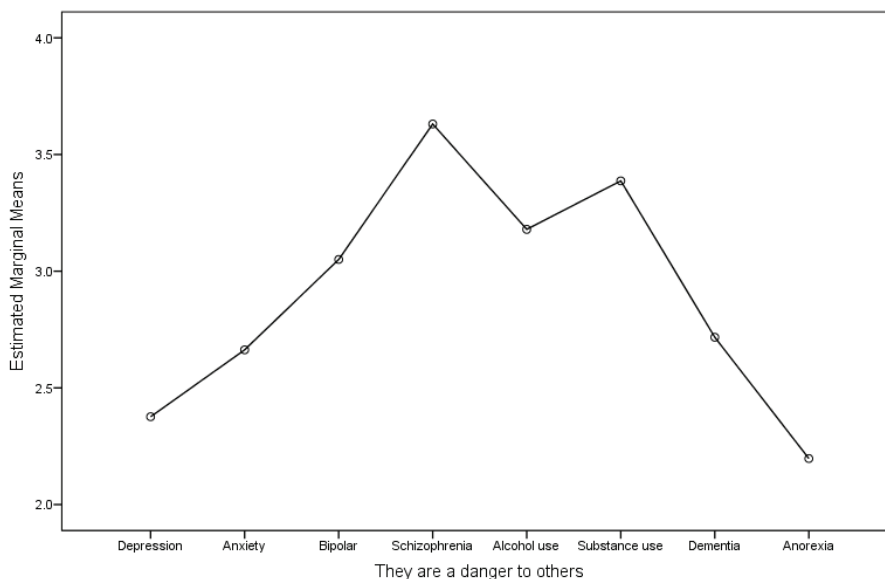


Figure 11. Estimated means of the item “They are a danger to others” per mental disorder

Table 2. Means, Wilks’ Λ indices, criterion F value, level of statistical significance and effect size (η^2) for dependent samples analyzes of variance

	1	2	3	4	5	6	7	8	Wilks’ Λ	F	η^2
	M	M	M	M	M	M	M	M			
They are isolated	3.4	2.7	3.5	3.4	2.4	3.3	3.2	2.6	0.4	65.9***	.630
You can’t get along with them	2.6	2.7	3.3	3.6	2.8	3.1	3.5	2.2	0.3	89.9***	.696
They cannot work normally	3.1	3.0	3.4	3.6	3.3	3.6	3.6	2.5	0.4	55.8***	.589
They do not recover, despite treatment	2.5	2.6	2.9	3.2	2.5	2.9	3.2	2.6	0.5	34.2***	.477
They are responsible for their own situation	2.5	2.7	2.8	2.7	3.5	3.5	2.5	3.3	0.5	39.9***	.512
They have a hereditary predisposition	2.8	2.8	3.1	3.2	2.4	2.2	3.1	2.7	0.5	45.3***	.538
They shouldn’t create a family	2.4	2.5	3.1	3.6	2.9	3.5	3.0	2.3	0.3	76.4***	.661
They have self-destructive tendencies	3.2	2.8	3.4	3.6	3.2	3.6	2.8	2.9	0.4	51.2***	.569
They are dangerous to others	2.4	2.7	3.1	3.6	3.2	3.4	2.7	2.2	0.3	81.7***	.678
Comprehensive Stigma Perception Index	2.3	1.7	2.8	4.1	3.1	4.3	2.6	1.4	0.3	74.8***	.652

Note. *** $p < .001$; 1 = Anxiety, 2 = Depression, 3 = Bipolar, 4 = Schizophrenia, 5 = Alcohol use, 6 = Substance use, 7 = Dementia, 8 = Anorexia

The Pearson r correlation coefficient was used to review the associations observed between the Comprehensive Stigma Perception Index by category of mental disorder (see Table 3). A review of the indicators found a strong correlation between the burden indicators of Bipolar Disorder with Depression and Schizophrenia and Substance Use with Alcohol Abuse.

Table 3. Pearson r correlations on total burden indices between different disorders

Comprehensive Stigma Perception Index	1	2	3	4	5	6	7	8
1. Depression	-							
2. Anxiety	.47**	-						
3. Bipolar	.62**	.36**	-					
4. Schizophrenia	.39**	.40**	.62**	-				
5. Alcohol use	.33**	.28**	.28**	.29**	-			
6. Substance use	.33**	.33**	.41**	.46**	.54**	-		
7. Dementia	.39**	.36**	.41**	.40**	.40**	.44**	-	
8. Anorexia	.32**	.44**	.34**	.35**	.41**	.40**	.38**	-

Note. ** p<.01

T-tests were performed in order to determine whether there were gender differences in the Comprehensive Stigma Perception Index per mental health disorder. Although no statistically significant gender differences were found in most comparisons, statistically significant differences were found for Anxiety Disorders with men showing higher values in the Comprehensive Stigma Perception Index compared to women (see table 4).

Table 4. Gender differences in Comprehensive Stigma Perception Index per mental health disorder

Comprehensive Stigma Perception Index	Male		Female		t
	M	SD	M	SD	
Depression	2.3	1.8	2.4	1.5	-0.5
Anxiety	1.7	2.1	0.9	1.4	2.7**
Bipolar	2.7	2.6	3.5	2.9	-1.5
Schizophrenia	4.0	2.8	4.2	3.1	-0.4
Alcohol use	3.1	2.3	3.1	2.0	0.1
Substance use	4.2	2.5	4.4	2.4	-0.4
Dementia	2.6	2.3	2.9	2.3	-0.7
Anorexia	1.4	1.6	1.7	1.4	-1.0

Note. ** p<.01

Pearson r correlation was used to evaluate the relationship of age, years of professional experience and educational level with Comprehensive Stigma Perception Index per mental health disorder. Age, professional experience and educational level did not correlate with Comprehensive Stigma Perception Index per mental health disorder with exception a positive correlation of educational level and Comprehensive Stigma Perception Index for Anorexia (see table 5).

Table 5. Pearson r correlation between age, years of professional experience and educational level with Comprehensive Stigma Perception Index per mental health disorder

Comprehensive Stigma Perception Index	Age	Professional experience	Educational level
Depression	.04	-.01	.06
Anxiety	-.05	-.07	.04
Bipolar	.11	.07	.09
Schizophrenia	.10	.09	.06
Alcohol	.11	.08	-.02
Drugs	.01	-.03	-.05
Anoia	.06	.06	.11
Anorexia	-.04	-.06	.14*

Note. * p<.05.

Eight stepwise multiple regression analyses were to assess if direct (a) contact with person with mental disorder and b) having a person with mental disorder in family, c) information originating from personal experience) and indirect contact (information about mental illness by studies, scientific sources, media) could predict the Comprehensive Stigma Perception indices per mental health disorder. Independent variables did not predict the Comprehensive Stigma Perception indices for Depression, Anxiety, Bipolar disorder, Schizophrenia, Substance Use. Comprehensive Stigma Perception Index for Alcohol use disorder was predicted ($R^2 = 0.02$) by information from media ($\beta = 0.15$, $t = 2.56$, $p = .011$). Comprehensive Stigma Perception Index for Anorexia was predicted by ($R^2 = 0.03$) by information from media ($\beta = 0.14$, $t = 2.30$, $p = .022$) and personal experience ($\beta = 0.12$, $t = 1.12$, $p = .047$). Comprehensive Stigma Perception Index for Dementia was predicted by ($R^2 = 0.04$) by information from scientific sources ($\beta = 0.21$, $t = 3.64$, $p < .001$).

Discussion

The current study constitutes the first investigation attempting to identify the factors that could influence stigma toward mental illness in military personnel in Greece. It is one of the limited number of researches that endeavor to scrutinize stigma not as a unified construct but rather through the categorization of various diagnostic entities. This study aims to constitute a significant theoretical and methodological advancement in the field, effectively amalgamating perspectives on mental illness stigma. A distinctive feature of this research lies in its pioneering integration of stigma, thereby contributing novel insights to the existing body of knowledge in the domain. Furthermore, we developed a measure that may prove useful in future research including intervention studies designed to reduce mental illness stigma and prejudice.

The examination of burden indices (Comprehensive Stigma Perception Index) reveals a consistent pattern wherein the highest averages are notably observed for Substance Use and Schizophrenia. The literature consistently reports elevated burden indices specifically for schizophrenia, as evidenced in various studies [35-36].

In the context of indices such as the inability to establish interpersonal relationships, hereditary predisposition, discouragement from initiating familial bonds, and perceived danger to others, Schizophrenia consistently exhibits the highest indicators. It is noteworthy that findings pertaining to risk factors may be influenced by media portrayals of violence and psychosis, given the relative rarity of encounters with aggressive individuals with schizophrenia [35-37].

Concerning social isolation, hierarchical analyses reveal consistently elevated levels for Depression, Schizophrenia, Substance Use, and Dementia. These disorders exhibit a certain degree of association with the concurrent manifestation of social withdrawal.

In terms of work incapacity, the highest averages are identified in Schizophrenia, Substance Use, and Dementia. Fur-

thermore, with respect to the inability to recuperate despite treatment or support, the highest indicators are observed for Schizophrenia and Dementia. This particular representation is closely linked to the stereotypical notion that within these nosological categories, the locus of control is not internally determined but is rather influenced differently by the pathology and impairment inherent in these disorders.

Concerning the attribution of responsibility for mental health conditions, notably higher averages are evident in Alcohol Abuse, Substance Use, and Anorexia. An intriguing observation is the positive correlation between the perceived social inducement of a mental illness and the belief in individuals having greater control over their condition. This association is exemplified in a study by Yiohioka et al. [32], comparing depression, schizophrenia, and social phobia, where the highest indicators of perceived control, framed as personal weakness, were found in the context of social phobia. This phenomenon may be influenced by prevailing perspectives regarding the purported biological determinants of certain mental illnesses, such as schizophrenia.

Concerning self-destructive tendencies, consistently elevated averages are identified in Schizophrenia and Substance Use. Epidemiological studies, however, indicate that individuals experiencing a major depressive episode, bipolar disorder, and schizophrenia are at risk for self-destructive tendencies, presenting a discrepancy between the current findings and the established epidemiological patterns of self-destructive incidence per disorder.

The congruence between relevance indices is consistent with both the clinical symptomatology and comorbidity patterns. Bipolar Disorder, for instance, exhibits clinical elements reflective of both Depression and Schizophrenia during the manic phase. Moreover, the co-occurrence of Alcohol Abuse and Substance Use in the same individuals, reflecting a high correlation between burden indicators, underscores the interrelated nature of these conditions.

In the current study, our aim was to explore the impact of both direct and indirect contact on individuals' attitudes toward mental illness. The theoretical basis lies in the social-psychological theories of intergroup contact [38]. Direct contact encompassed interactions with individuals experiencing mental illness either outside the workplace, within the family context, or responses deriving from personal experiences. In contrast, indirect contact involved information deriving from media sources, studies, and scientific literature.

It is important, indeed, to mention that the present study's findings reveal no systematic differences in the Comprehensive Stigma Perception Index per nosological category between individuals reporting acquaintance with someone with a mental illness and those without such experience. Similarly, no systematic disparities emerged between those reporting familial ties to a person with a mental illness and those lacking such familial connections.

Consistent with broader studies investigating societal attitudes toward mental illness in the general population, this research observes that individuals lacking prior contact with those with mental illnesses are more prone to adopting ste-

reotypes, such as perceiving the mentally ill as unpredictable and potentially dangerous individuals, and less endorsing the social containment of these individuals [39-44].

However, divergent findings from studies [45-46] challenge this consensus. These studies posit that prior contact with individuals with mental illnesses does not guarantee a more positive attitude towards them. Furthermore, expressions of more positive attitudes by those with prior experience do not necessarily translate into a desire for increased contact with the mentally ill [30, 45]. Numerous intervening factors, including knowledge about the nature of mental illness, the specific type of mental illness, and the quality of interpersonal contact, contribute to the complex association between prior contact and attitudes. Angermeyer and Matschinger [43] caution that any favorable attitudes expressed by individuals with prior contact do not automatically signify a desire for more interaction and a fundamental reversal of mental illness stigma in these individuals.

Concerning the source of information, respondents relying on knowledge from studies exhibited consistently higher levels only for the Anxiety Comprehensive Stigma Perception Index. Those relying on scientific journals demonstrated elevated levels for indicators of Alcohol Abuse and Dementia. Conversely, those depending on media-derived knowledge displayed higher indices for Alcohol Abuse and Anorexia. Notably, the impact of information appears more pronounced for conditions associated with social contexts, such as Substance Use, or those culturally characterized as psychosyndromes, such as Anorexia. The present study highlights the role of the media regarding the stigma of mental illness in some mental disorders, as well as the issue of valid information and the use of the media as a means for anti-stigma campaigns.

Information sources contribute significantly to shaping societal attitudes regarding the burden associated with mental illness. Several studies suggest that inadequate or inaccurate knowledge and information concerning mental health are linked to negative public attitudes toward individuals with mental disorders [47-49]. Conversely, research indicates that individuals possessing valid knowledge about mental illness tend to harbor more favorable attitudes toward those diagnosed with mental disorders [45]. Notably, a study involving medical and nursing students revealed that, despite their elevated knowledge levels in psychiatry and mental health issues, their attitudes did not differ significantly from those of the general population [46].

Gender differences were noted only in the Anxiety dimension, with men consistently exhibiting higher levels. While some studies indicate that women tend to display less stigmatizing tendencies than men, most reviews, including the present study, do not establish a systematic relationship between gender and attitudes toward mental illness [50-53].

Regarding educational level, most indicators showed no significant differences, except for the Anorexia index. People with a higher level of education reported greater Anorexia burden compared to people with a lower level of education. Nonetheless, literature emphasizes that individuals with lower educational levels tend to express more intense discrimina-

tion and harbor more negative perceptions of the mentally ill [28,40,54-56].

Age was not found to be associated with Comprehensive Stigma Perception Index per mental disorder. However, Tanaka et al. [57] suggested that older adults more frequently report higher levels of stigmatizing attitudes toward individuals with mental illness. Further studies are needed to examine the role of age on mental illness stigma in depth.

Limitations and suggestions for further research

Attempting the interpretation of the findings of our current research, it is imperative to acknowledge certain limitations inherent in the methodological approach employed. Chief among these concerns is the reliance on self-report questionnaires for the assessment of attitudes, raising uncertainty about the extent to which participants' responses accurately reflects their actual behavior, as opposed to socially acceptable responses. Even if one assumes that the questionnaire effectively captures the prevailing attitudes of participants, the critical query remains regarding the degree to which expressed intentions translate into behavioral manifestations. As highlighted by Rabkin, existing everyday experiences may not unequivocally support the hypothesis that attitudes deterministically shape behavior [58]. Since this is a cross-sectional study, it cannot demonstrate a direct causal relationship between each factor and attitudes toward stigma. The constrained sample size and predominant inclusion of male participants also imposed limitations on our capacity to investigate potential moderating variables, such as biological sex. Existing research has suggested that stigma tends to be internalized to a greater extent by men compared to women [59]. Furthermore, limitations are encountered in extrapolating the findings beyond the specific characteristics of the sample. Given that the sample exclusively comprises military personnel, the generalization of results should be cautiously restricted to individuals possessing analogous attributes to those in our study.

To achieve a more comprehensive understanding of the mindsets and attitudes prevalent within the military population and the broader public towards individuals with mental illness, further research is warranted. The unique stressors associated with military service for many Greeks necessitate a nuanced exploration, particularly as military personnel routinely encounter individuals experiencing varying degrees of stress, including mild and acute stress, as well as those either chronically mentally ill or at risk of developing mental health challenges within the military context. Consequently, it is recommended that future investigations replicate the present study in samples comprising military personnel from high-stress units, such as border or Special Forces, with the explicit aim of generating valuable insights that could inform the development of specialized prevention programs addressing mental illness stigma and facilitating early detection among military personnel grappling with mental health issues. As suggested

by Economou et al. [60], subsequent studies should endeavor to elucidate the specific facets of the contact strategy that contribute most effectively to positive outcomes. It is essential to recognize the significance of both familiarity with mental illness and the nature of interactions with individuals experiencing severe mental illness as pivotal factors influencing stigma. Additional research on interventions targeting stigma of mental illness would also be useful, as this study only addresses the relationship between stigma and help seeking attitudes. Examining the effectiveness of diverse anti-stigma interventions within the military context, constitutes a crucial subsequent stride that warrants attention.

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