



Relationship between anxiety and medical disorders among compulsory military service candidates between the years 1998–2013[☆]



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ARTICLE INFO

Article history:

Received 27 February 2016

Accepted 22 July 2016

Available online 25 July 2016

Keywords:

Anxiety

Asthma

Irritable bowel syndrome

Hyperhidrosis

Migraine

IDF soldiers

ABSTRACT

One of the most common psychiatric diagnoses among adolescents is anxiety disorder. Many of the anxiety symptoms are expressed physiologically, and therefore can mimic other medical conditions. The aim of this study was to examine the association between anxiety disorders and other medical conditions sharing common symptoms with anxiety (MDSCSA: Irritable Bowel Syndrome, asthma, migraine and hyperhidrosis). The study was based on the national database of the candidates for military service in Israel. Data for the years 1998–2013 was retrieved to create the study dataset. The final cohort population was comprised of 1,229,461 military service candidates. Anxiety prevalence and its association with other medical conditions sharing the same symptoms was examined in the cohort. The results showed significant statistical association between anxiety and IBS, asthma, migraine and hyperhidrosis. These findings support the fact that there is a clear association between anxiety disorder and the examined medical conditions. Moreover, in the military setting, the primary care physician has an important role in giving a correct diagnosis for soldiers presenting with symptoms that can be regarded both to anxiety and to other physical illnesses.

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1. Introduction

Anxiety disorder is one of the most common mental health diagnoses in the general population (Kessler et al., 2005). It is also the most common mental health diagnosis among adolescents (Kessler et al., 2005a, 2005b; Merikangas et al., 2010). However, many of those suffering from anxiety do not seek mental health care, often due to lack of awareness or because of its associated stigma (Britt et al., 2008; Griffiths et al., 2011). Many of the anxiety symptoms are expressed physiologically in various somatic complaints (e.g., breathing difficulty, abdominal pain, excessive sweating, and headaches). Many times the primary care physicians do not associate somatic complaints with anxiety (Kessler et al.,

2002; Vermani et al., 2011).

Studies indicate that physicians often focus on somatic complaints and on confirmation or refutation of medical diseases. This phenomenon is related to lack of knowledge, lack of awareness, or due to time constraints involved in determining a diagnosis of an anxiety disorder (Greenberg et al., 1990; Lecrubie, 1998; Lecrubier et al., 2000).

Anxiety is known to be associated with many physical illnesses (Blanchard et al., 1990; Bragança et al., 2014; Katon et al., 2007; Palagini et al., 2000; Richardson et al., 2006). Irritable bowel syndrome (IBS) was found to have a significant association with different psychiatric diagnoses, in particularly with anxiety (Blanchard et al., 1990; Lydiard, 2001). Asthma was also found to be associated to anxiety (Katon et al., 2007; Richardson et al., 2006). Migraine, sleep disorders, memory dysfunction (Palagini et al., 2000), and hyperhidrosis were also associated with anxiety (Bragança et al., 2014).

It is not unusual for anxiety disorder to present with somatic symptoms as mentioned before. These symptoms share

[☆]This study was carried out within the framework of an honors thesis as a partial fulfillment of the requirements of the Nachshon program of the Medical Corps – Israel Defense Forces.

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similarities with the presentation of the same diseases that were found to be associated with anxiety (i.e. IBS, Asthma, Migraine etc.) (American Psychiatric Association, 2000; World Health Organization, 2010). Therefore, the determination of a proper medical diagnosis can be a complicated mission. On the one hand, these findings offer the possibility of a higher risk for comorbidity if one of the conditions is present. On the other hand, these findings should raise the question whether there are cases of anxiety disorder that are misdiagnosed with a physical illness presenting similarly, especially in a setting which the main medical interaction is with primary care physicians who focus on physical symptoms and diagnoses. Moreover, during a drafting process adolescents with anxiety might have a tendency to conceal some of their fears and it can take a lot of time to revoke medical diseases and suspect in anxiety (Dugas et al., 2003; Hofmann et al., 2008). This situation can also add to misdiagnosing anxiety disorder as a physical illness.

Prompt diagnosis and treatment are important for patients suffering from anxiety disorders, that affects their quality of life, their social life, and their careers. Misdiagnosis of anxiety can be costly because of unnecessary burden on the medical system and absence from work. Moreover, an association between anxiety and suicide has been reported (Boden et al., 2007) and many of the patients carrying out a suicide act had consulted a physician prior to their act, presenting nonspecific medical complaints of physical aches and pains (Luoma et al., 2002). Similar findings were also shown in a study of IDF soldiers aged between 18 and 21 years (Hochman et al., 2014).

At the time of induction, the candidates' stress level is likely to rise (Bodner et al., 2007; Lubin et al., 2010). As a result, anxiety levels may also increase (Apter et al., 1993; 2008). Hence, in light of the potential surge in the risk of anxiety disorder during military service, its investigation is critical. Anxiety disorder which is left untreated may manifest itself in high levels of frustration, a negative impact on quality of life, and, in the case of military service, as a risk factor for suicide.

The main purpose of this study was to find associations between anxiety disorders and other medical diseases that share common symptoms with anxiety (MDSOSA; Table 1), in order to underline the relationship between somatic complaints and anxiety disorder (IBS, asthma, migraine, hyperhidrosis).

2. Methods

2.1. Study design

We held a retrospective cross sectional study based on the national database of the candidates for military service in Israel. Data from the years 1998–2013 was retrieved to create the study

database. The final cohort population was comprised of 1,229,461 military service candidates. Prevalence of anxiety and its association with other medical conditions sharing the same symptoms were examined in the cohort.

2.2. Processing

National military service is mandatory for all Israeli citizens reaching the age of 18. Men serve for three years in the Israel Defense Forces (IDF), whereas most women serve for two years. All young Jewish individuals and Druze males, who turn 17 years of age, are carefully screened for physical and mental pathology prior to military induction, in order to determine their eligibility for service (Bodner et al., 2007; Gal, 1986). While soldiers with severe previous psychiatric diagnosis (i.e., major depression, bipolar disorder, and psychosis) or severe medical disease (i.e., xeroderma pigmentosum, Zollinger-Ellison syndrome, and severe aortic stenosis) are excluded from service, soldiers with mild or moderate severity psychiatric or medical disorders are marked and followed during their military service. It is important to identify difficulties or problems among the recruits so that their medical profiles will suit their military assignment (Bodner et al., 2007). The profile determines the classification of the soldier to various units, including to combat and non-combat (Bodner et al., 2006).

In our study, all IDF candidates, whether or not found ultimately suitable for military service, were included in the research. The IDF computerized database includes extensive data on soldiers, including date of recruitment, military role, intellectual capability rating, and an electronic medical record.

As a part of the military pre-prescription assessment mentioned before, most Israeli teenagers undergo a routine medical evaluation and fitness-for-service (FFS) classification at a pre-specified age. The medical evaluation includes medical questionnaires completed by both the candidate and his family physician; a general physical examination, including anthropometric measurements, vital signs, and visual acuity measurements; a physical examination by a physician; and further tests and consultations deemed necessary by the physician. In the case of uncertainty or subsequent to any other relevant finding in the anamnesis or physical examination, the candidates are referred to a medical specialist. At the conclusion of this process, one or more FFS classification numerical codes for medical diagnoses and functional status, indicating fitness for combat assignments, are recorded and retained in the candidate's personal and medical record. In this study we used the conscripts' medical records to access demographic details (gender, FFS determination date, and age at the time) and these specific FFS codes. The FFS codes used in this study and their precise criteria are shown in Table 1.

Table 1
Diagnosis criteria of the FFS codes in the study database.

Code	Diagnostic criteria for FFS
Anxiety	Self-reporting in a questionnaire and review of the patient's medical record, with high attention to stress situations in the past and the ability of one to cope with them. This FFS was assigned for several kinds of anxiety disorders such as agoraphobia, social phobias, isolated phobias, panic disorders, generalized anxiety disorder and other unspecified anxiety disorders. This FFS was assigned only after a confirmation by a psychiatric consultant.
Asthma	Pulmonary function test and a pulmonology consultation. Attacks can be controlled with short acting beta agonists, they occur less than twice a week and the force expiratory volume in the first second (FEV1) in pulmonary function tests is decreased by less than 20% in a 4 mg/ml metacholine pulmonary stress test. Diagnosis also warranted by a more severe condition.
Irritable bowel syndrome-	Self-reporting in a questionnaire, a review of the patient's medical records, and a gastroenterologist consultation, with or without a full colonoscopy.
Hyperhidrosis	Self-reporting in a questionnaire, a review of the patient's medical records, and a dermatologist consultation.
Migraine	Review of the patient's medical records and a neurological consultation, in a patient with at least one migraine episode monthly, or a more severe condition.

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