

# Mental health screening of Iranian conscripts during basic military training in Guilan province

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## ABSTRACT

**Purpose:** Aside from psychological suffering, mental disease can bring about a negative influence on conscripts learning abilities and reduce effectiveness of military trainings. Hence, identifying at risk conscripts is of vital importance. This study aimed to investigate the mental health of conscripts during a two-year period from 2011 to 2013 in a military base in Guilan.

**Materials and Methods:** In this descriptive cross-sectional study, the mental health of 930 conscripts (mean age of  $19.78 \pm 1.57$  years old) was assessed using a 28-item general health questionnaire (GHQ-28), during basic military training. Acquired data were analyzed using the chi-squared test ( $\alpha = 0.01$ ).

**Results:** Of the participants, 35.2% were identified as potential at risk conscripts. There was a significant difference in participants' age and education level regarding mental health ( $P = .007$  and  $.005$ , respectively). No significance was found on marital status ( $P = .483$ ). Concerning subscales, 30.6% had physical symptoms, 38.5% had anxiety and insomnia, 54.2% had social dysfunction and 20.9% had severe depression.

**Conclusion:** To prevent symptom exacerbation of at risk conscripts and to reduce treatment costs of military training bases, it is recommended that psychological assessment be done before conscription, not during it.

**Keywords:** mental health; screening; conscripts; military; Iran; 28-item general health questionnaire (GHQ-28).

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## INTRODUCTION

Any eligible Iranian man reaching 18 years old must become a conscript for 24 months according to the law. Beside legal obligation, there are some folk justifications and cultural norms for the necessity of doing military services including personality maturity, increasing sense of responsibility, developing social interaction skills (because of socio-cultural diversity of conscripts), emphasizing the importance of family bonds and getting prepared for secondary socialization. Some studies have scientifically approved development of personality during and after military service.<sup>1</sup>

Beside its productive effects, military service might bring about some challenges. In military service, an individual faces new conditions which presumably he

has never met through his entire life. Special life style restrictions and changes in sleep-wake hours, autonomy, appearance and clothing, loss of personal privacy, military disciplines, unpredictability of circumstances and separation from family and friends for a long time are major characteristics of conscription period which may in turn adversely affect an individual's mental health.

For example in a study, 57.8% of Iranian conscripts were experiencing psychological distress.<sup>2</sup> In similar studies in Turkey and Norway, 29.9% and 48% of draftees were had mental issues, respectively.<sup>3,4</sup> Prevalence of mood and anxiety disorders has also been reported in Singaporean conscripts.<sup>5</sup> In addition, feeling homesick,<sup>6,7</sup> psychosomatic symptoms<sup>8</sup> and also some problem such as smoking<sup>9-11</sup> are found to be increasing during

conscription. These challenges as well as predisposing factors can deplete coping resources of the individual to the extent that may result in impulsive behaviors such as harm to self or others or in some cases suicide.<sup>12,13</sup>

Thus, psychological screening can help in detecting at-risk conscripts and reduces treatment costs by interventions. Furthermore, if above mentioned issues are not dealt with, this may promote pessimistic views toward military service and in turn provoke other behavioral problems such as frequent absence or escape from military bases. Based on level of education, conscripts in Iran are classified into two groups which pass different courses of military services. The group with academic degrees, including officers and sergeants, and the other with high school degree and less which become privates. This study aims to investigate mental health of the second group, i.e. privates, passing the fourth week of their basic military training during in military base in Guilan in a 2-year period from 2011 to 2013.

## MATERIALS AND METHODS

Military service in Iran consists of two parts. First is basic military training which lasts 10 weeks for privates (this period is eight weeks for the conscripts with academic degrees). After that they will join specialized units and serve for about 19 months. According to organizational schedule, mental health of conscripts should be assessed in the fourth week of basic military training. This is because this time period is not too early so that sudden changes in individuals' daily routines and consequent temporary disturbance of coping mechanisms and adaptability might mislead mental health professionals. Also, it is not too late to help at-risk conscripts. Thus, at this time point they have presumably developed more adaptability. Based on this criteria, at the end of the fourth week, all conscripts are obliged to complete a 28-item general health questionnaire (GHQ-28) questionnaire along with demographic information consisting age and level of education. Other demographic information was obtained in conscripts' reception but because of security issues were not available to the authors.

GHQ is a self-report screening tool which was developed by Goldberg in 1970s to detect those likely to have or be at risk of developing psychiatric disorders.<sup>14</sup> The original questionnaire consists of 60 items from which versions of 30, 28, 20 and 12 are derived from. The 28-item version includes four subscales measuring somatic symptoms, anxiety and insomnia, social dysfunction and severe depression, each containing 7 items. Each item has four possible responses scored from 0 to 3. So, total

possible score for GHQ-28 ranges from 0 to 84 and for any subscale it varies from 0 to 21. There is also a binary scoring method in which the first two possible answers for each item are scored 0 and the two last are scored 1.<sup>15</sup> In this study the former method was used. Scores exceeding threshold of 21 in total and 6 in subscales were considered as "at risk" because in this way sensitivity and specificity of the instrument would be optimal.<sup>16</sup> Reliability coefficients of this test range from 0.88 to 0.91 in various studies.<sup>17,18</sup> The acquired data were analyzed using descriptive and inferential statistics (chi-squared test,  $\alpha = 0.01$ ) and calculations were done by Statistical Package for Social Sciences (SPSS) version 19.

## RESULTS

Nine hundred thirty conscripts completed GHQ-28, ranging from 18 to 30 years old, with the mean age of  $19.78 \pm 1.57$ . Conscripts of 22 years old and older had the lowest frequency in our age groups with 104 individuals. 19 years old had the highest frequency with 368 conscripts. Five participants were totally illiterate and 540 participants had high school degree. In addition, only 45 participants were married. 19 and 21 years old age groups had the most and the least number of at risk cases, respectively. The difference in percentage of cases between various age and education groups was statistically significant ( $P = .007$  and  $.005$ , respectively). Married conscripts were more at risk than singles but it was not statistically significant (Table 1).

Severe depression had the lowest mean score of  $3.68 \pm 4.75$ , while social dysfunction had the highest mean of  $7.02 \pm 3.50$  among the subscales. For the other subscales, mean score of anxiety and somatic symptoms was  $5.91 \pm 4.56$  and  $5.06 \pm 4.29$ , respectively. This value was  $21.67 \pm 13.92$  for the total score. In terms of frequency, social dysfunction had the highest and severe depression had the lowest relative frequency. Totally, 35.2% had a sum score greater than 21 and were classified as at risk cases (Table 2).

## DISCUSSION

In this study, GHQ-28 was used to investigate the prevalence of mental problems among conscripts during basic military training in one of Guilan's training military bases from 2011 to 2013. 35.2% of the participants were identified as at risk cases. Table 3 shows results of studies on conscripts in different countries.

The present study had less at risk cases compared to other studies which had used the same screening tool shows. However, it had more at risk cases than three

**Table 1.** Distribution of general health questionnaire (GHQ) at risk cases by different variables among privates in one of Guilan provinces' military training bases, 2013.

Variables	Cases		Total in the Sample		P value* (χ²)
	Percentage	Frequency	Percentage	Frequency	
Age (years)					
18	38.4	53	14.8	138	0.007
19	41.3	152	39.6	368	
20	29.7	62	22.5	209	
21	26.1	29	11.9	111	
≥ 22	31.7	33	11.2	104	
Marital Status					
Single	34.9	309	95.2	885	0.483
Married	40	18	4.8	45	
Education					
< 6 years	30.1	19	6.8	63	0.005
6-8 years	39.2	49	13.4	125	
9-10 years	44.5	90	21.7	202	
11 years (high school degree)	31.3	169	58.1	540	

\*  $\alpha = 0.01$ **Table 2.** Prevalence of cases on GHQ-28 subscales among privates in one of Guilan provinces' military training bases, 2013.

Scales	Cases	
	Percentage	Frequency
Somatic symptoms	30.6	285
Anxiety and insomnia	38.5	358
Social dysfunction	54.2	504
Severe depression	20.9	194
Total score	35.2	327

**Table 3.** Results of studies on conscripts' mental health in Iran<sup>2,19</sup>, Norway<sup>3</sup>, Singapore<sup>20</sup> and Switzerland.<sup>21</sup>

Country	Year of Study	Screening Tool	Percentage of at Risk Cases
Iran	2006	GHQ-28	57.8
Iran	2005	SCL-90	16.2
Norway	1985	GHQ-12	48
Singapore	2007	MWSQ	20.44
Switzerland	2009	SPro	19.6

Keys: GHQ, general health questionnaire; SCL, symptom checklist revised; MWSQ, mental wellness screening questionnaire; SPro, self-screen prodrome.

others which had used a different screening tool. To compare mental health of conscripts with their peers out of the military bases, data from university students can be used. Studies on students in neighboring provinces of Guilan show that the prevalence of at risk cases had been 43.9% in Zanjan,<sup>22</sup> 27.5% in Ardabil<sup>23</sup> both using GHQ-28 (the Ardabil study was done only among male students), and 69.3% in Qazvin using symptom checklist-90-revised (SCL-90-R).<sup>24</sup> There are also two studies which have investigated mental health status among general population of Guilan. One has reported at risk

cases prevalence of 15.8% among men using GHQ-28,<sup>18</sup> while the other has used schedule for affective disorders and schizophrenia (SADS) and reported that 8.57% of studied men suffered from at least one psychological disorder.<sup>25</sup>

Among studies which had used GHQ, prevalence of mental disease in conscripts of the present study was lower than the others with military participants.<sup>2,3</sup> Also, this prevalence was rather lower than similar studies with university participants, but is higher than general population of Guilan province.

Analysis of demographic variables reveals a significant difference regarding mental health between various age groups, so that prevalence of at risk cases among 18 and 19 years old participants was higher than other age groups, which is contrary to previous findings.<sup>2,19</sup> To explain this finding it should be noted that at the late teens, adult identity is still vaguely defined. Furthermore, younger conscripts have a more limited experience of secondary socialization. On the other hand, older conscripts who do military service with two or more years of delay, presumably develop their job identity in that time period before their service which is an important matter of concern for men before and during military service. These factors can contribute to having more distress in this age group.

Another variable of interest was marital status. There was no significant difference of mental health status between married and single privates which is consistent with previous findings.<sup>2,19</sup> However, as a number of studies have implied, marriage can probably enhance mental health.<sup>26</sup> In this regard, concerns relating to

financial issues and marital needs can be influential.

Mental health at various levels of education was statistically significant which is consistent with one of the previous findings<sup>19</sup> and inconsistent with another one<sup>2</sup>. Considering limited number of research done on conscripts' mental health in Iran, a more elaborate explanation of the results needs repetition of such studies. But several factors such as demographic variables, measurement instrument, cohort effect, geographical area, research method, training policies of military bases and their staff attitudes toward conscription might all influence the results of such studies.

To account for the magnitude of the first three subscales, it should be noted that some factors such as decrease in amount of sleep and disturbance of sleep-wake hours, sudden and intense increase in physical activity and subsequent fatigue, restricted autonomy and limitation of some social activities may result in endorsement of many items which is not necessarily reflective of the real-life mental status of the individual and is merely due to a temporary alteration of life style. However, because items of the depression subscale only measure psychological manifestation of depression with no physical overlap, frequency of 20.9% is a matter of importance and needs further investigation in future studies.

## CONCLUSION

Our findings can be a valuable source of information for military decision-makers. While importance of mental health screening cannot be ignored, accuracy of screening tools and their ability to identify at risk cases should not be overlooked. Thus, there seems to be some defects in the current tool used in military training bases which are given below:

1. Some items of the first three subscales of GHQ-28 measure physical manifestation of psychological pressures and some of other items may be endorsed because of the temporary conditions of the basic training period (e.g. item 10 asks about feeling constantly under strain, or item 20 asks about feeling capable of making decisions about things recently). Thus, they may reflect a transient and not so relevant picture of conscripts' mental health rather than their real psychological status. To get more accurate results, use of alternative tools is recommended.
2. During conscription, privates may attempt to provide a better or worse psychological profile depending on different motivations to seek different gains. Therefore use of screening tools which are not face-valid and contain validity scales can help overcome this problem.

3. There have been several cases that someone suffering from a serious psychological disorder began basic military training, but diagnosis of his problem was postponed until several weeks later. To prevent exacerbation of symptoms of such cases and reduction of treatment costs imposed on military training bases, it is recommended that mental health screening be done before beginning of conscription, not during it.

## CONFLICT OF INTEREST

None declared.

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