Neuroses among Armed Forces Personnel

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Abstract

Background : The phenomenon of “Military Family Syndrome” has been hotly debated. Mental disorders are however, important causes of morbidity in the armed forces.

Methods : A cross sectional study was carried out on 600 randomly selected troops and families in a large military station. General Health Questionnaire 12 (GHQ-12) was used as a screening test for neuroses. Neuroses was defined as score of three and above on the GHQ-12.

Result : Overall prevalence of neuroses was 31.34% with 95% confidence interval between 27.41% and 35.55%. Gender did not have any effect on prevalence of neuroses nor did marital status. The soldiers in the age group of 25-36 years were most affected. Neuroses was more common in the lower ranks and among troops who belonged to arms. Among wives, age, rank and type of service (whether from arms or services) of husband were not associated with neuroses.

Conclusion : There is a need for preventive psychological services in the armed forces. Leadership and man-management sensitive to changing needs of the soldier should be promoted.

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Key Words: Neuroses; Armed forces; General health questionnaire 12

Introduction

Neuroses or minor mental disorders constitute most of the psychiatric illness in the population. A study done by Mumford et al in urban population of Rawalpindi found 25% of women and 10% of men suffering from minor mental disorders [1]. Banerjee et al [2], in a study in suburbs and villages of Pune found prevalence of neurotic disorders to be 18-20% with no urban-rural difference.

Lagrone [3], showed that diagnosis of behavioral disorders was more common in US military clinics and child abuse was five times higher than the civil population. He called this phenomenon as “Military Family Syndrome”. However, the phenomenon of “Military Family Syndrome,” was refuted by Morrison [4], who did not find any difference in diagnosis of mental disorders between armed forces and civil population.

To resolve this issue and identify other determinants of minor mental disorders, such as age, marital status, rank and type of service (whether arms or services), the present study was carried out.

Material and Methods

The study was carried out among army personnel and their spouses in a large cantonment. Previous studies in the community have shown prevalence of neuroses to be around 20% [1,2]. This was taken as a working estimate for calculating

sample size. Using WHO/CDC Epi 2002 (Statcalc) statistical software for sample size calculation 20% was entered as expected frequency with worst expectable result at 16.5%. With these the required sample size at 95% confidence interval (CI) was estimated to be 501. It was decided to aim for a higher figure to cater for non-response, incomplete data, design effect or the actual prevalence being appreciably different from 20%. By random sampling 600 participants were selected for the study (300 soldiers and 300 spouses).

A two stage cluster sampling was followed. There were 30 military units of various sizes in the cantonment. For selection, a military subunit (such as a company strength or platoon) was taken as a cluster. All clusters in the station were listed unit-wise indicating the strength in each with the cumulative total in the extreme right column. It was decided to choose 30 clusters and to draw randomly 10 individuals from each cluster. The cumulative total divided by 30 gave the sampling interval. The first cluster was selected randomly and the subsequent clusters were selected by adding the sampling interval every time, till all the 30 clusters were selected. Thus the sampling was based on ‘probability proportionate to size’ (PPS) principle with larger units having a probability of contributing more number of clusters to the sample compared to the smaller units. After selecting the 30 clusters, from each cluster, 10 individuals were selected by simple random sampling using a table of random numbers. In this manner 300 serving military persons were selected. For selecting the family (wives) of the service personnel, a similar procedure was used by taking each family colony as a cluster of suitable

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size, and subsequently drawing 30 clusters. From each cluster 10 wives of serving personnel were selected by simple random sampling. Thus a total of 300 wives of serving personnel were selected.

The study used a cross sectional design. Data was collected from each randomly selected respondent only once. General Health Questionnaire -12 (GHQ-12) was used to detect neuroses or minor mental disorders in both servicemen and their families which has been used to screen general population for the presence of minor mental disorders in clinical and community surveys [5]. GHQ-12 consists of 12 questions having four response categories. Bimodal method was used in the study. First two response categories were given a score of "0" whereas 3rd and 4th response categories were given a score of "1" each, which gives a maximum possible GHQ score of twelve [6]. A number of studies indicate that it is a reasonably sensitive and specific instrument. Sensitivity and specificity ranges are reported between 74.2% and 95% [6]. GHQ-12 has been validated in different languages, cultures and diverse settings [7].

In the present study neuroses was defined as score of three and above on GHQ-12. The study subjects were explained how to fill the questionnaire. The instrument was given to them and the completed response was collected the next day. Spouses were told not to influence study subjects while filling the questionnaire. All statistical analyses including sample size calculations were done using Epi Info 2002 (Epidemiological and Statistical software developed by WHO/CDC, Atlanta). For establishing statistical associations, Chi Square test and Odds Ratio (OR) with 95% CI was used where applicable.

Results

Out of the 300 selected service personnel, information could be elicited from 270 (90%) respondents. The rest 30 (10%) could not be interviewed because of miscellaneous reasons such as being out of station (leave or temporary duty) during three consecutive visits by the investigators and unwillingness to participate in the study. Out of the 300 spouses selected, 250 (83.33%) wives of service personnel could be interviewed. Non-response rate among families was 16.67%, little higher than servicemen. The reasons for non-response were by and large same as those in servicemen.

In the present study, prevalence of minor mental disorders in military personnel and their families as elicited by screening with GHQ-12 was 31.34% (95% CI 27.41-35.55) (Table 1). It was slightly more among servicemen compared to their spouses. This difference was not statistically significant (Chi Sq = 0.29, df=1, P=0.58).

The very young soldier (age group 19-24 yrs) and the soldier above 42 years had the lowest prevalence. Soldiers between 25 and 36 years of age had the highest prevalence (Table 2). However among spouses no correlation was found between age and neuroses (Table 3). This could be studied only among service personnel as the spouses were all married. There was no association of marital status and neuroses in service personnel in the present study (Table 4). Interestingly,

there was a positive and statistically significant association between rank and neuroses among service personnel, those in the lower ranks had higher prevalence of minor mental disorders (Table 5). However, among families, rank of husband had no statistically significant impact on prevalence of neuroses (Table 6). Soldiers from arms had a higher statistically significant prevalence of neuroses as compared to those from the services (Table 7). However, among families, type of service of husband had no significant association with neuroses (Table 8).

Discussion

In the present study the prevalence of neuroses at 31.34% among armed forces personnel and their spouses, was higher than that reported in the civil population in the subcontinent (around 20%) from earlier

Table 1

Prevalence of neuroses in personnel, families (wives)

Study population (Armed Forces)	Neuroses		Total	Prevalence (%)*
	+	-		
Personnel	88	182	270	32.59 (27.10-38.58)
Families	75	175	250	30 (24.47-36.15)
Total	163	357	520	31.34 (27.41-35.55)

*Figures in brackets indicate 95% CI. Chi sq =0.29, df =1, p= 0.58; OR =1.13 (95% CI between 0.77 & 1.66)

Table 2

Distribution of neurotic status according to age in personnel

Age Group (in years)	Neuroses (%)		Total (%)
	+	-	
19-24	5 (16.7)	25 (83.33)	30 (100)
25-30	30 (46.15)	35 (53.85)	65 (100)
31-36	26 (40.62)	38 (59.38)	64 (100)
37-42	23 (29.48)	55 (70.52)	78 (100)
>42	4 (12.13)	29 (87.87)	33 (100)
Total	88 (32.59)	182 (67.41)	270 (100)

Chi square = 17.42, df = 4, p<0.01 (significant)

Table 3

Distribution of neurotic status according to age in families (wives)

Age Group (in years)	Neuroses (%)		Total (%)
	+	-	
20-23	5 (26.32)	14 (73.68)	19 (100)
24-27	13 (26.54)	36 (73.46)	49 (100)
28-31	25 (32.05)	53 (76.95)	78 (100)
32-35	18 (28.12)	46 (71.88)	64 (100)
>35	14 (35)	26 (65)	40 (100)
Total	75 (30)	175 (70)	250 (100)

Chi Square= 1.14, df = 4, p>0.05 (not significant)

Table 4

Distribution of neurotic status according to marital status in personnel

Marital Status	Neuroses (%)		Total (%)
	+	-	
Married	19 (36.53)	33 (63.47)	52 (100)
Unmarried	69 (31.66)	149 (68.34)	218 (100)
Total	88 (32.59)	182 (67.41)	270 (100)

Chi Square = 0.46, df = 1, $p > 0.05$ (not significant); OR = 1.24 (95% CI between 0.63 and 2.45)

Table 5

Distribution of neurotic status according to rank in personnel

Ranks	Neuroses (%)		Total (%)
	+	-	
Sepoys	46 (41.82)	64 (58.18)	110 (100)
NCOs	39 (33.33)	78 (66.67)	117 (100)
JCOs & Officers	3 (6.98)	40 (93.02)	43 (100)
Total	88 (32.59)	182 (67.41)	270 (100)

Chi Square = 17.13, df = 2, $p < 0.05$ (significant)

Table 6

Distribution of neurotic status in families (wives) according to rank of their husbands

Husband's ranks	Neuroses (%)		Total (%)
	+	-	
Sepoys	9 (17.65)	42 (82.35)	51 (100)
NCOs	51 (34.45)	97 (65.55)	148 (100)
JCOs	14 (33.33)	28 (66.67)	42 (100)
Officers	1 (11.11)	8 (88.89)	9 (100)
Total	75 (30)	175 (70)	250 (100)

Chi Square = 6.86, df = 3, $p > 0.05$ (not significant)

studies [1,2]. Out of the two studies in the civil community, Banerjee et al [2], who reported an overall prevalence of neurotic disorders of less than 20%, have used the same instrument for labelling neuroses as the present study (i.e. GHQ 12). Strictly speaking only this study is comparable to the present study. On the basis of this one may tend to agree with Lagrone's concept of the "Military Family Syndrome" [3]. Apart from the stresses of modern living on the domestic front, the soldier also faces the unique mental and physical stresses of military life. This may account for the higher prevalence of minor mental disorders in the military community. There was no significant difference according to gender in the prevalence of neuroses. Similar findings have been reported by other workers [2,8].

The association of age with neuroses among armed forces personnel indicates that young soldier who has just enrolled and the older soldier are less prone to minor mental disorders. The major impact of neuroses appears

Table 7

Distribution of neurotic status of personnel according to type of service

Type of service	Neuroses (%)		Total (%)
	+	-	
Arms	70 (37.23)	118 (62.77)	188 (100)
Services	18 (21.95)	64 (78.05)	82 (100)
Total	88 (32.59)	182 (67.41)	270 (100)

Chi Square = 6.07, df = 1, $p < 0.05$ (significant)
OR = 2.11 (95% CI between 1.11 and 4.03)

Table 8

Distribution of neurotic status in families (wives) according to the type of service of husbands

Type of service	Neuroses (%)		Total (%)
	+	-	
Arms	36 (30.25)	83 (69.75)	119 (100)
Services	39 (29.77)	92 (70.23)	131 (100)
Total	75 (30)	175 (75)	250 (100)

Chi Square = 0.01, df = 1, $p > 0.05$ (not significant)
OR = 1.02 (95% CI between 0.57 and 1.82)

to be in the soldier in the 25-36 years age group. This may be due to increasing responsibilities of military life for the soldier in this age group, while the older soldier over a period of time develops coping skills.

Marital status did not have an impact on prevalence of neuroses in our study. In general, married people tend to be happier and have better psychological health than single people although this finding varies with how the particular culture views marriage [8,9]. In the military community married people undergo separation from their families because of exigencies of service. The beneficial value of married status on psychological well being may be offset in military service to some extent.

Lower ranks were more prone to minor mental disorders in our study. Similar results have been reported by other workers. Hotopf et al [10], in a cross-sectional study done on peacekeeping UK soldiers using the GHQ-12, found that lower ranks had significantly higher chances of minor mental disorders. A study among Australian Gulf War Veterans carried out using the GHQ-12 also reported similar results. Psychiatric morbidity was highest in "other ranks, non-supervisory," (43.2%) followed by "other ranks-supervisory," (39%) and lowest among "officer rank" (35%) [6].

The findings of the present study indicate the need for preventive psychological services in the armed forces. Commanders at all levels, particularly in the arms should be aware of the need for innovative leadership and man-management sensitive to the changing needs of the information age.

Conflicts of Interest

None identified

Intellectual Contribution of Authors

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Journal Scan

Chirdan LB, Uba AF, Yiltok SJ, Ramyil VM. Paediatric blunt abdominal trauma: challenges of management in a developing country. *Eur J Pediatr Surg* 2007; 17: 90-5.

In developed countries, the availability of advanced imaging techniques has reduced the necessity for laparotomy following blunt abdominal trauma in children. Laparotomy rates still remain high in developing countries where advanced imaging techniques are not available. A simple management protocol to identify patients who require laparotomy could reduce the laparotomy rate in children with blunt abdominal trauma in these countries. This is a review of children aged 15 years or below managed at Paediatric Surgery Unit, Department of Surgery, Jos University Teaching Hospital, Jos, Nigeria over a five and half year period for blunt abdominal trauma. The children were divided into two groups. Group A consisted of children managed from January 1999-December 2000. During this period, there was no protocol. Group B consisted of children managed from January 2001-June 2004. During this period, a simple management protocol was introduced. The laparotomy rates in these two groups were analysed using a simple chi-square. A total of 48 children, representing 63% of children with abdominal trauma during the study period, were examined (Group A 17; Group B 31). Their ages ranged from 1.5 years -15 years (median 9 years). There were 34 boys and 14 girls (M:F=2.4:1). Road traffic accidents accounted for 38 (79.1%) and falls from heights for nine (18.75%) cases and one boy with hydronephrotic kidney fell off the staircase at home. The diagnosis was clinical, supported by abdominal ultrasound scan (USS) and plain abdominal film. Twenty eight (58.3%) children had laparotomy (15 in group A; 13 in group B). There was a statistically significant difference in the laparotomy

rates between group A and group B) ($p < 0.01$). Nineteen children were managed nonoperatively (2 in group A; 17 in group B); one child died before an operation could be performed. There were 59 abdominal organ injuries in 45 children. In two children, ultrasound could not diagnose any organ injury. There were 33 splenic injuries; 15 children had splenic conservation, seven underwent a splenectomy, while 10 were managed nonoperatively. One child with splenic injury died before operation. Of seven liver injuries, four required suturing of lacerations, one subcapsular haematoma was left undisturbed at laparotomy, while two were managed nonoperatively. There were four pancreatic injuries. Three were managed nonoperatively, while one associated with duodenal injury had a laparotomy. All six gastrointestinal injuries had laparotomy. There were five renal injuries; three had laparotomy with suturing, while two were managed nonoperatively. There were four bladder injuries, two had laparotomy with suprapubic catheter insertion, while two were managed nonoperatively. There were seven retroperitoneal haematomas in association with other organ injuries. Associated injuries included head injury in two, long bone fracture in two, spinal injury and chest trauma in one each. There were four deaths, one before surgery could be performed. The authors concluded that the blunt abdominal trauma in children resulted mainly from road traffic accidents. The use of a simple protocol supported by ultrasound scan could reduce the laparotomy rate in countries with limited facilities.

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