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Probable mental illnesses among tea plantation workers in Anaimalai, Tamil Nadu, South India

Ashwini G. S.¹, Naveen Ramesh²*, Navya C. J.³, Jino Joy², Abel Thomas Oommen², Jyoti Singh⁴

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*Correspondence:

Dr. Naveen Ramesh,

E-mail: drnaveenr@gmail.com

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ABSTRACT

Background: The prevalence of mental illnesses among industrial workers is found to be 14% - 51%, which is more than that in the general population. Individual's psychosocial functioning has an impact on the work efficiency. The objective of the study was to assess the prevalence of probable mental illness and its associated factors among workers in selected tea estates in South India.

Methods: A cross sectional study was done in two tea estates in Tamil Nadu from March to May, 2012. The General Health Questionnaire (GHQ) 28 was used to screen for probable mental illness. Sociodemographic details, work profile and associated risk factors were also elicited.

Results: Among the 400 subjects interviewed, 75.5% were females. The mean age was 43.21 (± 7.47) years and the mean work experience was 21.38 (± 9.31) years. In our study 12.8% subjects screened positive for probable mental illness and 1%, 1%, 0.2% and 1.5% screened positive in the domains somatic symptoms, anxiety/insomnia, social dysfunction and severe depression respectively. Workers who screened positive for probable mental illness had availed significantly greater duration of leave in the previous year. There was no significant association of mental illness with age, gender, marital status, substance abuse, designation, co-morbidity and stressful life events.

Conclusions: There is a need to screen individuals in different occupation for probable mental illness and those screened positive need evaluation by a psychiatrist. There is also a need to explore associated factors in order to improve one's health and work efficiency.

Keywords: Probable mental illness, tea estate workers, South India, GHQ28

INTRODUCTION

Mental illnesses are becoming increasingly common and are a growing global health concern. According to the estimates, by 2020 DALYs lost due to mental illness are expected to represent 15% of the global burden of diseases.¹

Mental illnesses are one of the leading causes of morbidity affecting different age groups and distributed over different geographic area, socio-cultural background in India. ^{2, 3} In India, the prevalence of mental disorders in general population ranges from 1.8% - 20.7%. ¹

Studies in the past have revealed that the prevalence of mental illness among industrial workers ranges from about 14% - 51%, which is more than that in the general population. 4-6 Psychiatric disorders constitute one of the leading occupational health problems, with one-third of all workers reporting adverse psychological effects. 7

¹Department of Community Medicine, BGS Global Institute of Medical Sciences,

²Department of Community Health, St. John's Medical College, Bangalore, Karnataka, India

³Department of Community Medicine, Amala Institute of Medical Sciences, Thrissur, Kerala

⁴Medical Officer, Plantation Hospital

Since an individual's psychosocial functioning has an impact on work, there is a need to screen workers in different settings for mental illnesses. 8,9 In the light of above observation, this study was undertaken to screen workers in tea plantation setting in South India for probable mental illnesses and understand their associated factors. This will be helpful in addressing the problem of mental illness in a better way. This study objective were to assess the prevalence of probable mental illnesses among workers in two selected tea estates in South India and to study the factors associated with probable mental illness among these workers.

METHODS

A cross-sectional study was conducted from March to May 2012 in two selected tea estates of Anaimalai, Tamil Nadu, South India. All permanent workers between the age group of 18-60 years were included in the study. Workers who could not be contacted even after two visits and individuals previously diagnosed with a mental illness were excluded from the study. Ethical clearance for this study was obtained from the institutional ethical board.

The General Health Questionnaire 28 (GHQ 28) was the tool used to screen the workers for probable mental illness. GHQ 28 was devised by Goldberg, licensed to GL Institute and has been validated in India. It has 28 questions under four domains namely: anxiety/insomnia,

severe depression, psychosomatic symptoms and social dysfunction. Each question is scored as 0 and 1. A total score of ≥ 6 and/or a total score of ≥ 5 in any one of the four domains are considered to be positive. The questionnaire was translated to the local language and then back translated to English, to minimize the errors and increase the accuracy.

A survey team was formed, who were briefed and trained to administer the pretested interview schedule. The schedule was administered to the workers after obtaining the written informed consent. Details regarding sociodemography, work profile and other possible associated risk factors were also collected. Information regarding the number of leaves availed in the last one year by the workers was obtained from the records maintained in the estate office. Data was entered into Microsoft Excel and analyzed for measures of central tendency, proportions and chi-square test using standard statistical software.

RESULTS

Socio-demography

Of the 400 workers interviewed, 302 (75.5%) were females. The mean age of the study subjects was 43.21 years (± 7.47 years). Majority of them, 368 (92%) of them belonged to middle socio economic class as per Standard of Living Index. The socio-demographic profile of the study population is as shown in Table 1.

Variables		Male	Female	Total
Age (years)	21-30	6(6.1%)	13(4.3%)	19(4.8%)
	31-40	17(17.3%)	115(38.1%)	132(33%)
	41-50	46(46.9%)	133(44%)	179(44.8%)
	51-60	29(29.6%)	41(13.6%)	70(17.5%)
Education	Illiterate	5(5.1%)	102(33.8%)	107(26.8%)
	<7 th Standard	30(30.6%)	71(23.5%)	101(25.2%)
	7-10 th Standard	25(25.5%)	55(18.2%)	80(20%)
	>10 th Standard	38(47.8%)	74(24.5%)	112(28%)
Designation	Pluckers	22(22.450	284(94%)	306(76.5%)
	Pruners/Sprayers	43(43.9%)	1(0.3%)	44(11%)
	Others	33(33.7%)	17(5.6%)	50(12.5%)
Marital status	Married	91(92.9%)	264(87.4%)	355(88.8%)
	Widowed	2(2%)	27(8.9%)	29(7.2%)
	Divorced	1(1%)	5(1.7%)	6(1.5%)
	Separated	0	3(1%)	3(0.8%)
	Unmarried	4(4.1%)	3(1%)	7(1.8%)
Type of the family	Nuclear	80(81.6%)	244(80.8%)	324(81%)
	Joint	4(4.1%)	3(1%)	7(1.8%)
	Three generation	11(11.2%)	30(9.9%)	41(10.2%)
	Extended	3(3.1%)	25(8.3%)	28(7%)

Table1: Socio-demographic profile of the study population.

Work profile

The mean years of work experience of the study population was 21.38 years (±9.31years). Workers

reported working for an average of eight hours/day. Majority of them, 360 (90%) said that they were satisfied with their work and 120 (30%) reported being satisfied with their salary. When questioned about the

interpersonal relationship at the workplace, 256 (64%) said that they had a fair relationship with their colleagues. Nearly quarter of the interviewed workers, 113 (28.2%) attributed their health problems to their work. Majority, 379 (94.7%) workers had availed leaves for less than four days in the past year.

Associated factors

In the study population, an associated co-morbidity was

reported by 93 (23.2%) subjects. Nearly one third, 131 (32.75%) reported having some form of substance abuse. The most commonly abused substance was chewable forms of tobacco. Among the married workers, 86 (31.9%) reported substance abuse in their spouse and 58 (67.4%) were worried about this. Seventy workers (17.5%) reported a life event in the family in the past one year, marriage of children and/or death in the family being the commonest.

Table 2: Distribution of demographic and work place variables with GHQ positivity.

Variable		GHQ positive n (%)	GHQ negative n (%)	Total
Age (years)	20-30	03 (15.8)	16 (84.2)	19 (100)
	31-40	17 (12.9)	115 (87.1)	132 (100)
	41-50	20 (11.2)	159 (88.8)	179 (100)
	51-60	11 (15.7)	59 (84.3)	70 (100)
Gender	Male	16 (16.3)	82 (83.7)	98 (100)
	Female	35 (11.6)	267 (88.4)	302 (100)
Religion	Hindu	36 (11.2)	286 (88.8)	322 (100)
	Christian	15 (19.2)	63 (80.8)	78 (100)
Education	Illiterate	09 (8.4)	98 (91.6)	107 (100)
	<7 th Standard	13 (12.9)	88 (87.1)	101 (100)
	7 th -10 th Standard	09 (17.2)	71 (88.8)	80 (100)
	>10 th Standard	20 (17.1)	92 (82.9)	112 (100)
SES	Lower	2 (11.1)	16 (88.9)	18 (1000
	Middle	49 (13.3)	319 (86.7)	368 (100)
	Upper	0	14 (100)	14 (100)
Marital status	Currently married	47 (13.2)	308 (86.8)	355 (100)
	Currently unmarried	4 (8.9)	41 (91.1)	45 (100)
	Nuclear	38 (11.7)	286 (88.3)	324 (100)
Type of family	Joint	8 (22.9)	27 (77.1)	35 (100)
	Three generation	5 (12.2)	36 (87.8)	41 (100)
	Nil	36 (13.4)	233 (86.6)	269 (100)
	Tobacco	10 (11.9)	74 (88.1)	84 (1000
Substance abuse	Alcohol	05 (19.2)	21 (80.8)	26 (100)
	Tobacco and alcohol	0	21 (100)	21 (100)
Spouse substance	Worried	05 (8.6)	53 (91.4)	58 (100)
abuse	Not worried	07 (25)	21 (75)	28 (100)
Co-morbidity	Presence	15 (16.1)	78 (83.9)	93 (100)
	Absence	36 (11.7)	271 (88.3)	307 (1000
Life event in the	Yes	10 (14.3)	60 (85.7)	70 (100)
past 1 year	No	41 (12.4)	289 (87.6)	330 (100)
Designation	Pluckers	36 (11.8)	270 (88.2)	306 (100)
	Sprayers, Pruners	10 (22.7)	34 (77.3)	44 (100)
	Others	5 (10)	45 (90)	50 (100)
	< 10	6 (10.3)	52 (89.7)	58 (100)
Work experience (years)	11-20	12 (9.8)	110 (90.2)	122 (100)
	21-30	18 (12.4)	127 (87.6)	145 (100)
	> 30	15 (20)	60 (80)	75 (100)
Work satisfaction	Good	44 (12.2)	316 (87.8)	360 (100)
	Poor	79 (17.5)	33 (82.5)	40 (100)
Salary satisfaction	Good	10 (8.3)	110 (91.7)	120 (100)
	Poor	41 (14.6)	239 (85.4)	280 (100)
Interpersonal	Excellent	14 (10.1)	124 (89.9)	138 (100)
relationship at workplace	Fair	35 (13.7)	221 (86.3)	256 (100)
	Poor	2 (33.3)	4 (66.7)	6 (100)

Table 3: Association between GHQ positivity and leaves availed in the previous year.

		GHQ		Total	Total
		positive	negative	Total	
Leaves availed in	≤4 days	44 (86.27)	7 (13.72)	51 (100)	
previous year	> 5 days	335 (95.98)	14 (4.02)	349 (100)	
Total		379 (94.75)	21(5.25)	400 (100)	

Chi square value: 8.44, P value: 0.004

Probable mental illness as found by using GHQ 28

In this study, 51 (12.8%) of the study subjects screened positive for mental illness using the GHQ 28 and 4 (1%), 4 (1%), 1 (0.2%) and 6 (1.5%) screened positive for the domains of somatic symptoms, anxiety/insomnia, social dysfunction and severe depression respectively.

Probable mental illness with different variables of the study

Association of GHQ positivity with different demographic and work place variables of the study is depicted in Table 2 and Table 3. Accordingly there is no much difference in the proportions of GHQ positivity with different age groups of the study, however it was slightly higher in younger and older age groups. Proportion of GHQ positivity is found to be slightly high in male workers compared to female workers. The proportions were comparatively higher among Christians compared to Hindus. While the association of probable mental illness with the education status, it was found that the proportions were relatively lesser in illiterates. None of the workers in the higher socio economic scale showed GHQ positivity, whereas it was slightly higher in middle class group. The proportion of probable mental illness was higher among currently married workers compared to who are currently single. It was found to be highest among people belonging to joint families. The proportions of GHQ positivity was higher among workers who consume alcohol alone, ironically it was reported that none of the workers who smoke and drink showed GHQ positivity. In this study, probable mental illness was found to be higher in workers who reported that they were not worried about their spousal substance abuse. GHQ positivity was higher among workers with coand having a life event morbidity birth/marriage/death of a family member in the previous year.

GHQ positivity was higher among workers involved in spraying and pruning as compared to Pluckers. It was also higher in workers with more work experience. The proportion of probable mental illness was higher in workers reporting poor work satisfaction, poor salary satisfaction and poor interpersonal relationship at work place. However none of these above said associations were found to be statistically significant. It was found that the proportion of GHQ positivity was relatively higher among workers who availed more leaves (> 5

days) in the previous year and the association was found to be statistically significant, as depicted in Table 3.

DISCUSSION

The prevalence of probable mental illness among tea plantation workers in this study was 12.8% using GHQ28. This is probably the first study to document the prevalence of probable mental health illness among tea plantation workers.

In a study done on industrial workers in India using GHQ12 the prevalence was found to be 51.7%. A community based study in Western Nigeria using GHQ12 found the same to be 18.9%. 11

A study done on a production organization employees in India using GHQ28 showed that there was a positive correlation between perceived occupational health and mental health status.⁹

In a study done in Pakistan using GHQ28, high levels of mental health disorders were present among the female workers and in the workers in the age group of 20 to 25 years. In a study done by Dutta on industrial workers, educational level, perceived stress, job satisfaction and stressful life events were identified as the independent determinants of psychiatric morbidity. However in this study, there was no statistically significant association found between the prevalence of probable mental illness and gender, age, education, occupation, socio-economic status, religion, marital status, type of family, substance abuse, spouse's substance abuse, comorbidity, stressful life events and job or salary satisfaction.

Workers who had screened positive for GHQ were found to have availed significantly more days of leave in the previous year, as compared to those who were GHQ negative. This reiterates the finding from earlier studies that mental illness is associated with decreased productivity among workers. 8,9 The six subjects detected with severe depression were followed up with the psychiatrist and were initiated on treatment.

CONCLUSION

The prevalence of probable mental health illness was found to be 12.8% using the GHQ28 screening tool among tea plantation workers, which is in comparison with prevalence among the general population. Workers

who had screened positive for suspected mental illness were found to have availed significantly more days of leave in the previous year. There is a need to screen workers in different settings for probable mental illnesses and evaluate further for associated factors for the same, as mental health is known to affect one's work efficiency.

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Ethical approval: The study was approved by the

Institutional Ethics Committee

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