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Original Research Article

Psychological distress, hopelessness and health service needs of late adolescents in rural Pondicherry, South India

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ABSTRACT

Background: Late adolescence (15-19 years) is a period which entails stress and specific physical and mental health needs. The Objectives were to study the prevalence of psychological distress, hopelessness, and health service needs of late adolescence in rural Puducherry.
Methods: A community based cross-sectional study was conducted in a service practice area of Jawaharlal Institute Rural Health centre (JIRHC) during July-August 2015. A pretested questionnaire was used to obtain demographic characteristics, health service needs and substance abuse among adolescents and their family members. Self-administered GHQ-12 questionnaire and becks hopelessness scale was used to assess the psychological distress and hopelessness respectively.
Results: Of the total 324 participants, 170 (53%) were females. The mean (SD) age was 15.9 (1.3) years. One fifth of the adolescents (20.9%) had psychological distress. Moderate level of hopelessness was seen in 32 (10%) adolescents. Substance abuse was found in 125 (39%) of the family members of adolescents and 55 (44%) had problems at home related to the substance abuse. On multivariate analysis, problem in household due to substance abuse was the single independent risk factor [aOR 2.6; 95%CI (1.1-6.0)] for psychological distress. Majority of females expressed their need for an exclusive adolescent clinic (58%), sexual & reproductive awareness (67.5%) and information about contraception (67.4%). The need for mental health services was higher in females compared to males (55.6% vs. 44.3%), which was statistically significant ($p<0.05$).
Conclusions: In rural area of Puducherry, one out of five adolescents had psychological distress and ten percentages of adolescents had moderate level of hopelessness requiring mental health and counselling services.

Keywords: Psychological distress, Hopelessness, Mental health, Health service needs, Late adolescents

INTRODUCTION

WHO defines adolescence as the period of life between 10-19 years.[1] Adolescents face rapidly changing challenges in their social and physical environments. Their cultural beliefs, family structure and support, peer relationships and educational opportunities influence their behaviour and adjustment. Late adolescence encompasses the later part of teenage years between 15-19 years.[2] This is the period where major physical and mental changes usually occur and also it is a time of opportunity, idealism and promise.[3] Globalisation is leading to rapid changes in these sociocultural systems in low and middle-income countries, and changing values and expectations of adolescents may influence the risk of mental disorders. Although adolescent health has gained increasing priority in India's National health policies, the main focus has been on reproductive and sexual health.

Despite reports showing that suicide is a leading cause of death in young people in India, mental health has been a low priority in health policy for adolescents.[4] The few published studies from India have reported prevalence of mental disorders among children and adolescents from 2.6% to 35.6%.[5] Another study done in Ranchi reported that 59.1% of late adolescents have psychological discomfort (GHQ≥3).[6] Reason for the wide variation in rates could be the due to difference in age group, study setting, study designs, variable methodology and socio-cultural factors. Hopelessness is a system of negative expectations concerning oneself and one's future life and it is an important concern in health and social care. Hopelessness is a strong predictor of suicide.[7] Puducherry has the highest suicide rate of 45.5 per 1,00,000 population in 2010 which was four times higher than the national average suicide rate (11.4 per 100000 population). Around 35.4% suicide victims were in the age group of 15-29 years.[8] Hence this study aims to study the prevalence of psychological distress, hopelessness and health service needs of the adolescents in the age group of 15-19 years in rural area of Puducherry.

METHODS

Study setting

A community based cross sectional study was conducted in two villages (Ramanathapuram and Thondamanatham) of rural primary health centre of Jawaharlal Nehru Institute of Postgraduate Medical Education and Research (JIPMER), during July-August 2015. The rural health centre is under control of Department of Preventive and Social Medicine (PSM), JIPMER and it is located in Ramanathapuram, a village situated around 15 kilometres from Puducherry town, south India. The rural health centre caters to around 10000 populations, who are spread over four villages namely- Ramanathapuram, Thondamanatham, Thuthipet and Pillayarkuppam. Most of the people in these villages belong to low socio-economic status and agriculture is the predominant occupation. In rural health centre, all healthcare services are provided by six to eight MBBS internship trainees under the supervision of Medical Officer and a post graduate from Department of PSM. Along with outpatient services, other special clinics like Non communicable disease (NCD) clinic, antenatal clinic, well baby clinics and adolescent clinics are conducted on Wednesday, Thursday, Friday and Saturday respectively.

Study population

Late adolescents in the age group of 15-19 years who were residing in the above selected villages (Ramanathapuram and Thondamanatham).

Inclusion criteria

Late adolescents of both sexes, aged between 15 and 19 years of age, who were not seriously ill and were residing either in the Ramanathapuram or Thondamanatham village, and whose parents given informed written consent

Exclusion criteria

Late adolescents (15-19 years of age) who had any psychiatric condition requiring medication at present or any previous history of diagnosed mental illness.

Sample size

Assuming that the psychological distress among late adolescents as 59%[6], 95% CI, and 5% absolute precision, the sample size required was 387. The sample size was calculated by using the formula given below.[9]

$$N = Z^2_{1-\alpha/2}\, p\,(1-p) / d^2$$

There were overall around 1478 adolescents in all four areas (16% of the total population) as per the Rural Health Training Centre enumeration data 2014. Adolescent health clinic in rural health centre provides weekly iron and folic acid tablets and sanitary napkins to adolescent girls in the service area. To achieve the sample size of 387, two villages (Ramanathapuram and Thondamanatham) were chosen as simple random sampling technique

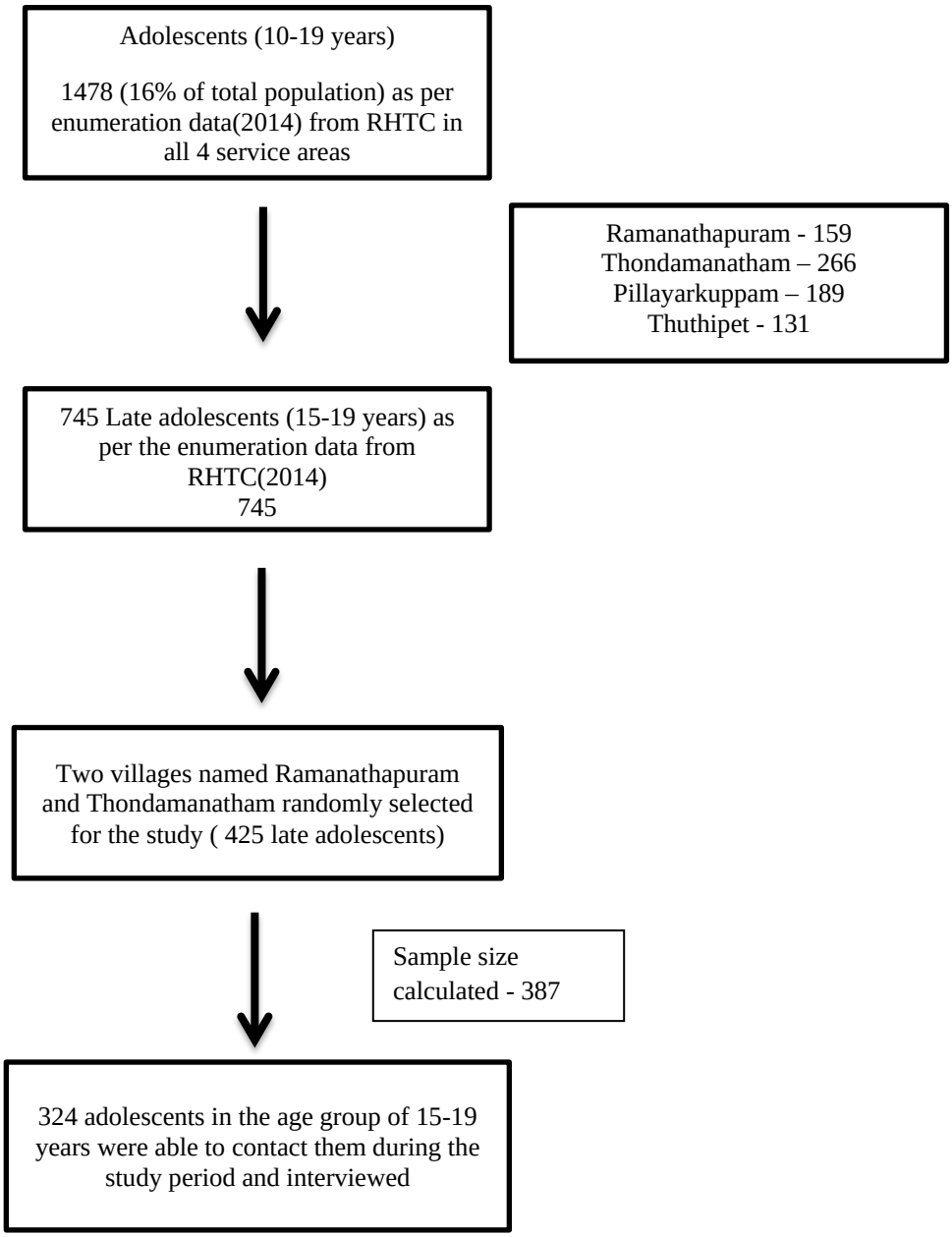
Study tool

The pretested structured questionnaire was designed to collect information on socio-demographic details, health care needs, substance abuse among adolescents and their family members and problems related to substance abuse. Psychological distress was assessed using Tamil translated self-administered GHQ-12 Questionnaire. This questionnaire was validated in Tamil version and the cut off score 2/3 had a sensitivity of 83.7% and a specificity of 79.0%.[10] It has reasonable test-retest reliability as well as both content and construct validity. It is used to identify the severity of psychological distress experienced by an individual within the past few weeks. Each item on the scale has four responses from “better than usual” to “much less than usual.” The scores were summed up by adding all the items on the scale ranging from 0 to 12. GHQ score of >3 is defined as psychological distress.[6] Tamil translated 20 item Becks Hopelessness Scale (0-3 minimal, 4-8 mild, 9-14 moderate and ≥15 severe hopelessness) was used to assess the hopelessness and its reliability was good.

Study procedure

Data collection was done by house to house visit in two areas namely Ramanathapuram and Thondamanatham. All adolescents in the age group of 15-19 years were included in the study. Informed consent was obtained for all the participants above 18 years. For the participants below 18 years, assent was obtained in addition to the consent from their parents. Adolescents from every

household were interviewed using a structured, pre-tested questionnaire. Tamil translated self-administered standard questionnaires (GHQ-12 and Beck's hopelessness scale) were used to assess the psychological distress and hopelessness.



Statistical analysis

Data were entered in MS Excel and analysed using IBM SPSS 17.0. Psychological distress and hopelessness, substance abuse and health service needs were expressed in proportions. Chi-square test was used to compare the difference between two proportions. Univariate and multivariate analysis was done to find out the factors associated with psychological distress and Hopelessness.

RESULTS

Totally 324 adolescents were interviewed in two villages. The mean age of the study participants is 15.9±1.3. Among them 170 (53%) were females. Majority of adolescents 244 (75.3%) were in the age group of 15-17 years. Only 16 (5%) had dropped out from the school for which financial crisis was the major reason. Majority 113(35%) belonged to class IV socio-economic status. About 20.6% of adolescents had psychological distress & nearly 10% of the adolescents had hopelessness (Table 1).

Substance abuse in the family of study participants

Among families of the adolescents, around 125(39%) had substance abuse, majority (91%) due to alcohol use by father of the adolescent. Nearly (55) 44% of families had

problems like frequent quarrels, mental and financial instability within the family due to substance abuse by family members.

Table 1: Socio-demographic details, psychological distress and hopelessness among late adolescents in rural Pondicherry, South India (n=324).

Socio-demographic details	Total N (%)	Adolescents withPsychological distress (GHQ‡score >3) (n=67) 20.6%	Adolescents having Hopelessness (BHS‖ score >9) (n=32) 10%
Age group			
15-17 years	244 (75.3)	58 (23.7)	26 (10.6)
18-19 years	80 (24.7)	9 (11.2)	6 (7.5)
		p =0.01	p=0.46
Gender			
Male	154 (47)	36 (23.3)	19 (12.3)
Female	170 (53)	31 (18.2)	13 (7.6)
		p=0.25	p=0.10
Family type			
Nuclear	304 (93.8)	61 (20)	30 (9.8)
Joint	20 (6.2)	7 (35)	2 (10)
		p=0.28	p=1.0
Educational status			
High school & H.sc	244 (79.2)	-	-
Graduate courses	46 (14.9)	-	-
Professional courses	18 (5.8)	64 (20.7)†	28 (9)†
Drop out	16 (5)	3 (18.7)	4 (25)
		p=0.84	p=0.05
Socio-economic status*			
Class I	27 (8.3)	3 (11)	1 (3.7)
Class II	51 (15.7)	12 (23.5)	6 (11.7)
Class III	98 (30.2)	24 (24.4)	10 (9)
Class IV	113 (35.0)	22 (19.4)	15 (13.2)
Class V	35 (10.8)	6 (17)	0 (0)
		p=0.5	p=0.1

*Modified Prasad classification May 2014; † Among all studying adolescents; ‖ Becks Hopelessness scale; ‡ General Health Questionnaire.

Table 2: Health service needs of late adolescents (15-19) in rural Puducherry (N=324).

Health service needs	Gender (%)		Total (%)	Chi-square test
	M (n=154)	F(n=170)	324 (100)	
Preference for exclusive adolescent health clinic	101 (65.5)	140 (82.3)	241 (74.3)	χ^2=11.9, df=1, p=0.001
Sexual & reproductive awareness and counselling	48 (31)	101 (59.4)	149 (46)	χ^2=25.9, df=1, p=0.00
Information about Contraception	41 (26.6)	85 (50)	126 (39)	χ^2=18.5, df=1, p=0.00
Mental health services in adolescent clinic	103 (66.8)	130 (76.4)	233 (72.0)	χ^2=3.67, df=1, p=0.05

Substance abuse among adolescents

Of 324, nine (2.7%) had substance abuse, among them, 7 (77.78%) belonged to 18-19 years age group and 2 were younger. Five of them (55.5%) were drop outs from school. Of the adolescents who had 9 substances abuse, 7 (2.1%) were alcohol drinkers and 2 (0.6%) were smokers.

Table 2 describes the health needs as perceived by the late adolescents in rural Puducherry. Among health service needs, 74.3% adolescents preferred exclusive adolescent health clinic followed by mental health services (72%), sexual and reproductive awareness and counselling (46%) and information about contraception (39%). Females had more health service needs when compared to males.The gender differences between all

health service needs were statistically significant (p=0.05) except in need for mental health services.

Table 3 shows the bivariate and multivariate analysis of the factors associated with psychological distress (GHQ>3) and hopelessness (BHS>9). On bivariate analysis, age group of 15-17 years compared to 18-19 years [OR 2.5; 95% CI (1.1-5.3)], presence of substance abuse in family [OR 2.2; 95% CI (1.3-3.9)], problem in household due to substance abuse [OR 3.5; 95%CI (1.9-6.6)] and school going compared to college going [OR 2.5; 95% CI (1.1-5.9)], were significant risk factors for psychological distress. On multivariate analysis, problem in household due to substance abuse was single independent risk factor for psychological distress [aOR 2.6; 95% CI (1.1-6.0)] on multivariate analysis. None of the factors significantly associated with hopelessness.

Table 3: Factors associated with psychological distress (GHQ>3) and moderate hopelessness among late adolescents in rural Pondicherry, South India.

Factors		Unadjusted OR		Adjusted OR	
		GHQ >3	BHS>9	GHQ>3	BHS>9
Age group	15-17	2.5(1.1-5.3)	2.6 (0.7-9.0)	2.3(0.4- 11.4)	2.3(0.4- 11.4)
	18-19*				
Gender	Male	1.3 (0.7-2.2)	1.5(0.7-3.3)	----	----
	Female*				
Substance abuse in the family	Yes	2.2 (1.3-3.9)	1.2(0.5– 2.8)	1.3 (0.6-2.7)	1.3 (0.6-2.7)
	No*				
Problem in HH due to substance abuse	Yes	3.5 (1.9-6.6)	1.4 (0.5- 3.7)	2.6(1.1-6.0)	1.2 (0.3 – 4.2)
	No*				
Family type	Nuclear	1.6 (0.6-4.5)	----	----	------
	Joint*				
Education	School going	2.5 (1.1-5.9)	3.6(0.8-15.7)	-----	3.6(0.3-36.0)
	College going*				

*Reference HH- HouseHold

DISCUSSION

Of 324 adolescents in the age group of 15-19 years, nearly half of them had acute health problems. Females need more health service compared to males. Four percent were dropped out from school which is less compared to the study from Goa (7.9%).[5] Psychological distress was measured using GHQ-12 was found to be 20.6%. It was found to be more among school going adolescents mainly due to exam stress and among those families with problem due to substance abuse. This finding is in contrast to the study done in Ranchi among the school students of 9th to 12th standard which showed the prevalence of psychological distress to be 59%.[6] Another study from Chandigarh showed that the prevalence of psychological morbidity among adolescents was 46%.[11] Both the above studies used the same GHQ score cut-off >3. The difference in prevalence of psychological distress may be due to different study settings and age group. A study from Goa reported that the prevalence of common mental disorders (CMD) among the individuals in the age group of 16-24 years was 7.87%.[12] Another study from Pune reported that the prevalence of common mental disorders among 9thstandard school students was 15.2%.[13] These two studies showed less prevalence of psychological morbidity compared to the present study. This difference could be due to the difference in age group of study participants and because mental health status was assessed using different GHQ-12 cut-off of>5 and>14 respectively.

In the present study, prevalence of moderate level of hopelessness was found to be 10%. This finding is comparable to the study from Iran which reported the prevalence of hopelessness as 12.6%, butin contrast to the studies done in Meerut and Delhi which reported the prevalence of hopelessness among adolescents as 20.7%.[14-16]

Substance abuse with tobacco and alcohol found to be less in this study population. Substance abuse was reported by 2.7% of the adolescents in this study, which is less as compared to the study by Jain et al in Meerut where 19% of the adolescents reported substance abuse.[15] In the present study, 0.6% of adolescents used smoked tobacco which is less compared to the study from Tamil Nadu which reported the prevalence of tobacco smoking among adolescents aged between 13-15 years as 5.3%.[17] Another study from Karnataka reported that 7.2% of adolescents in the age group of 15-19 years were tobacco smokers.[18] A study from Noida reported that 8.8% of adolescents in the age group of 11-19 years were ever smokers.[19] A Delhi study reported that 12% of school students from 9th to 11th standards were tobacco smokers.[20] A study from eight North-eastern states of India among 13-15 years age group adolescents reported higher proportion (30%-72%) of tobacco smokers

compared to the present study.[21] The difference could be due to difference in study setting and age group of the adolescents included in the study.

Use of alcohol was also reported by comparatively less (2.1%) adolescents in this study. A study from Karnataka reported the prevalence of alcohol use among 15-19 years adolescents as 5.7%.[18] A study from West Bengal reported that prevalence of alcohol use among 13-15 years age group rural adolescents was 7.3%.[22] Another study from Kerala reported higher proportion (15%) of alcohol use among adolescents in the age group of 12-19 years.[23]

Majority of the female adolescents preferred exclusive adolescent health clinic (82%), mental health services (76%), counselling about sexual reproduction (60%) and contraceptive information (50%) compared to male counterpart. A study from Gujarat among adolescent girls in the age group of 15-19 years reported that 65% of them showed interested in gaining knowledge about contraception which was higher than the present study.[24] Another study from rural area of Gujarat reported that more than 75% of boys and girls in the age group of 13-18 years willing to receive reproductive information which was higher than the present study.[25] The same study reported that 33% of girls need contraceptive information which was less compared to the present study.

In the present study, problem due to substance abuse among family members is a independent risk factor for psychological distress [aOR 2.6; 95% CI (1.1-6.0)]. Similarly other studies from India showed that physical or verbal abuse by family members, parental fights were independent risk factors for psychological distress among adolescents.[5,13]

Strengths and limitations

Assessment of psychological morbidity and hopelessness among late adolescents was studied by using the standard questionnaires. This study focused on late adolescents (15-19 years) whom susceptible to depression and hopelessness. The present study failed to address the history of previous suicidal attempts and sexual & reproductive behaviour of the late adolescents. Substance abuse not studied in depth other than prevalence of tobacco use & alcoholism.

CONCLUSION

One out of five adolescents has psychological distress. Parental substance abuse is independently associated with psychological distress. The targeted interventions direct towards adolescents in the age group of 15-19 years & their family members with appropriate counselling. Mental health clinics in PHC to develop comprehensive module to tackle psychological distress.

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