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Research Article

Morbidity profile of adolescents reported to an urban health center in Kancheepuram district of Tamil Nadu, India

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ABSTRACT

Background: Adolescents are the group of children transforming to adults (aged 10 to 19 years). There are more than 1.2 billion adolescents worldwide and about 243 million live in India i.e. about 20% of Indian population. They are apparently healthy people but they do also have health related issues. Objective of this study was to determine the morbidity pattern prevalent among adolescents who attended an urban health training centre in Kancheepuram district.
Methods: A cross sectional study was carried among 918 adolescents aged between 10 to 19 years, who visited the urban health training centre during the study period using convenient sampling technique. Data collection was done by using a structured questionnaire which consisted of questions related to their demographic characteristics and the reason for coming to the centre seeking medical help. Data analysis was done using SPSS version 16 and the results expressed in percentages.
Results: Among the study population of 918, 57% were males and 43% were females. About 81.8% were studying while 17.7% were working. About 78.2% adolescents (84.3% of males and 70.1% females), were suffering from acute conditions while 21.8% (15.7 % males and 29.9% females) were suffering from chronic conditions. Among the acute conditions, upper respiratory tract infection constituted 22.5% of complaints followed by musculo-skeletal, gastrointestinal and ENT problems. The most common chronic condition reported was anemia (6.2%) which was followed by acne on their face and minor psychiatric illnesses like anxiety and depression.
Conclusions: Improvement in the quality of diagnosis and treatment for both acute and chronic illnesses among adolescents are required to be implemented at all levels.

Keywords: Acute illnesses, Chronic illnesses, Teenage, Primary health care

INTRODUCTION

Globally there are more than 1.2 billion adolescents living in different countries and about 243 million adolescents live in India, which constitute about 20% of the Indian population.[1,2] Adolescents are the group of children aged between 10 to 19 years and they are in the phase of transformation into adults. They are apparently healthy people but they also have different kind of problems. Adolescent problems can be broadly grouped in to Physical, Psychological and Social problems. The overall morbidity and mortality among adolescents is increasing day by day due to varied reasons. World Health Organization report says that about 1.3 million adolescents died from preventable or treatable causes. Sexual and reproductive health problems, nutritional

problems and mental health problems are the major health problems of adolescents. As per NFHS 3 data, about 56% of girls and 30 % of boys in this group are anemic. About 10.5% of the girls and 10.8% of the boys reported having Sexually Transmitted Infections or symptoms of STI and 0.07 percent of the girls and 0.01 percent of the boys in this age group were found to be HIV positive.[3] A study from Goa, among 16 to 24 years old, shows 3.9% of youths reported suicidal behaviors with females four times more prone than males.[4] NFHS-3 data shows, in the age group 15-19, about 11% of adolescent boys and 1% of adolescent girls had consumed alcohol, in that 3% consume it daily and 18% consume it once a week. About 29% boys and 4% girls use some kind of tobacco and 12% of the boys smoke cigarettes or bidis. The average age at tobacco use initiation was earliest (12.3 years).[4]

Thus it can be seen that the adolescents of today are faced with varied forms of physical, psychological and social problems. With this background we planned to conduct this study to determine the morbidity profile of the adolescent patients attending the urban health training centre in Kancheepuram district.

METHODS

Study design: This is a community based cross sectional study conducted among adolescents (aged 10 to 19 years) who attended the urban health training centre, Kancheepuram District of Tamil Nadu.

Study area and population: The study area and population comes under the field practice area of our Medical College. The study population identified was the adolescents aged between 10 to 19 years, residing in the study area at the time of the study period. The population of the area is approximately 34560.

Sampling method and sample size: The study sample was selected from those adolescents who attended the urban health training centre, Kancheepuram district, for a period of three month (15 January 2015 to 15 April 2015). All adolescent patients aged 10 to 19 years attending the outpatient department of the urban health centre, who consented to participate in the study, were included. A total of 918 adolescents patients were interviewed by using the convenient sampling method during the study period.

Tool for data collection: A semi-structured questionnaire was prepared for the data collection. The questions were related to the background characteristics and the purpose of their visit and the final diagnosis made by the medical officer. All the relevant data was recorded by the investigators.

Pilot study: Pre-testing was carried out on thirty adolescents for standardizing the questionnaire. Based on the observations made during the pilot testing, necessary changes were made in the questionnaire. The results of the pilot test were not included in the final analysis.

Data analysis: Data collected was entered and analyzed using SPSS version 16. Results were expressed by using descriptive statistics. Ethical committee approval and informed consent: The study was approved by institutional ethics committee. Informed consent was prepared in the local language (Tamil) and consent was obtained from the study participants prior to administering the questionnaire.

RESULTS

Socio-demographic data: The socio-demographic characteristics of the study population are presented in Table 1 and Figure 1. Among the study population of 918 adolescents aged between 10 to 19 years old, 523 (57%) were males and 395 (43%) were females. More than two third of the study participants were aged 15 to19 years of age [71.4%]. About 81.8% (boys-80.5% and girls-83.5%) were studying while 17.7% were working at different levels to earn a livelihood. Among the students, nearly 34% were studying in colleges or poly techniques. Among those employed, 67.9% were working as unskilled workers.

Table 1: Demographic profile of the study group of adolescents.

Demographic variables	Male (N=523)		Female (N=395)		Both sexes (N=918)	
	N	%	N	%	N	%
Age						
10-14	128	24.5	135	34.2	263	28.6
15-19	395	75.5	260	65.8	655	71.4
Education						
Illiterate	1	0.2	2	0.5	3	0.3
Primary	6	1.2	4	1	10	1.0
Middle school	98	18.7	110	27.9	208	22.7
High school	79	15.1	56	14.1	135	14.8
HSC	144	27.5	106	26.9	250	27.2
Diploma/collage	195	37.3	117	29.6	312	34.0
Career options						
Student	421	80.5	330	83.5	751	81.8
Working:	98	18.7	64	16.2	162	17.7
a. Skilled	12	12.3	0	0	12	7.4
b. Semiskilled	27	27.5	13	20.3	40	24.7
c. Unskilled	59	60.2	51	79.9	110	67.9
Not doing anything	4	0.8	1	0.3	5	0.5
Habits						
Tobacco use: 10-14 years 15-19 years	 14 167	 10.9 42.3	 0 72	 0 27.7	 14 239	 1.5 26
Alcohol use: 10-14 years 15-19 years	6 92	4.6 23.3	0 03	0 1.2	6 95	2.3 14.5

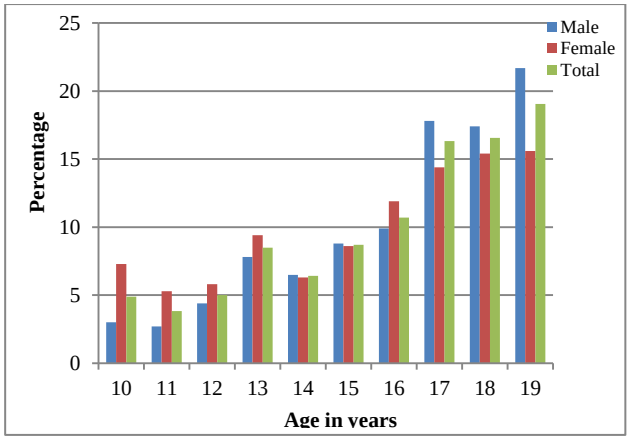

Figure 1: Age-wise distribution of adolescent study group.

Morbidity among adolescents: Table 2 shows the type of illnesses and conditions that made adolescents to visit a Health Centre. About 78.2% adolescents were suffering from acute conditions while 21.8% were suffering from chronic conditions. About 84.3% of males and 70.1% females had some form of acute conditions while 15.7 % males and 29.9% females had chronic conditions**.** Among the acute conditions, upper respiratory tract infection constituted 22.5% of adolescent complaints followed by musculo-skeletal, gastrointestinal and ENT problems.

The most common chronic condition reported was anemia (6.1%) which was followed by presence of acne / pimples on their face (6%) and minor psychiatric illnesses like anxiety and depression (3.9%). About 6.6% of the adolescents had some form of genitourinary symptoms like altered appearance of the urine, itchy genitals and burning micturition. About 6.2 % of subjects reported to had skin problem like scabies, pityriasis versicolor etc. No cases of sexually transmitted diseases were recorded. About 5.2% of the subjects had external injuries, majority of them were boys and most of the external injuries were lacerated wounds due to Road Traffic Accidents and unintentional injuries.

Table 2: Morbidity pattern among adolescents attending the urban health training centre.

Conditions	Male		Female		Both sexes	
	Frequency (N=523)	Percentage (N=57)	Frequency (N=395)	Percentage (N=43)	Frequency (N=918)	Percentage (N=100)
Acute conditions	**441**	**84.3**	**277**	**70.1**	**718**	**78.2**
Upper respiratory tract infection*	143	27.3	64	16.2	207	22.5
Musculoskeletal system	48	9.2	25	6.3	73	8
Gastrointestinal system**	52	10	21	5.3	73	8
Ear, nose and throat problems	44	8.4	22	5.6	66	7.2
Genitourinary system	32	6.1	29	7.4	61	6.6
Skin conditions	36	6.9	21	5.3	57	6.2
Gynecology	-	-	47	11.9	47	5.2
External Injury	38	7.3	10	2.5	48	5.2
Dental problems	21	4	18	4.5	39	4.2
Eye problems	18	3.4	15	3.7	33	3.6
Surgical conditions	09	1.7	05	1.3	14	1.5
Chronic conditions	**82**	**15.7**	**118**	**29.9**	**200**	**21.8**
Anemia	26	5	30	7.6	56	6.1
Acne /Pimples	15	2.9	40	10.1	55	6
Minor Psychiatric illness	11	2.1	25	6.4	36	3.9
Dermatitis	13	2.5	08	2	21	2.3
Bronchial asthma	11	2.1	07	1.8	18	2
Seizure disorders	06	1.1	08	2	14	1.5
Total	523	100	395	100	918	100

*Include pharyngitis, common cold, tonsillitis, laryngitis; **Acute gastroenteritis, acute gastritis

Among the girls' upper respiratory infections [16.2%], gynecological problems like irregular menstruation, white discharge etc. (11.9%), presence of acne / pimples on the face (10.1%) and anemia [7.6%] were the most common morbidity. Among the boys apart from upper respiratory tract infection [27.3%], disease related to gastrointestinal

system like acute gastroenteritis and acute gastritis (10%), musculoskeletal disorders like myalgia, joint paints (9.2%) and conditions of ear nose and throat [8.4%] were the major problems.

DISCUSSION

This study conducted among 918 adolescents (age 10 to 19 years) attended urban field practice area of our medical college, for a period of three month (15 January 2015 to 15 April 2015) gives interesting findings. Similar finding was reported by Essai I, who reports that older adolescents' visited primary care centre more often.[5] In this study, most of the adolescents who attended the primary care center were due to upper respiratory tract infections (22.5%) which includes pharangitis, common cold, tonsillitis, laryngitis, followed by musculo-skeletal problems (8%), gastrointestinal disorders (8%) and Ear, Nose and Throat (ENT) problems (7.2%).

Among girls, apart from upper respiratory tract infection, gynecological problems (11.9%), genitourinary tract infection (7.4%) and anemia (7.6%) are the most common cause of morbidity. In Andhra Pradesh, a study done by Susmitha KM et al reported that pallor (41%), dysmenorrhoea (43.6%), dental caries were the leading causes of morbidity in adolescents.[6] The difference in the morbidity pattern could be due to regional variation. External injuries are common among males, a study from Delhi reported that about 77.5% of adolescents are at risky behaviors, leading to road-traffic accidents and deaths.[7]

Road traffic accidents has been emerged as the most common cause of morbidity among adolescents which is preventable by simple measures.[8] Gynecological problems and genitourinary tract infection are common among females, gastrointestinal tract infection is in the top five causes of morbidity among males (Figure 2), this shows the lack of adequate knowledge regarding personal hygiene among adolescents. They should be taught about the importance of personal hygiene at school and community level though various modes of health education.

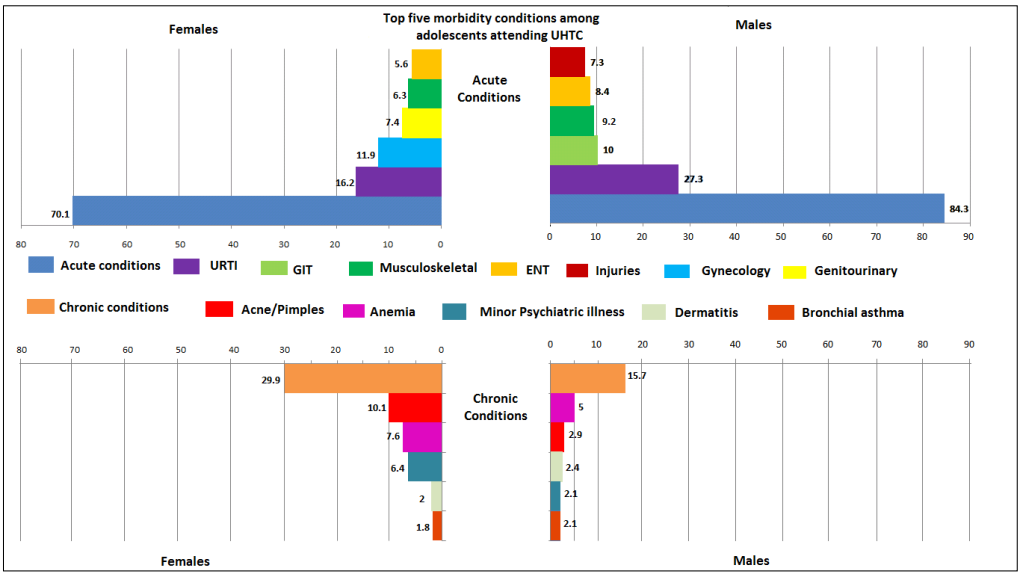

Figure 2: Top five causes of morbidity due to acute and chronic conditions among the adolescents.

No case of sexual transmitted diseases were reported in our study, similar finding was reported by Essai I.[5] About 10.1% of adolescent girls reported to have Acne on their face which can lead to bodily dissatisfaction, a major risk factor for depression.[9-12] About 3.9% of adolescents are reported to have minor psychiatric illnesses, most commonly depression, which is similar in occurrence compared to studies done in various parts of India.[13,14]

CONCLUSIONS

Adolescence is a phase of transmission from children to adults. So this phase has to be healthy and disease free, both physically and mentally, to have a bright future. This study reveals that majority of the adolescents were suffering from acute illnesses and another sizeable group were suffering from chronic illnesses. Among the acute conditions, upper respiratory tract infection followed by musculo-skeletal, gynecological, gastrointestinal and ENT problems while the most common chronic condition reported was anemia followed by acne and minor psychiatric illnesses like anxiety and depression.

Improvement in the quality of diagnosis and treatment for both acute and chronic illnesses among adolescents are required to be implemented in the primary health care

level. Facilities for specialized care for the adolescent patients on specified days in a week through setting up specialty clinics and the services should be provided with experts in the respective fields. Preserving mental health at this age can be an effective tool against adoption of unhealthy life style and risky behaviors later in life. Adequate health education and awareness creation about healthy adolescent life style should be imparted at all levels.

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Ethical approval: The study was approved by the institutional ethics committee

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