Original Research Article

Psychosocial status and quality of life of adolescent girls in Karnataka, India

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ABSTRACT

Background: This study was conducted with the objective to assess the psychosocial status and quality of life (QOL) of adolescent girls in Karnataka, India.

Methods: This was a cross sectional community based study which was conducted on 400 adolescent girls each in rural (Bellary district) and urban (Bangalore district) areas of Karnataka, India. WHO's 'HEEADSSS' questionnaire and 'WHOQOL-BREF' tool have been used to assess psychosocial status and quality of life of adolescent girls, respectively.

Results: It was observed that nearly 5% girls were at severe and very severe risk of developing psychosocial abnormalities in both rural and urban study area. The mean QOL score was highest for social relations (7102±21.6) and was minimum for physical domain (49.59±12.63).

Conclusions: This calls for urgent community based interventions directed to adolescents and their families having higher vulnerability for psychosocial abnormalities and poor quality of life.

Keywords: Adolescent, HEEADSSS, Psychosocial, QOL, WHOQOL-BREF

INTRODUCTION

Adolescence refers to the period of transition from childhood to adulthood, thus a critical period characterised by rapid growth and development. During this transition to adulthood, little or no knowledge of the body's impending physical and physiological changes and mental and psychological unpreparedness to cope with these changes, can promote psychosocial stress. This is particularly among adolescent girls especially in rural India, who also face gender discrimination considering deep rooted culture of patriarchy and hierarchy which trap and modulate their growing socialization. In Indian culture setup adolescent girls by and large emulates cultural and family values prescribed by the religion, caste and ethnic group of their identity, and their personal, vocational and even reproductive choices are based on conservative traditional values as a norm with a few exceptions. Further, the adolescent population, especially girl has important bearing on the expected demographic, social and psychological makeup and profile of the country.

In order to get a clear picture of adolescents' lives, it is vital to know where they live and what their status is within their household: whether they are being supported and by whom, whether they are rendering services, and so forth. Besides that, it is also important to assess their perception about life, which is usually measured by "quality of life" parameters. Quality of life is a broad concept which covers the individual's physical and mental state, level of independence, social relationships,

personal beliefs and their relationship to salient features in the environment. World Health Organization (WHO) defined quality of life as "an individual's perception of life in the context of culture and value system in which he or she lives and in relation to his or her goals, expectations, standards and concerns".[1]

Giving due consideration to the points mentioned above, WHO suggested "HEEADSSS" approach for looking in to the head of the adolescents and developed a "WHOQOL-BREF" tool to assess the quality of life. With this background this study entitled "Psychosocial status and Quality of life of adolescent girls in Karnataka" was planned with the following objectives.

Objectives

The prime objective of this study was to assess the psychosocial status and quality of life of rural and urban adolescent girls in Karnataka, India. Besides that, finding out the difference in psychosocial status and quality of life between rural and urban counterparts and pinpointing the association between psychosocial status and quality of life were other objectives.

METHODS

Area, duration and design of the study

This was a cross sectional community based study which was conducted in rural (Bellary district) and urban (Bangalore district) areas of Karnataka, India. The study was conducted for a period of one year, from April 2015 to March 2016.

Sample size

One of the main objectives of the study is to assess the psychosocial status of adolescent girls. But as far as the psychosocial status of adolescents is concerned, after extensive literature search it was found that, there are not much community based studies conducted on this issue. The study by Gupta MK et al, has developed a comprehensive scoring system for "HEEADSSS" approach and calculated the prevalence for risk of developing psychosocial abnormalities in adolescent girls in Varanasi, India.[2] Budimelli S and Chebrolu K have utilized this new scoring system and assessed the psychosocial risk profile of the adolescent girls in Guntur, Andhra Pradesh, India.[3] Both the studies have shown 45% to 55% prevalence of moderate and severe risk of developing psychosocial abnormalities in adolescent girls. Author was unable to find any study on quality of life of adolescent girls in Indian setup using "WHOQOL-BREF" tool. Thus, by considering the middle prevalence (50%) from that reviewed studies, the sample size for this study was calculated using the formula: $n=z^2pq/L^2$, where z=1.96, n=Sample size, p=Assumed prevalence (50 % in this study), q=100-p and L=permissible level of error in the estimated prevalence,

taken as 10% (10% of 50=5). The required sample size thus calculated was 384, which was rounded up and fixed to 400 considering non-responses, incomplete responses and some missing data. Thus 400 adolescent girls were interviewed each from Bellary (rural) and Bangalore (urban) districts of Karnataka, India.

Sampling methodology for rural area

Multistage sampling has been used in selecting the desired number of samples. In the first stage, one taluk was selected from seven taluks of Bellary district by simple random sampling method, considering similar socio demographic milieu. In the second stage, villages of the selected block were divided into 3 strata according to distance (inner 1/3rd, middle 1/3rd and outer 1/3rd) from taluk headquarter. Then from each stratum one village was selected by simple random sampling method. During third stage, total enumeration of adolescent girls was done in the selected villages to prepare a sampling frame. The required number of study subjects were calculated adopting 'probability proportion to size (PPS)' sampling technique. In order to get required study subjects (400), simple random sampling was applied (Table 1).
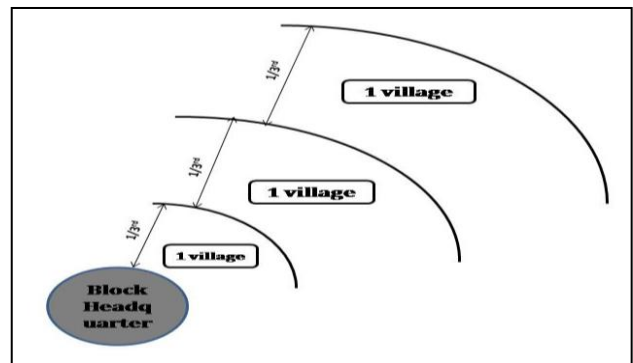
Figure 1: Village selection methodology.

Table 1: Selected villages and distribution of adolescent girls in Ballari District, Karnataka, India after PPS sampling.

Selected villages	Number of adolescent girls selected	Percent
CK Halli	82	20.4
HK Halli	114	28.4
Yeshwantanagar	205	51.1
Total	401	100.0

Sampling methodology for urban area

According to Bruhat Bengaluru Mahanagar Palike (BBMP) Bangalore city is divided into eight geographic zones (West, South, Rajarajeswari Nagar, Mahadevapura, East, Dasarahalli, Yelahanka and Bommanahalli). Out of this, three locations were randomly selected, namely-Dasarahalli, South and West. Thereafter one ward from each zone was selected randomly from the list of urban

wards of Bruhat Bengaluru Mahanagara Palike (BBMP). The selected wards were Hegganahalli (ward no.-71) from Dasarahalli, Jalahalli (ward no.-16) Rajarajeswari Nagar and Vijayanagar (ward no.-123) from South zone. The sample size was 400 (Table 2).

It has been found by the previous studies that prevalence of underweight among adolescents in urban India varies between 25 to 30%, while proportion of overweight individuals ranges between 15 to 20%. Therefore, considering a mean estimate of the prevalence (45%) of both forms of malnutrition among adolescents in urban areas, the sample size needed to be collected from urban section was estimated by using the above stated formula: n=z2pq/L2. The required sample size thus calculated was 380, which was rounded up and fixed to 400.

Table 2: Selected villages and distribution of adolescent girls in Bengaluru, Karnataka, India urban wards after PPS sampling.

Selected wards	Total population	Percent	Number of respondents
Jalahalli	37959	26.0	105
Hegganahalli	66314	46.0	183
Vijaya Nagar	40331	28.0	112
Total	144604	100.0	400

Tools and techniques

Following tools were used for the study:

WHO's modified "HEEADSSS" questionnaire

WHO's 'HEEADSSS' questionnaire was modified by taking consideration of Indian setup to make it simple, favorable and appropriate to adolescent girls. It includes eight parameters viz. home, education and employment, eating, activities, drugs, sexuality, suicide and depression and safety.

WHOQOL-BREF

The 'WHOQOL-BREF' tool was used to assess the health related quality of life. It took into consideration four domains of quality of life i.e. physical, psychological, environmental and social relationship. At the outset, the head of the family or any other responsible member was contacted and explained about the purpose of the study. Verbal and written consents were taken from participants and their parents/guardians before starting the survey. Privacy was maintained at the time of interview.

Ethical consideration

The study was approved by ethical review committee of IIHMR University, Jaipur, Rajasthan, India. Field investigators were also trained to provide counselling to

adolescent girls in all the areas of 'HEADSSS', so that, any unforeseen event like stress or trauma can be managed properly without delay.

Analysis of data

The data thus generated was analysed using Microsoft excel 2007 and SPSS v.16 software. The scoring system evolved by Gupta MK et al has been applied to calculate the total prevalence of risk of developing psychosocial abnormalities among adolescent girls.[2] Appropriate tables and graphs have been generated and inferences have drawn.

RESULTS

Socio demographic profile of adolescent girls

Table 3 depicts the socio demographic profile of the respondents.

Table 3: Socio demographic profile of adolescent girls.

Variable	Karnataka, India			
	Rural		Urban	
	N	%	N	%
Age groups				
10-14 (Early adolescence)	225	56.1	160	40.1
15-17 (Middle adolescence	89	22.2	117	29.3
18-19 (Late adolescence)	87	21.7	122	30.6
Mean age±SD	14.16±3.01		15.49±2.62	
Religion				
Hindu	322	80.3	380	95.2
Muslim	79	19.7	19	4.8
Caste category				
SC/ST	85	21.2	205	51.4
OBC	193	48.1	40	10.0
Others	123	30.7	154	38.6
Family type				
Nuclear	199	49.6	371	93.0
Joint	202	50.4	28	7.0
Total number of family members				
≤4	76	19.0	260	65.2
5-8	277	69.1	138	34.6
>8	48	12.0	1	0.3
Mean family size±SD	6.37±2.89		4.22±1.13	
Socio-economic class as per BG Prasad classification (2015)				
Upper	3	0.7	108	27.1
Upper middle	14	3.5	244	61.2
Middle	22	5.5	45	11.3
Lower middle	120	29.9	1	0.3
Lower	242	60.3	1	0.3
Total	401	100	399	100.0

More than half (56.1%) of the respondents in rural area were belonging to early adolescent age group, while

middle and late adolescent age groups were having almost equal distribution (~22%). This age distribution was 40.1%, 29.3% and 30.6%, respectively for urban study area. In both urban and rural study areas of Karnataka, India, majority (more than 80%) of the adolescent girls were Hindu by religion. With respect to the caste category, near about half (48.1%) of the adolescent girls from rural area were belonging to OBC caste category, while in urban area similar proportion of girls were belonging to SC/ST caste category.

Nuclear family pattern was found predominant in urban study area (93%); while in rural counterpart both nuclear and joint family types were having almost equal distribution. This can also be justified by the fact that, in urban area the mean family size was 4.22 (±1.13), while in rural area it was 6.37 (±2.89). As per BG Prasad socio economic classification (modified as per 2015 CPI), majority (~90%) of the rural adolescent girls were belonging to lower or lower middle socio-economic group, whereas, in urban area most of them (~88%) were from upper and upper middle socio- economic class (Table 3).

Table 4: personal attributes of adolescent girls.

Variable	Karnataka, India			
	Rural		Urban	
	N	%	N	%
Have brothers				
Yes	65	16.2	217	54.4
No	336	83.8	182	45.6
Have sisters				
Yes	110	27.4	178	44.6
No	291	72.6	221	55.4
Order of birth				
First child	170	42.4	155	38.8
Other than first	231	57.6	244	61.2
Educational level of the respondent				
Illiterate	26	6.5	5	1.3
Just Literate	34	8.5	3	0.8
Primary	186	46.4	121	30.3
Middle	82	20.4	72	18.0
Secondary	44	11.0	73	18.3
Higher secondary and above	29	7.2	125	31.3
Marital status of respondent				
Married	38	9.5	14	3.5
Unmarried	363	90.5	385	96.5
Total	401	100.0	399	100.0

Personal attributes of adolescent girls

It is evident from Table 4 that almost half of the urban adolescent girls were having brothers (54%) and sisters (45%). Contrast was the case with rural counterparts where only 16.2% and 27.4% of girls had brothers and sisters, respectively. With regard to birth order of the

adolescent girls, near about 4 out of 10 adolescent girls were first child to their parents in both rural and urban area. It was found that, although the number of illiterate adolescent girl was less in both rural (6.5%) and urban (1.3%), former had more number of illiterate than the latter. A large number of the respondents in both rural (46.4%) and urban (30.3%) areas had completed primary education. Adolescent girls who had completed secondary and higher secondary and above were high in number in urban than their rural counterparts. A predominant number of adolescent girls were unmarried in both in rural (90.5%) and urban areas (96.5%).

Table 5: Educational and occupational status of parents of adolescent girls.

Variable	Karnataka, India			
	Rural		Urban	
	N	%	N	%
Educational status of father				
Illiterate	96	23.9	32	8.0
Just literate	95	23.7	40	10.0
Primary	124	30.9	77	19.3
Middle	14	3.5	29	7.3
Secondary	45	11.2	133	33.3
Higher secondary	8	2.0	48	12.0
Graduate and above	19	4.7	40	10.0
Educational status of mother				
Illiterate	123	30.7	83	20.8
Just literate	107	26.7	54	13.5
Primary	128	31.9	103	25.8
Middle	7	1.7	20	5.0
Secondary	27	6.7	94	23.6
Higher secondary	5	1.2	31	7.8
Graduate and above	4	1.0	14	3.5
Occupation of father				
Agriculture and animal	186	46.4	9	2.3
Unskilled labour	101	25.2	78	19.5
Skilled labour	61	15.2	197	49.4
Business/ service	28	7.0	101	25.3
Unemployed	6	1.5	9	2.3
Dead	19	4.7	5	1.3
Occupation of mother				
Agriculture and animal	51	12.7	1	0.3
Unskilled labour	58	14.5	19	4.8
Skilled labour	4	1.0	70	17.5
Business/ service	11	2.7	21	5.3
Housewife	270	67.3	276	69.2
Dead	7	1.7	12	3.0
Total	401	100.0	399	100.0

***Educational and occupational status of parents of adolescent girls***

Almost half (47.6%) of the rural adolescent girls' father and more than half (57.4%) of girls' mother were either illiterate or educated below primary level. The education

status of parents was found quite well in urban area and these figures were only 18% and 33%, respectively. Agriculture work and animal husbandry was the predominant occupation of fathers of adolescent girls in rural area (46.4%). In urban area, this was labour with some skill (49.4%). More than two third of mothers of adolescent girls were housewife invariably in both rural and urban study area (Table 5).

Psychosocial risk score as per different components of 'HEEADSSS'

Table 6 demonstrates the psychosocial risk score of adolescent girls as per different components of 'HEEADSSS'. The overall mean score in rural area was 18.40±6.85, which was ranging from 6 to 49.25. While in urban area it was ranging from 7 to 37 with a mean of 17.47±6.21. It is evident from the study by Gupta MK et al that higher score denotes the more risk of psychosocial abnormalities.[2] So, it can be said that adolescent girls belonging to rural area were at higher risk of psychosocial abnormality as compared to girls from rural area (Table 6). Based on the 'HEEADSSS' score, Gupta MK et al has classified the psychosocial risk status of adolescent girls as mild (>10-20), moderate (>20-30), severe (>30-40) and very severe (>40) risk.[2] By using the same classification, it was observed that, 60% of rural and 70% of urban adolescent girls were normal or at mild risk of developing psychosocial abnormalities. Approximately one-third of them (34.7%) were at moderate risk in rural area, while in urban area they were only 25%. Nearly 5% girls were at severe and very severe risk of developing psychosocial abnormalities in both rural and urban study area and needed immediate counseling to improve their psycho social behaviour (Figure 2 and 3).
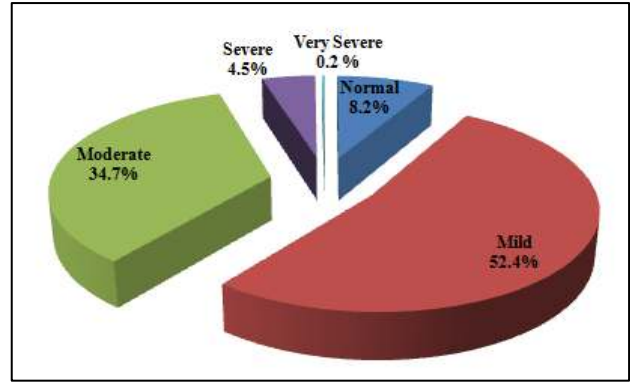
Figure 2: Risk categorization of developing psychosocial abnormality among rural adolescent girls (Ballari/rural, Karnataka, India).
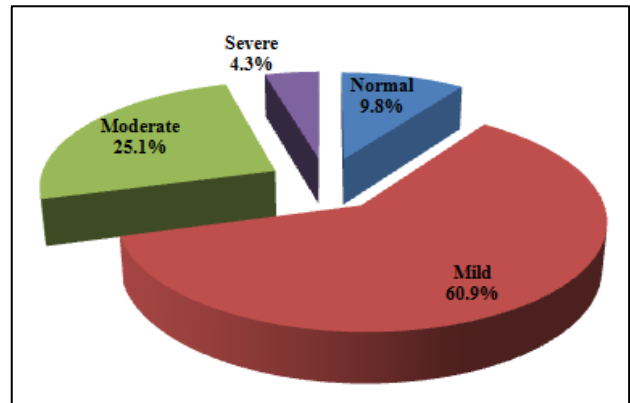
Figure 2: Risk categorization of developing psychosocial abnormality among urban adolescent girls (Bangalore, Karnataka, India).

Table 6: Psychosocial risk score as per different components of 'HEEADSSS'.

Parameters	Max. score	Karnataka, India			
		Rural		Urban	
		Mean±SD	Range (Min - Max)	Mean±SD	Range (Min - Max)
Home	13	1.88±1.15	6 (0.5-6.5)	1.38±0.90	7.5 (0.5-8)
Education and employment	14	5.48±4.35	14.5 (0-14.5)	3.65±3.30	13 (0.25-13.25)
Eating	8	1.69±0.65	5 (0.5-5.5)	2.04±0.95	5.75 (0.5-6.25)
Activities	8	3.60±1.57	6 (0.5-6.5)	2.63±1.61	6 (0-6)
Drugs	15	1.06±1.27	8 (0-8)	1.71±1.42	5 (0-5)
Sexuality	12	3.19±1.52	10.5 (0-10.5)	2.69±0.77	6 (0.5-6.5)
Suicide and depression	16	1.16±2.04	13.5 (0-13.5)	3.29±2.40	8 (0-8)
Safety	14	0.34±1.24	12.5 (0-12.5)	0.07±0.35	5 (0-5)
Total HEEADSSS score	100	18.40±6.85	43.25 (6-49.25)	17.47±6.21	30 (7-37)

Quality of life of adolescent girls in Bellary (rural area)

Table 7 depicts the mean score of quality of life of rural adolescent girls according to all the four domains. It is

evident from the table that on a 100-point scale, the mean QOL score was highest for social relations (7102±21.6) and was minimum for physical domain (49.59±12.63). In all the domains, the score was ranging from 0 to 100.

DISCUSSION

Reproductive and child health (RCH) has been the major focused health issue in India since the inception of planning process and the emphasis on adolescent girls was either completely lacking or was ignored. Recently it has been realized that improvement in health and psychosocial status of adolescent girls has utmost importance in public health and has been identified as priority agenda now. But considering the present efforts, it is clearly evident that the same have not been optimally worked out in existing policies and programs. Since lacunae persist in all the domains of woman empowerment (viz. education, employment, equity) in Indian societies, there is every reason to support this, as there is a relationship between gender power imbalance and health of adolescents and woman, which has been amply highlighted by some studies.[4-6]

Table 7: Quality of Life of adolescent girls in Bellary (rural area).

Domain	N	Minimum	Maximum	Mean	Std. deviation
Physical	394	0	100	49.59	12.63
Psychological	394	0	100	65.03	21.78
Social relations	394	0	100	71.02	21.60
Environmental	394	0	100	59.04	20.29

In the present study, more than half of the adolescent girls in rural area were belonging to early adolescent age group. This is contrary to the findings of Budimelli S and Chebrolu K, in which around half of the studied adolescent girls were from late adolescent age group.[3] This figure was 40.1% for urban counterpart. Majority of the respondents were Hindu by religion in the study area, which is similar to the findings of many other studies.[3,7] With respect to the caste category, near about half of the rural girls were belonging to OBC caste category, while in urban area similar proportion of girls were belonging to SC/ST caste category. Preponderance of OBC caste category in rural areas has also shown by Gupta MK et al, and Budimelli S et al.[3,7] In the present study both nuclear and joint family types were having almost equal distribution in rural part of study area with a mean family size of 6 members. In the study by Gupta MK et al joint family system was in vogue and thereby there was a preponderance of large families.[7] While in the study of Budimelli S et al nuclear family system was dominating in the study area.[3] Economic security and family income have a strong bearing on the health of vulnerable section of the society. As per BG Prasad socio economic classification (modified as per 2015 CPI), majority of the rural adolescent girls were belonging to lower or lower middle socio-economic group, whereas, in urban area most of them were from upper and upper middle socio-economic class. This is contrary to the findings of Gupta MK et al.[7] Presence of more number of siblings acts as a support mechanism especially in rural areas. This can be supported by the study of Gupta MK et al.[7]

Literacy of parents has a definitive contribution in the psychosocial development of an adolescent girl. But the study subjects from rural area did not have this opportunity, as almost half of the parents of rural adolescent girls were either illiterate or educated below primary level. This is in accordance to the findings of Gupta MK et al.[7] Agriculture work and animal husbandry was the predominant occupation of fathers of rural adolescent girls and in urban area this was labor with some skill. The results are in conformity with the findings of many other studies Gupta MK et al and Mitra et al.[7,8] Mothers' contribution in economic support of the family has not been substantiated and more than two third of mothers' of adolescent girls were housewife invariably in both rural and urban study area. Similar findings have been reported by Paul et al.[9]

The maturation process of any program has three stages; conceptual stage, operational stage and practice stage. Though WHO' 'HEEADSSS' approach has paramount importance as a system of early recognition of psychosocial abnormality, yet it is still in conceptual stage. By adopting this approach in the present study, the overall psychosocial status of adolescent girls is far from being satisfactory. Approximately one-third of the adolescent girls were at moderate risk of developing psychosocial abnormalities in rural area, while in urban area they were only one fourth. Nearly 5% girls were at severe and very severe risk of developing psychosocial abnormalities in both rural and urban study area and needed immediate counselling to improve their psycho social behaviour. Contrary to this in the study by Gupta MK et al, mild and moderate psychosocial risk was present in 42.0% and 43.5% study subjects, respectively and around 12% adolescent girls had severe risk for psychosocial abnormality.[7] In the study of Budimelli S and et al, nearly one third of the adolescent girls were having moderate risk, and 16.7% were found with severe and very severe risk. Only 9.9% were found to be normal.[3]

The health-related quality of life (HRQoL) studies have been rare in Indian adolescents and have been mainly undertaken in western countries leading to unavailability

of sufficient data for the discussion purpose. Awasthi S et al has demonstrated the importance of WHOQOL-BREF as a better instrument than other tools for self-reporting of HRQoL by Indian adolescents.[10] In the present study on a 100 point scale, the mean QOL score was highest for social relations and was minimum for physical and environmental domains. These findings are in accordance with the findings of the study conducted by Awasthi S et al and Qadri S et al.[10,11] High self-reporting in social domain matches the findings reported by Korean, Norwegian, Greek, Californian and Indian adolescents.[12-16] Low reporting on environment domain of WHOQOL-BREF has been observed for Chinese and Indian adolescents.[16,17]

There is paucity of relevant studies involving urban adolescent girls to compare the findings of the present study. Quality of life for urban area could not be assessed.

CONCLUSION

The study has highlighted that majority of the adolescent girls were at mild and moderate risk of developing psychosocial abnormalities and nearly one out of five were at severe risk. The study has also demonstrated that girls were having better quality of life in social relations when compared with physical and environmental domains. This calls for urgent community based interventions directed to adolescents and their families having higher vulnerability for psychosocial abnormalities and poor quality of life.

ACKNOWLEDGEMENTS

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