



Reproductive Morbidity and Endocrinological Profile of Unmarried Adolescent Girls (16-18 years) in Urban Setting

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Abstract

Background: Adolescence, defined by WHOM as period between 10-19 years, represents an unique period of life cycle. In India every 5th person is adolescent. Adolescent girls are in a crucial stage of their life cycle and their health can impact the health of future generations. so it is important to assess burden of morbidity among adolescents.

Objectives: To study the reproductive morbidity of unmarried Adolescent girls (16-18 years.) also to study the endocrinological profile of unmarried Adolescent girls (16-18 years).

Methods: This cross-sectional study was done among higher secondary schools of Thiruvananthapuram Corporation area, which is the capital city of the State of Kerala in South India. A structured questionnaire was administered to 360 adolescent girls, aged 16-18 years, to assess reproductive morbidity. General physical examination and blood tests were done to assess endocrinological profile.

Results: (55.1) belonged to 16 years, 154 (42.8) belonged to 17 years and 8 (2%) to 18 years. The mean age of menarche was 12.69 years. Majority 79.4% belonged to middle class, 17.2% belonged to lower class, and 3.4% to upper class. High prevalence of underweight ie 146 girls (33%) had under weight and 2% had obesity. Clinically pallor was seen among 122 girls (34%). diffuse thyroid enlargement was noted for 27 (5.4%). 185 (37.5%) had acne and 50 (10%) showed hyperpigmentation. Hirsutism was found in 32 (6.4%) girls. 61.1% of girls reported gynaecological morbidity. Major problem was dysmenorrhoea and 61.1% of girls reported having dysmenorrhoea. Irregular cycles were reported by 11.1% of girls. Abnormal uterine bleeding was reported by 126 (45.3%) commonest symptom was Oligomenorrhoea reported by 96 (26.7%). heavy menstrual bleeding was reported by 16 (4.4%). irregular cycles were reported by 11.8% of girls 18.8 of girls reported vaginal discharge. 14.4 % had itching and vaginal discharge. Regarding endocrinological problems, Thyroid enlargement was detected in 27 (7.5%) out of which 23 (6.3%) were diagnosed to have hypothyroidism. PCOS was seen in 13 (3.6%) out of which 12 were obese PCOS.

Conclusion: Based on our study we conclude that a high proportion of unmarried adolescent girls suffer reproductive morbidity and Endocrinological morbidity which are associated with long term consequences. There is an urgent need to restructure reproductive and sexual health care programme of adolescents with main focus on primary prevention measures.

Keywords: Adolescents, Reproductive Morbidity, Endocrinological morbidity, PCOS hypothyroidism.

Introduction

Adolescence, defined by WHO as period between 10-19 years, represents an unique period of life cycle.¹ In India every 5th person is an adolescent.² Adolescent girls constitute about 1/5th of total female population in the world. Adolescent make significant choices about their health, and many of the health problems during adolescent can have long term sequelae and can predispose to adult onset life style diseases. Promoting the health and safety of adolescents is of critical importance to the future of the nation as the health of adolescent girls is a crucial determinant of their adult health and healthy aging and also of intergenerational health. It is important to reach out to the adolescents in their own environment that is schools and community. It is in this context that Government of India has launched National adolescent health strategy Rashtirya Kishor Swasthya Kariyakaram. (RKSK) ⁽³⁾. This strategy focus on community based health promotion and prevention with referral linkage to clinics. RKSK identifies six areas of action- Reproductive and sexual health, Nutrition, Mental health, Injuries and Violence, including Domestic and Gender Based Violence, Substance Abuse and Non Communicable Diseases.

Approach to the new strategy is based on continuum of care of adolescent through provision of information at schools and community level and linking to public health level through referral.⁽³⁾ In order to respond effectively to adolescent- Reproductive and sexual health, it is important to assess the reproductive health needs of adolescent. Moreover adolescent growth and development is determined by the interaction of various hormones. Hormonal changes occurring in this transition phase, can predispose to various endocrine abnormalities like hypothyroidism, Polycystic Ovary Syndrome(PCOS) etc.

Given the marked variations in the experience of adolescent across states, gender, geography and socio cultural background, programming for diversity of adolescent to various needs is imperative. Hence it is important to assess the

wide ranging health needs of adolescent, so that they can grow up healthy and safe. Early identification and management of reproductive health issues is important to prevent future morbidity and inter generational transmission of disease. Recently focus is in non-communicable diseases prevention. PCOS during adolescence is known as the important risk factor for Non Communicable Diseases in later life, and infertility and reproductive cancers. To deliver various interventions, it is important to have health needs adolescent girls. Hence this study is done to assess the burden of reproductive morbidity and endocrinological profile of Plus two adolescent girls.

Objectives

1. To study the reproductive morbidity of unmarried Adolescent girls (16-18 years)
2. To study the endocrinological profile of unmarried Adolescent girls (16-18 years)

Methodology

Study was conducted in the higher secondary schools of Thiruvananthapuram Corporation area, which is the capital city of the State of Kerala in South India. The schools were classified based on funding received as Government, Aided and private schools. The study sample included 360 adolescent girls of 16-18 years studying in Plus Two classes. Representative sample of schools were selected using Stratified multi stage sampling and one division of each class was selected using simple random sampling. This age group is selected because pubertal development is complete in almost all girls by this age. Moreover this is the window of opportunity for adolescent girls to get guidance related to reproductive health problems from health care providers. School based study is because school enrolment is almost 100% in the state of Kerala, and this can provide of representative sample and hence reflect the magnitude of disease burden. Ethical clearance was obtained from the institutional ethical committee.

The department of Obstetrics and Gynaecology of Sree Avittom Thirunal hospital, which is a tertiary care teaching hospital, has been conducting Health awareness classes for adolescent girls in various schools of Thiruvananthapuram corporation area as outreach academic programme. This study was conducted as part of the programme. Informed written consent was obtained from the parents of participating girls. A structured questionnaire was administered to the participants and data collected. As part of the school health programme, space is arranged by schools for a general physical examination which included, Height, Weight, Waist circumference, pallor, PR, BP and thyroid swelling. Presence of acne, hirsutism was also noted.

Those with self-reported health problems were examined in the adolescent health clinic and Endocrinology Clinic of Sree Avittom Thirunal Hospital. Those with enlargement of thyroid and symptoms suggestive of thyroid dysfunction, blood samples were taken to determine TSH, T3 and T4.. Those with menstrual dysfunction, trans abdominal USS was done in the clinic by a trained Sonologist. Presence of 10 or more tiny follicles of 2-10 mm in diameter per ovary and increased ovarian volume was considered as polycystic ovaries and clinical history of hyper androgenism was assessed to make a diagnosis of PCOS.. The existing Rotterdam guidelines suggest that PCOM is indicated by the presence of at least 12 follicles measuring 2 to 9 mm in the whole ovary or by the finding of increased ovarian size morphology was subjected to further evaluation to rule out polycystic ovary syndrome. Rotterdam criteria was used to diagnose PCOS

Results

Socio-demographic characteristics are shown in Table-1. Out of 360 girls enrolled in the study, 198 (55.1) belonged to 16 years, 154 (42.8) belonged to 17 years and 8 (2%) to 18 years. The mean age of menarche of the adolescent girls was 12.69 years). Majority 79.4% belonged to middle class, 17.2% belonged to lower class, and 3.4% to upper class. Table 2 shows the distribution of general

physical findings. The significant finding is the high proportion of underweight ie 146 girls (33%) had under weight and 2% had obesity. Clinically pallor was seen among 122 girls (34%). Diffuse thyroid enlargement was noted for 27 (5.4). 185 (37.5%) had acne and 50 (10%) showed hyperpigmentation. Hirsutism was found in 32 (6.4%) girls. Table -4 shows that 61.1% of girls reported gynaecological morbidity. Major problem was dysmenorrhoea and 61.1% of girls reported having dysmenorrhoea. Irregular cycles were reported by 11.1% of girls. Abnormal uterine bleeding was reported by 126 (45.3%). Commonest symptom was Oligomenorrhoea reported by 96 (26.7%). Heavy menstrual bleeding was reported by 16 (4.4%). Irregular cycles were reported by 11.8% of girls. 18.8 of girls reported vaginal discharge. 14.4 % itching and vaginal discharge.

Table 5 shows endocrinological problems. Thyroid enlargement was detected in 27 (7.5%) out of which 23 (6.3%) were diagnosed to have hypothyroidism. PCOS was seen in 13 (3.6%) out of which 12 were obese PCOS.

Table1. Socio demographic characteristics

Characteristics	No	(%)
Age		
16	198	(55.1)
17	154	(42.9)
18	8	(2)
Socio economic status		
Lower	62	(17.2)
Middle	285	(79.4)
Upper	13	(3.4)
Religion		
Hindu	244	(68)
Christian	76	(21)
Muslim	40	(11)

Table 2 - General physical characteristics

Body Mass Index	No	%
Normal	278	(57.7)
Under weight	146	(33.3)
Overweight	36	(7)
Obese	12	(2)
Pallor	122	(34)
Blood pressure normal	338	(94%)
Thyroid Enlargement	27	(5.4)
Acne	185	(37.1)
Hirsutism	32	(6.4)
Hyper pigmentation	50	(10)

Table 3: self-reported gynaecological Morbidity

Symptoms	N	%
Dysmenorrhoea	219	(65.1)
Irregular cycles	43	(11.8)
Heavy Menstrual bleeding	16	(4.4)
Oligomenorrhoea	96	(26.7)
Polymenorrhoea	14	(3.8)
Discharge P /V	68	(18.8)
Discharge p/v with itching	52	(14.4)
Low backache	52	(14.4)
Pain during micturition	24	(6.8)

Table 4 : Endocrinological morbidity

Endocrinological morbidity		
Thyroid enlargement	27	(7.5)
Hypothyroidism	23	(6.3)
PCOS	13	(3.6)
PCOS and obesity	12	(2)

Discussion

Reproductive and sexual health of adolescent is one of the key determinants of future adult onset diseases most of which is preventable by appropriate timely interventions. Adolescence being the transitional period with its hormonal changes predispose to endocrinological problems like thyroid deficiency, polycystic ovary syndrome, hyper prolactemia etc. All those are associated with noncommunicable diseases in future. The results of this study helps to identify the reproductive morbidity and endocrinological morbidity among un married adolescent girls (16-18) in urban set up.

The key observation from the study was the high proportion of reproductive morbidity which is reported by 61.2% of girls. Menstrual problems topped the list of morbidity and dysmenoorheoa was the major problem. The prevalence of self reported reproductive symptoms in various studies were reported to vary between 20-84%^{15, 16.} Dysmenorrhoea is a symptom which is mostly dismissed as a normal physiological pain during menstruation. But newer evidence shows that the prevalence of Endometriosis is high among women who had dysmenorrhoea during adolescence. Increasing female infertility is posing great challenges in recent years. Based on the results of this study, it is important to view dysmenorrhoea

as a symptom of underlying diseases like endometriosis. These girls need further evaluation to rule out future infertility.

The higher proportion of endocrinological problems, particularly hypothyroidism found out from this study provides valuable information. Based on the results of this study, it is important to screen for hypothyroidism among adolescent girls. Early detection and timely treatment is crucial in reducing future problems. Another important problem detected was PCOS, which is an antecedent to various adult onset diseases, infertility and malignancies.

Conclusions

Based on our study we conclude that a high proportion of unmarried adolescent girls suffer reproductive morbidity and Endocrinological morbidity which is associated with long term consequences. There is an urgent need to restructure reproductive and sexual health care programme of adolescents with main focus on primary prevention measures. Findings of this study are important for programme managers of Adolescent health services in Kerala to make state specific modifications based on need.

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