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INFLUENCE OF SOCIO DEMOGRAPHIC VARIABLES ON KNOWLEDGE, ATTITUDE AND PRACTICE REGARDING EARLY MENARCHE AMONG SCHOOL GIRLS IN BANGALORE

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ABSTRACT   Puberty or menarche is the first onset of menstrual bleeding between 12 to 14 years and recently there is decline in the age of attaining menarche from 12 - 14 years to less than 12 years (between 8 and 11 years). Girls younger than 12 years have less intellectual maturity and understanding of menarche which is also influenced by various socio demographic variables. The aim of the study is to assess the influence of socio demographic variables on knowledge (K), attitude (A) and practice (P) regarding menarche among girls (n=150; age: 8 – 11 years) in selected schools in Bangalore, Karnataka. A data collection instrument (DCI) was developed to quantitatively measure the KAP. Our results show that, there is significant influence of the few demographic variables like education of the student (p<0.001), education of the mother (p<0.001), occupation of the mother (p<0.001), age at menarche (p<0.001), family income (p<0.001), place of residence (p<0.001) and dietary pattern (p<0.05) on knowledge about menarche. We did not find significant association of socio demographic variables on attitude and practice.

KEYWORDS : menarche, schoolgirls, socio demographic variables

INTRODUCTION
Menarche or puberty refers to the process of onset of girls' reproductive maturity, which typically occurs in the girls' life between the ages of 12-14years. Early menarche refers to the attainment of puberty between the ages of 8-11 years. Early pubertal development has been shown to be influenced by various socio demographic variables. The results of the study conducted to assess the knowledge level of 150 girls of Dehra Dun-the capital of Uttarakhand, India, regarding menstruation, highlight the common practices followed by these young girls and the restrictions placed upon them during the menstrual period (Balodi 2014).The study also suggests an urgent need to address the issue of Menstrual Hygiene Management while providing appropriate information to young girls regarding the process of menstruation and basic hygiene practices to be adopted to avoid genital problems, while placing emphasis on the efforts to eradicate orthodox thinking and the invalid restrictions placed upon them during this period.(Balodi, 2014)

Based on several reviews (Rupa vani K.1, 2013 Nov; Tayebi, 2016) various socio demographic variables like parents' education, family income, lifestyle of parents, dietary pattern, physical activity, poor Menstrual Hygiene Management (MHM), girls level of education and their awareness about menarche before its onset, residence in rural, sub-urban and urban areas are significantly associated with earlier menarche. Also, girls from high income earning families experienced menarche earlier than those who were from lower income groups. And there were also prospective associations between consumption of caffeinated and non caffeinated sugar and artificially sweetened soft drinks with early menarche. As the awareness about menarche is very less in young girls, understanding these influential factors will aid in designing an interventional package to provide a holistic approach to improve the girls' knowledge, attitude and practice regarding early menarche.

We believe that these socio demographic variables also influence the knowledge, attitude and practice regarding early menarche and its management among young girls (8-11years) in Bangalore, Karnataka. Our objective was to assess the influence of socio demographic variables like (age, religion, type of family, source of information, care taker, education of mother, and occupation of

mother, family income per annum, place of resident, dietary pattern, leisure time activity and age at menarche) on Knowledge (the level of understanding on early menarche), Attitude (a viewpoint/way of behavior related to personal hygiene, menstrual hygiene, social and psychological wellbeing) and Practice (the actions such as taking care of themselves during menstruation based on their knowledge about menarche) .

REVIEW OF LITERATURE
Modernization and globalization has led to a drastic change in the life style across the world. These changes may have led to the betterment of the society, but certain aspects of modernization such as use of motor transport leading to a sedentary life style, consuming food (animal products) grown with hormones leading to change in the dietary patterns and increase in family income have caused changes in the menstrual pattern in the girls across the globe.

Several studies have reported reduction in the age at menarche and its significant relationship with parents' education, financial freedom and lifestyle changes. It has been shown that girls from urban areas and high income families attained early menarche. (Ameade, 2016; Tayebi, 2016). Few studies have also shown that dysmenorrhea and premenstrual symptoms were found to be very common in the overweight girls, girls who had unhealthy eating habits, such as consuming caffeinated drinks high on sucrose, girls on diet to lose weight and girls with less physical activity and sedentary behavior.(Ameade, 2016; Lee, Pabayo, & Kawachi, 2016; Mueller, 2015; Rupa vani K.1, 2013 Nov)

Many studies done on the menstrual practices and knowledge about menarche, before the onset of menarche showed that the awareness about menarche and its management is very poor. These unhygienic menarchial management practices in several cases have led to reproductive tract infections and reproductive morbidity.(Davis et al., 2018; Kansal, 2016; Mathiyalagen, 2017; Thakur, 2014)

In India, particularly in Karnataka there is no data pertaining to the association of socio demographic variables on knowledge, attitude and practice regarding early menarche. We believe that there is association of socio demographic variables on knowledge, attitude

and practice regarding early menarche among young girls in Karnataka. To assess this we have designed a data collection instrument (DCI) and administered it to 150 school girls from selected schools in Bangalore.

METHODOLOGY
All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Heisinki declaration and its later amendments or comparable ethical standards.

For this study, 150 schools girls (8-11 years) were selected by clustered sampling technique and Quantitative research approach (descriptive research design) was used. A data collection instrument (DCI) containing four sections-(A) demographic variables (age, religion, type of family, source of information, care taker, education of mother, and occupation of mother, family income per annum, place of resident, dietary pattern, leisure time activity and age at menarche) (B) structured questionnaire, (C) modified Likert's scale and (D) check list to assess Knowledge, Attitude and Practice (KAP) respectively was used. The description and the scoring interpretation of KAP was described in Sumathy et al (Sumathy Gee, 2018)

DATA COLLECTION PROCEDURE:
Formal written permission was obtained from concerned authorities before data collection. The data collection period was one month based on the convenience of the respondents. The investigator selected 150 samples by cluster sampling technique.

The data collection procedure was as described in Sumathy et al (Sumathy Gee, 2018). The collected data was compiled for analysis.

STATISTICAL ANALYSIS
Baseline Performa containing samples characteristics were analyzed by using frequency and percentage distribution. The association of demographic variables on knowledge, attitude and practice level of school girls regarding early menarche was calculated using chi-square analysis and statistical significance was assessed by t-test using Microsoft office Excel ®

ETHICAL CONSIDERATION:
Written permission from the authorities of the schools and informed consent from the subjects were obtained before conducting the study. No ethical issues were confronted while conducting the study.

RESULTS AND DISCUSSION
The association of socio - demographic variables on knowledge regarding early menarche in school girls is depicted in Table 1 with the chi-square (χ^2) analysis and the significance of the association by the p values. Table 1 shows that education of the student ($\chi^2 = 13.51$, p<0.001), education of the mother ($\chi^2 = 17.82$, p<0.001), occupation of the mother ($\chi^2 = 13.44$, p<0.001), age at menarche ($\chi^2 = 18.05$, p<0.001), family income ($\chi^2 = 34.09$, p<0.001), place of residence ($\chi^2 = 12.55$, p<0.001) and dietary pattern ($\chi^2 = 6.012$, p<0.001) were significantly associated with the level of knowledge, whereas none of the other socio demographic variables were found to have significant association.

Table 1 Association of socio-demographic variables with the level of knowledge (K) regarding early menarche among girls (n=150)

Socio demographic variable		Inadequate knowledge - < 50%		Moderately adequate knowledge – 50% to 75%		Adequate knowledge - > 75%			
		No	%	No	%	No	%	Chi square	p value
Education of the student	4 Standard	0	0.0%	2	2.1%	0	0.0%	13.511	.004*
	5 Standard	3	5.4%	7	7.4%	0	0.0%		
	6 Standard	32	57.1%	26	27.7%	0	0.0%		
	7 Standard	21	37.5%	59	62.8%	0	0.0%		
Age of the sample	8 to 9 years	0	0.0%	0	0.0%	0	0.0%	1.129	0.288
	9 to 10 years	5	8.9%	14	14.9%	0	0.0%		
	10 to 11 years	51	91.1%	80	85.1%	0	0.0%		
Religion	Hindu	48	85.7%	80	85.1%	0	0.0%	0.704	0.703
	Christian	6	10.7%	8	8.5%	0	0.0%		
	Muslim	2	3.6%	6	6.4%	0	0.0%		
Type of family	Nuclear family	51	91.1%	75	79.8%	0	0.0%	3.325	0.068
	Joint Family	5	8.9%	19	20.2%	0	0.0%		
Education of the mother	Illiterate	0	0.0%	0	0.0%	0	0.0%	17.820	.000*
	Primary education(1-5)	16	28.6%	5	5.3%	0	0.0%		
	Secondary education(6-10)	38	67.9%	87	92.6%	0	0.0%		
	Higher secondary education(11-12)	0	0.0%	1	1.1%	0	0.0%		
	College education	2	3.6%	1	1.1%	0	0.0%		
Occupation of the mother	Home maker	25	44.6%	70	74.5%	0	0.0%	13.443	.000*
	Daily wage	0	0.0%	0	0.0%	0	0.0%		
	Govt/private employee	31	55.4%	24	25.5%	0	0.0%		
	Business	0	0.0%	0	0.0%	0	0.0%		
Family income per annum	Above poverty line (>Rs 17.000 /-)	13	23.2%	68	72.3%	0	0.0%	34.096	.000*
	below poverty line (<Rs 17.000 /-)	43	76.8%	26	27.7%	0	0.0%		
Age at menarche	8.00	0	0.0%	0	0.0%	0	0.0%	18.051	.000*
	9.00	2	3.6%	5	5.3%	0	0.0%		
	10.00	51	91.1%	56	59.6%	0	0.0%		
	11.00	3	5.4%	33	35.1%	0	0.0%		

Place of resident	Urban	43	76.8%	90	95.7%	0	0.0%	12.553	.000*
	Rural	13	23.2%	4	4.3%	0	0.0%		
Dietary pattern	Vegetarian	1	1.8%	8	8.5%	0	0.0%	6.012	.049*
	Eggetarian	1	1.8%	8	8.5%	0	0.0%		
	Non Vegetarian (preferably chicken)	54	96.4%	78	83.0%	0	0.0%		
Leisure time activity	Playing Outdoor games	6	10.7%	16	17.0%	0	0.0%	1.235	0.539
	Playing indoor games	4	7.1%	5	5.3%	0	0.0%		
	Using electronic gadgets	46	82.1%	73	77.7%	0	0.0%		

We did not find any significant association between the socio-demographic variables and attitude and practice of menarche management.

Our results show that, the higher the education of the student, higher the level of mothers education and occupation, higher the family income, residence in urban areas, the level of knowledge regarding early menarche among girls is high. However, there was no significant association of socio demographic variables on attitude and practice.

CONCLUSION

Our results suggest that certain socio - demographic variables have a significant effect on the knowledge pertaining to menarche. However, as the age of menarche is reduced to as low as 8 years, we have seen that the knowledge about menarche at such a young age is very less. Also, there is significant portion of Indian population below poverty line and mother's who have very less to no education, indicating that majority of girls do not have access to pre-menarcheal education.

The results of this study clearly depicts knowledge about early menarche is based on family and the environment, therefore there is a need to involve parents, teachers and social organizations to create awareness about menarche and its management among these young girls (8-11years) to lead a productive life.

FUTURESCOPE

As the pre-menarcheal knowledge is significantly influenced by various socio demographic variables, and the access to this knowledge through mother's education, residence in urban areas and increase in family income, is not feasible to majority of population. Hence, we propose an interventional package which is a holistic approach to educate the large number of girls regarding menarche and its management in selected schools at Bangalore. Furthermore, studies will be conducted to educate parents, teachers and the stakeholders regarding early menarche and its management for the betterment of girls' health.

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