

Original Research Article

Association of various socio demographic factors with knowledge and practice regarding menstrual hygiene among school going adolescent girls of Jaipur city

Nikita Sharma*, Rekha Shekhawat

Department of Preventive and Social Medicine, S.M.S Medical College, Jaipur, Rajasthan, India

Received: 18 May 2019

Revised: 03 June 2019

Accepted: 04 June 2019

*Correspondence:

Dr. Nikita Sharma,

E-mail: nikitarishi81@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: There is lack of information on the process of menstruation, the physical and psychological changes associated with puberty and proper requirements for managing menstruation. Hence this community based study was carried out with the objective to assess the level of knowledge and practice regarding menstrual hygiene and their association with sociodemographic factors among school going adolescent girls.

Methods: A descriptive, cross sectional study was conducted among 996 adolescent girls of senior secondary schools of Jaipur city.

Results: It was evident that 80.72% participants were aware about menstruation before their menarche. Majority (68.07%) used sanitary pad as absorbent material. 34.53% changed the pad at least 3 times or more in a day. 29.21% cleaned the genitalia twice or more than 2 times a day. 86.14% participants were restricted to do religious activities. Significant association was found between type of absorbent used socio economic status, mother's education.

Conclusions: There is strong need to improvise and promote good menstrual hygiene knowledge and practices among adolescent girls. Improving mother's knowledge on menstrual hygiene management can go a long way in improving menstrual hygiene practice.

Keywords: Adolescent, Menarche, Menstruation, Menstrual hygiene

INTRODUCTION

Adolescence (from Latin *adolescere*, meaning "to grow up") is a transitional phase of growth and development between childhood and adulthood. The World Health Organization (WHO) defines an adolescent as any person between ages 10 and 19 years.¹

There are about 1.2 billion adolescents, worldwide. It is reported that more than half of the adolescents live in Asia. As per Census 2011, India is the home to 243 million adolescents contributing to one fifth (21.4%) of India's population and adolescent girls constitute to 47 percent of total adolescent population.²

In the life of a female, the transition from childhood to adulthood occurs during period of adolescence which according to WHO extends from 10-19 years of age.³ It starts with the onset of menarche, a milestone in a woman's life and denotes the beginning of her reproductive capacity of woman.^{4,5} Menarche is the first menstruation of a girl. It occurs at the age of 12-13 years, although it may occur as early as 10 years or as late as 16 years. The age of menarche is between 10-16 years (average age 13.5 years) in India.⁶ Globally about 52% of the female population is of reproductive age, meaning menstruation is part of their normal life and menstrual hygiene is therefore an essential part of basic hygienic practices.⁷ Adolescent girls constitute a vulnerable group,

particularly in India where female child is neglected one. The manner in which a girl learns about menstruation and its associated changes may have an impact process as it is linked with several misconceptions and inadequate practices, which sometimes result into adverse health outcomes.⁸ Menstrual hygiene, which refers to the effective management of menstrual bleeding by women and girls, is an important aspect of reproductive health, which if not handled appropriately can cause infections of the urinary tract, pelvic inflammatory diseases, vaginal thrush, as well as bad odour, soiled garments and ultimately shame, leading to infringement on the girl's dignity.⁹ The myths and taboos related to menstruation in society prevents girls from articulating their needs and the problems of poor menstrual hygiene management. Even in urban areas due to lack of time given by parents, hesitation of teachers girls have incomplete knowledge regarding menstruation. Thus, present study was conducted with the aim to explore the prevailing knowledge and practices of menstrual hygiene among school going adolescent girls (10-19 years) of Jaipur city and to determine its association with socio demographic variables.

METHODS

Study area

Senior Secondary schools of Jaipur City.

Study type

This is a community based descriptive type of observational study which was conducted on adolescent female students (10-19 years) of Jaipur city.

Study design

Cross sectional study design.

Study period

After getting approval from the institutional research review board and Ethical committee, plan of study was executed. Data collection for this study was carried out from 1st July 2017 to 10th April 2018.

Study universe

Female students of age group 10-19 years studying in class 6th-12th of randomly selected schools of Jaipur city.

Sample size

The sample size calculated was 793 at 95% confidence interval and 7% relative error to verify the expected minimum 50.8% of prevalence of adolescent girls practicing the use of sanitary pads during menstruation.¹⁰ To cover the expected 20% non response, it was enhanced to 1000.

Study tool

Pre-designed and pre tested structured questionnaire having following parts:

- Section A-Socio demographic Proforma.
- Section B-Questionnaire regarding knowledge and practice of menstrual hygiene.

Inclusion criteria

Inclusion criteria were female students of 10 to 19 years studying in government and private senior secondary schools having ≥ 500 students of Jaipur city; female students present on the day of study; female students who had attained menarche.

Exclusion criteria

Exclusion criteria were those whose Principal /school authorities did not give consent; female students who had not attained menarche; female students who were absent on the day of study.

Sampling technique

A complete list of senior secondary; government and private schools of Jaipur city; within ≥ 500 students was procured from Department of Education, Jaipur. All schools in each zone of the city (East, West, North and South) were categorized into government and private schools. One school each of government and private category from each zone (East, West, North and South zone) was selected by simple random sampling technique i.e. 8 schools in total. Permission to collect information was taken from District Education officer. Permission was taken from principals of the selected School. If permission from selected school authority was not granted then it was replaced by the next school in the list in same category. 125 female students studying in class 6-12th from each school were randomly selected to cover the sample size of 1000; hence 18 randomly selected female students from each class (6th to 12th) were included. In case there was more than one section in a class, section was selected by chit in box method and 18 female students were selected by simple random method from the list of class roll numbers by using computer generated random numbers. If the selected female had not attained menarche than next roll number female student was selected All randomly selected eligible female students were asked to fill the pre-designed, pre-tested, structured knowledge and practice questionnaire after explaining them the purpose of study and promise anonymity. In co-educational schools, authorities were requested to make proper arrangements to ensure privacy for female students at the time of data collection. This was followed by a two way discussion with study participants in presence of school staff so as to improve their knowledge and practice regarding menstrual hygiene management. Data was summarised in MS excel

worksheet. Continuous data was summarized in form of mean and SD and analysed and countable data was expressed in form of proportions. Socio economic status (SES) was determined by modified Kuppaswamy classification 2018. Out of 1008 selected students, 996 filled the questionnaire completely.

RESULTS

In the present study 996 participants had filled the questionnaire completely; 499 from private and 497 from government school. Majority of them (43.77%) were in age group 13-15 years. Proportion in upper middle class and lower middle class found to be 42.27% and 31.73% respectively. Mothers of majority (23.59%) of the girls were educated till high school. Participants whose mothers were graduates were 13.45%. Participants living in a nuclear family were 68.07% while 31.92% were living in joint family (Table 1).

Table 1: Socio-demographic distribution of study population (n=996).

S. no.	Variables	Number	Percentage (%)
1.	Age group (in years)		
	10-12	161	16.16
	13-15	436	43.77
	16-19	399	40.06
2.	Socio economic status		
	Upper class	29	2.91
	Upper-middle class	421	42.27
	Lower-middle class	316	31.73
	Upper-lower class	220	22.09
	Lower class	10	1
3.	Educational qualification of mother		
	Illiterate	233	23.39
	Primary school	97	9.74
	Middle school	122	12.24
	High school	235	23.59
	Intermediate/diploma	170	17.06
	Graduate	134	13.45
	Professional degree	5	0.50
4.	Type of family		
	Nuclear	678	68.07
	Joint	318	31.92

Majority (80.72%) of the participants were aware about menarche before its onset. 68.07% of participants used sanitary pad as absorbent material. 34.53% reported that they change the pad at least 3 times or more in a day. Only 29.21% cleaned the genitalia twice or more than 2 times a day (Table 2). 86.14% participants were restricted to do religious activities, 21.3% were restricted to play during menstruation. 4.31% participants were not allowed to go to school during menstruation (Figure 1).

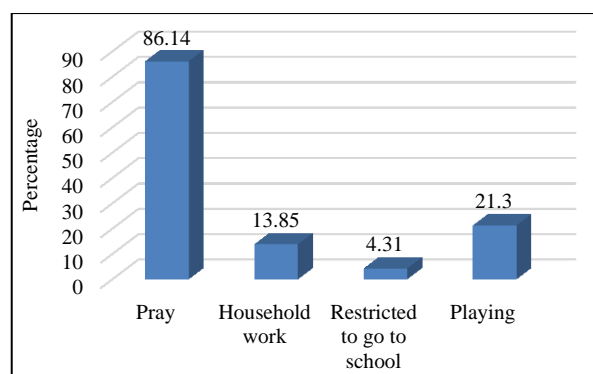


Figure 1: Distribution of participants as per restrictions faced by them during menstruation.

Table 2: Distribution of study population as per their knowledge and practice regarding menstrual hygiene.

S. no.	Variables	Number	Percentage (%)
1.	Awareness about menarche before its onset		
	Yes	804	80.72
	No	192	19.27
2.	Type of absorbent used		
	Sanitary pad	678	68.07
	Cloth	318	31.92
3.	Frequency of changing pad		
	3 or ≥ 3 times	344	34.53
	≤ 3 times	652	65.46
4.	Cleaning of external genital area		
	Twice or more	291	29.21
	Less than two times	705	70.78

With increasing age knowledge which participants had before menarche has increased. The proportion is maximum in age group of 16-19 years (83.20%) followed by age group of 13-15 years (81.65%). This difference was found to be significant. Socio economic status is also significantly associated. Proportion is higher in upper class (93.10%); in lower class it is only 40%. All (100%) the girls whose mothers were professionally qualified knew about menarche before its onset while whose mothers were illiterate this proportion was only 64.38%. Proportion was found to be more in those living in nuclear family (84.51%) (Table 3).

Practice of using sanitary pad was found maximum in 16-19 years of age group (73.68%). All the participants (100%) of upper class used sanitary pad while only 30% participants of lower class used sanitary pad. All (100%) the participants whose mothers were professionally qualified used sanitary pad, while only 55.36% used sanitary pads whose mothers were illiterate. Hence, significant association was found between correct practice of absorbent used with socio economic status, mother's education (Table 4).

Table 3: Association of various socio demographic factors with knowledge of menstruation before menarche.

Variables	Did you had knowledge about menstruation before menarche?						P value
	Yes (n=804)		No (n=192)		Total (n=996)		
	Number	%	Number	%	Number	%	
Age (in year)							
10-12	116	72.05	45	27.95	161	100	0.007
13-15	356	81.65	80	18.35	436	100	
16-19	332	83.20	67	16.79	399	100	
Socio economic status							
Upper	27	93.10	2	6.89	29	100	<0.001
Upper middle	345	81.94	76	18.05	421	100	
Lower middle	290	91.77	26	8.22	316	100	
Upper lower	138	62.72	82	37.27	220	100	
Lower	4	40.00	6	60.00	10	100	
Mother's education							
Illiterate	150	64.38	83	35.62	233	100	<0.001
Primary school	63	64.95	34	35.05	97	100	
Middle school	92	75.41	30	24.59	122	100	
High school	204	86.81	31	13.19	235	100	
Intermediate	160	94.12	10	5.88	170	100	
Graduate/postgraduate	130	97.01	4	2.99	134	100	
Profession or Honours	5	100.0	0	0.00	5	100	
Family type							
Nuclear	573	84.51	105	15.48	678	100	<0.001
Joint	231	72.64	87	27.35	318	100	

Table 4: Association of various sociodemographic variable as per their practice regarding type of absorbent used.

Variables	What do you use as an absorbent during menstruation?						P value
	Correct Practice*		Incorrect Practice*		Total		
	Number	%	Number	%	Number	%	
Age in years							0.008
10-12	102	63.35	59	36.64	161	100	
13-15	282	64.68	154	35.32	436	100	
16-19	294	73.68	105	26.31	399	100	
Socio economic status							<0.001
Upper	29	100.00	0	0.00	29	100	
Upper middle	350	83.13	71	16.86	421	100	
Lower middle	200	63.29	116	36.70	316	100	
Upper lower	96	43.64	124	56.36	220	100	
Lower	3	30.00	7	70.00	10	100	
Mother's education							<0.001
Illiterate	129	55.36	104	44.63	233	100	
Primary school	40	41.24	57	58.76	97	100	
Middle school	82	67.21	40	32.78	122	100	
High school	150	63.83	85	36.17	235	100	
Intermediate	151	88.82	19	11.17	170	100	
Graduate/postgraduate	121	90.30	13	9.70	134	100	
Profession or Honors	5	100.00	0	0.00	5	100	
Type of Family							0.469
Nuclear	467	68.87	211	31.12	678	100	
Joint	211	66.35	107	33.64	318	100	

Correct practice*- Sanitary pad, Incorrect practice*- Cloth.

Table 5: Association of various sociodemographic profile as per their practice regarding frequency of changing pad.

Variables	How frequently you change pad during menstruation?						P value
	Correct practice*		Incorrect practice*		Total		
	Number	%	Number	%	Number	%	
Age in years							
10-12	49	30.43	112	69.57	161	100	0.28
13-15	147	33.71	289	66.28	436	100	
16-19	148	37.09	251	62.90	399	100	
Socio economic status							
Upper	12	41.37	17	58.62	29	100	<0.001
Upper middle	110	26.12	311	73.87	421	100	
Lower middle	127	40.18	189	59.81	316	100	
Upper lower	94	42.72	126	57.27	220	100	
Lower	1	10	9	90	10	100	
Mother's education							
Illiterate	90	38.62	143	61.37	233	100	0.056
Primary school	24	24.74	73	75.25	97	100	
Middle school	43	35.24	79	64.75	122	100	
High school	82	34.89	153	65.10	235	100	
Intermediate	48	28.23	122	71.76	170	100	
Graduate/Postgraduate	54	40.29	80	59.70	134	100	
Profession or Honours	3	60	2	40	5	100	
Type of Family							
Nuclear	234	34.51	444	65.48	678	100	0.221
Joint	110	34.59	208	65.40	318	100	

Correct practice*- 3 or more than 3 times, Incorrect practice*-Less than 3 times.

Table 6: Association of various sociodemographic variable as per their frequency of cleaning genitalia during menstruation.

Variables	How many times do you clean your genital area during menstruation?						P value
	Correct practice*		Incorrect practice*		Total		
	Number	%	Number	%	Number	%	
Age in years							
10-12	39	24.22	122	75.78	161	100	0.291
13-15	129	29.58	307	70.42	436	100	
16-19	123	30.82	276	69.17	399	100	
Socio economic status							
Upper	10	34.48	19	65.51	29	100	0.302
Upper middle	133	31.59	288	68.40	421	100	
Lower middle	93	29.43	223	70.56	316	100	
Upper lower	52	23.63	168	76.36	220	100	
Lower	3	30	7	70	10	100	
Mother's education							
Illiterate	64	27.46	169	72.53	233	100	0.004
Primary school	22	22.68	75	77.31	97	100	
Middle school	23	18.85	99	81.14	122	100	
High school	88	37.44	150	63.82	235	100	
Intermediate	49	28.82	121	71.17	170	100	
Graduate/Postgraduate	45	33.58	90	67.16	134	100	
Profession or Honors	3	60.00	2	40	5	100	
Type of family							
Nuclear	467	68.87	211	31.12	678	100	0.461
Joint	211	66.35	107	33.64	318	100	

Correct practice*- Two or more than two times. Incorrect practice*- Less than two times

The correct practice of changing pad (≥ 3 times) was maximum (37.09%) in age group 16-19 years and the proportion is decreasing with the age and found to be 30.43% in 10-12 years age group. Significant association was also found with socio economic status. It was found that 41.37% of female students who belong to upper class changed the pad ≥ 3 times a day during menstruation in contrast to the lower class in which this proportion was found to be 10% adopted the correct practice (Table 5).

Mother's education was significantly associated with the correct practice (2 times or more) of cleaning genitalia. This proportion came out to be 60% in daughters of professionally qualified mothers, however it was only 27.46% in participants whose mothers were illiterate. However age, socio economic status and type of family are not significantly associated (Table 6).

DISCUSSION

Present study comprises 996 adolescent girls (10-19 years) of class 6-12th studying in senior secondary schools of Jaipur city. Mean age of the participants was 15.13 ± 1.63 years which is similar to the study of Shanbhag et al, in which mean age was found to be 14.08 ± 1.06 years.¹⁰ In the present study maximum number of the participants (43.77%) were in age group 13-15 years similar to the study done by Zaidi et al, which showed majority of the respondents, (57.3%), were aged between 13-15 years.¹¹ 42.27% of participants were belonging to upper middle class while in study by Zaidi et al showed most of the participants (75.6%) belonged to upper lower class, this difference may be because their study comprised of students only from government school. In this study majority (23.59%) of the participants had their mother's educated till high school which was similar to the study done by Suhasini et al, in which 36% mothers have studied till high school followed by intermediate school (17.06%).¹² Participants whose mothers were graduates were 13.45%; less than one percent were having professional degree which is almost equal to the data of study by Suhasini et al in which graduate mothers and professional degree holder mothers had a proportion of 12.5% and 2% respectively. In the present study respondents living in nuclear family and joint family are 68.07% and 31.92% respectively similar to the study done by Ishita et al, in which respondents living in nuclear family and joint family were 69.07% and 30.3% respectively.¹³

In the present study 80.72% participants were having prior knowledge about menstruation before their menarche which was supported by the study done by Dixit et al, who reported that majority of the girls (86%) knew about menstruation before menarche occurred.¹⁴ In contrast study done by Ester et al, in Rundu, Namibia all (100%) the girls had knowledge on menstruation before menarche.¹⁵ The difference may be due to attributed socio-demographic and cultural difference of the participants.

In the present study a significant association was found between the knowledge of menstruation before menarche and age, socio economic status as well as mother's education. Proportion of participants who had knowledge before menarche is higher in upper class (93.10%) whereas in lower class it is only 40%. All (100%) the girls whose mothers were professionally qualified knew about menstruation before menarche, followed by graduates, while whose mothers are illiterate this proportion was only (64.38%). In contrast study done by Jagruti, concluded that mother's education and knowledge regarding menstruation before menarche was not significant.¹⁶

The present study concluded that the proportion of participants using sanitary pad as absorbent was increasing with age and was maximum (73.68%) among 16-19 years age group and minimum in 10-12 years of age (63.35%). This difference was found to be significant. All the participants (100%) of upper class (2.9%) used sanitary pad while 30% participants of lower class used sanitary pad. All (100%) those female students whose mothers were professionally qualified used sanitary pad, while only 55.36% used sanitary pads whose mothers were illiterate. Almost three fourth of the participants from private school use sanitary pad while 59.15% participants from government school uses sanitary pad which was supported by the study done by Manohar et al, who concluded that 58.82% from the private school and 56 percent from the Government school were using disposable sanitary pads.¹⁷ Hence, significant association was found between correct practice of absorbent used with socio economic status, mother's education and type of schools of the participants. Study done by Teketo et al, concluded that Girls from literate families were more likely to use sanitary napkins than their counterparts who were from illiterate family.¹⁸ Girls from families having better socio economic status were more likely to use sanitary napkins than their counterparts. These findings were supporting the present study.

In the present study the correct practice of changing pad (3 or more than 3 times a day) was maximum (37.09%) in age group 16-19 years and the proportion is decreasing with the age and found to be 30.43% in 10-12 years age group. This association was found to be significant and is supported by the study done by Omidvar et al, who found significant association between number of pads used per day and the age of the participants, also hygienic practice was significantly associated with age ($p=0.026$).¹⁹ In present study, also significant association was found with socio economic status. It was found that 41.37% of female students who belong to upper class had who follow the correct practice of frequency of changing pad during menstruation in contrast to the lower class in which only 10% adopted the correct practice. Proportion of participants with correct practice of changing pad is increasing with mother's literacy status which is well supported by the study done by Goel et al, who

concluded that association was found between frequency of change of soakage material and socio-demographic determinants and concluded that statistically significant association was observed between frequency of change of soakage material and age ($p=0.012$), mother's literacy status ($p=0.050$).²⁰

In this study mother's education was significantly associated with the correct practice (2 or more than 2 times) of cleaning genitalia. This proportion came out to be 60% in daughters of professionally qualified mothers, however it was only 27.46% in participants whose mothers were illiterate. However age, socio economic status, type of family are not significantly associated.

CONCLUSION

In this study it is concluded that mother's education status and socio economic status are significant predictors of good menstrual hygienic practices. Hence, improving mother's knowledge on menstrual hygiene management and social marketing of good quality, low cost sanitary napkins can go a long way in improving menstrual hygiene practices.

It is very important that adolescent girls should be educated about the importance of maintaining hygiene during menstruation to prevent risk of reproductive tract infections. Taboos should be removed by healthy discussion.

ACKNOWLEDGEMENTS

The authors sincerely thanks the staff of the schools involved in the study for their co-operation.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. WHO Adolescent health, 2018. Available at: www.who.int/topics/adolescent_health/en. Accessed on 18 April 2018.
2. Census of India Government of India, Ministry of Home Affairs, Office of the Registrar General and Census Commissioner, India, 2011. Accessed 10 March 2018.
3. World Health Organization, Programming for adolescent health and development, WHO Tech Rep Ser No.1996:2.
4. Ray S, Dasgupta A. Determinants of Menstrual Hygiene Among Adolescent Girls: A Multivariate Analysis. National J Community Med. 2012;3(2):294-301.
5. Thakre SB, Thakre SS, Reddy M, Rath N, Pathak K, Ughade S. Menstrual Hygiene: Knowledge and Practice among Adolescent School Girls of Saoner, Nagpur District. J Clin Diagnos Res. 2011;5(5):1027-33.
6. Jacob A. A Comprehensive Textbook of Midwifery. 2nd Ed. New Delhi; 2008: 63.
7. House. S, Mahon T, Cavill S. Menstrual Hygiene Matters: A Resource for Improving Menstrual Hygiene Around the World Wateraid. Taylor & Francis, Ltd; 2012;21(41):257-9.
8. Kamaljit K, Arora B, Singh KG, Neki NS. Social Beliefs and Practices associated with Menstrual Hygiene among Adolescent Girls of Amritsar, Punjab, India. JIMSA. 2012;25(2):69-70.
9. Verma P, Ahmad S, Srivastava RK. Knowledge and Practices about menstrual hygiene among higher secondary school girls. Indian J Community Health. 2013;25(3):265-71.
10. Shanbhag D, Shilpa R, D'Souza N, Josephine P, Singh J, Goud BR. Perceptions regarding menstruation and Practices during menstrual cycles among high school going adolescent girls in resource limited settings around Bangalore city, Karnataka, India. Int J Collab Res Intern Med Public Health. 2012;4(7):1353-62.
11. Zaidi SHN, Sivakami A, Jegadeesh Ramasamy D. Menstrual hygiene and sanitation practices among adolescent school going girls: a study from a South Indian town. Int J Community Med Public Health. 2015;2(2):189-94.
12. Kanyadi S, Metgud C. Factors Influencing Menstrual Hygiene Practice Among Late Adolescent Girls in an Urban Area of Belgaum. Ann Community Health. 2017;4(4):20-4.
13. Sarkar I, Dobe M, Dasgupta A, Basu R, Shahbabu B. Determinants of menstrual hygiene among school going adolescent girls in a rural area of West Bengal. J Family Med Prim Care. 2017;6(3):583-8.
14. Dixit S, Raghunath D, Rokade R, Nawaz SA, Nagdeve T, Goyal I. Awareness about Menstruation and Menstrual Hygiene Practices among Adolescent Girls in Central India. Ntl J Community Med. 2016;7(6):468-73.
15. Kandjimi E, Aku-Akai L. Menstrual Hygiene and School Attendance among Adolescent School Girls in Rundu. Ann Community Med Pract. 2018;4(2):1036.
16. Prajapati J, Patel R. Menstrual hygiene among adolescent girls: A cross sectional study in urban community of Gandhinagar. JMR. 2015;1(4):122-5.
17. Sharma M, Johal KK, Malhotra V. To study the knowledge, attitude and practice regarding menstrual hygiene and restrictions imposed upon them during menstruation in Adolescent girls studying in a government and a private school in Sahibzada Ajit Singh Nagar (Mohali City) In Punjab; A comparison Pilot Study. IOSR-JDMS. 2017;16(8):30-7.
18. Tegegne TK, Sisay MM. Menstrual hygiene management and school absenteeism among female adolescent students in Northeast Ethiopia. BMC Public Health. 2014;14(1):1-14.

19. Omidvar S, Begum K. Factors influencing hygienic practices during menses among girls from south India- A cross sectional study. *Int J Collab Res Intern Med Public Health*. 2010;2(12):411-23.
20. Goel P, Kumar R, Meena GS, Garg S. Association of sociodemographic characteristics with KAP regarding menstrual hygiene among women in an urban area in Delhi. *Trop J Obstet Gynaecol*. 2018;35(2):158-64.

Cite this article as: Sharma N, Shekhawat R. Association of various socio demographic factors with knowledge and practice regarding menstrual hygiene among school going adolescent girls of Jaipur city. *Int J Community Med Public Health* 2019;6:2808-15.