

**A STUDY OF ADOLESCENCE KNOWLEDGE, MYTH ABOUT MENSTRUATION AMONG GOVERNMENT AND PRIVATE HIGHER SECONDARY STUDENTS OF COIMBATORE****Dr. M. Srihari*, Ms. M. Monisha, Ms. S.p. Kirthana**

* M.A., Ph.D. Assistant Professor, Dept. of Communication and Media Studies Bharathiar University, Coimbatore, India

M.A., Research Assistant, Bharathiar University, Coimbatore

M.A., Field Investigator, Bharathiar University, Coimbatore

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DOI: 10.5281/zenodo.4059481**KEYWORDS:** Knowledge Of Menstruation, Knowledge Of Menstrual Cycle, Knowledge Of Menstrual Myth, Knowledge On Menstrual Hygiene.**ABSTRACT**

Adolescence is a bridge between childhood and adulthood (10–19 years) (World Health Organization), the word adolescence derived from Latin, "Adolescere," means "to grow up". Adolescence with increased psychic drive associated with sexual instinct, biological maturation, impulsiveness, low tolerance, frustration, and continuous self-gratification demands, communication on girls' reproductive systems and policies on health care to be built in a robust educational structure to understand the normal biological process. The health communication programs regarding girl adolescents and menstrual education produce long-lasting effects for the individual, public health, and various habits. This stage is of rapid physical growth, hormonal changes, intellectual development, increasing analytic competence, emotional growth, a time of self-exploration, increasing independence, and dynamic participation changes associated with the biological process.

INTRODUCTION

Adolescence is a bridge between childhood and adulthood (10–19 years) (World Health Organization), the word adolescence derived from Latin, "Adolescere," means "to grow up". Adolescence with increased psychic drive associated with sexual instinct, biological maturation, impulsiveness, low tolerance, frustration, and continuous self-gratification demands, communication on girls' reproductive systems and policies on health care to be built in a robust educational structure to understand the normal biological process. The health communication programs regarding girl adolescents and menstrual education produce long-lasting effects for the individual, public health, and various habits. This stage is of rapid physical growth, hormonal changes, intellectual development, increasing analytic competence, emotional growth, a time of self-exploration, increasing independence, and dynamic participation changes associated with the biological process.

Thus, scientific communication plays a lead role in delivering information to the benefit of people who are subdued or stereotyped by society's cultural and religious myths. It becomes essential in building a strong structure of health communication to influence individuals and the communities in menstrual-related information. Menstruation (menarche) is a unique phenomenon to the females [1], which occurs between 11 and 15 years [2] for every growing young girl. But still, menstruation has often been associated with the degree of suffering and embarrassment by society. Almost every woman does experience one or the other type of menstrual problem in her lifetime. The menstrual disorders may range from amenorrhea, irregular cycles, and abnormal flow to dysmenorrhoea and premenstrual symptoms. Dysmenorrhoea is the commonest gynaecological disorder among women, with a prevalence of 60% to 93% [3]. Dysmenorrhoea is pain perceived before or during menstruation, confined to lower abdomen, back and thighs, and of varying severity, ranging from mild, moderate to severe. [4]. The prevalence of menstrual disorders has been recorded as high as (87 %) [5]. Health Communication in menstruation has a multidimensional and multidisciplinary approach to reach the different audiences in engaging the familiar people to improve the menstrual health care with social acceptance (60%) of them missed school on account of menstruation, (79%) felt low in confidence, (44%) were embarrassed, and humiliated over restrictions



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followed during menstruation. It adversely impacts women's education, equality, and maternal health. Menstruation is still regarded as something unclean or dirty in Indian society [6].

Although menstruation is a natural process, it is linked with several misconceptions and practices, which sometimes result in adverse health outcomes [7]. This leads to a lack of proper information regarding menstrual hygiene [8]. A 'culture of silence' [9] has prevailed, resulting from the long-standing taboo attached to menstruation and menstrual hygiene practices in India. Adolescent girlhood is a critical time of identity formation, and a period of transition from childhood to womanhood [10], also it is of great challenge to the parents, for the upbringing of the adolescent child. Adolescent menstrual hygiene and self-care are critical issues that determine the health status of the adolescent and the eventual practices inculcated into adult life [11]. Menstruation is a natural monthly process in a healthy adolescent girl's body with the onset occurring anytime between the ages of 8 and 16 and lasting till menopause. A healthy woman menstruates for approximately 3000 days in an average lifetime.

Despite adolescents being a considerable segment of the population, India's policies and programs haven't focused much on the growing group, which has proliferated the social stigma and taboos on menstruation, creating a negative outcome. Thus the challenge, of addressing the socio-cultural restrictions and beliefs in menstruation, is further compounded by the fact the girls' knowledge levels and understandings of puberty, menstruation, and reproductive health are very low [12, 13]. They receive information from friends, peers, TV/Video, magazines, and other print media, and rarely get information from teachers and medical personnel. This scenario results in unhygienic menstrual hygiene practices and different undesirable health outcomes. Cultural and social influences appear to be a hurdle for the advancement of knowledge on menstruation, [14] in India even mere mention of the topic has been a taboo. Communication plays a supportive role, which assists the core development efforts, raises awareness of socio-structural problems, and promotes self-reflection among marginalized and disadvantaged populations [15].

"Many are not aware of their own body and the menstrual cycle. Teaching menstrual health to adolescents is as important as education," said Mr. Muruganatham [16] Padma Shri winner, social entrepreneur, and who revolutionized menstrual health for rural women in developing countries inventing the simple machine for low-cost sanitary pad-making from southern India.

STATEMENT OF RESEARCH PROBLEM

The evolution from being a child to an adult depends upon one's parenting that he/ she should be an independent and self-reliant. The adolescent transition is one of the most dynamic, broad, and influential periods of human development. However, despite adolescents being a vast segment of the population, India's policies and programs focused on the adolescent group are very modest. Discouraged, that menstrual hygiene is a significant risk factor for Reproductive Tract Infections (RTI) and is a vital aspect of health education for adolescent girls [17]. Knowledgeable parents, motivated school teachers, educational television programs, trained school nurses/health personnel, and advertisements about sanitary napkins with the correct information can play a vital role in transmitting the essential message of proper menstrual hygiene to the girls of young age.

The lack of diffusion of information through proper communication channels results in the lack of interactivity, and thus, the girls stay ignorant of their body functions. The absence of interpersonal communication between the adolescent's mother and teachers often leads to misleading and misguiding information. Effectively communicating and educating the girls on health and safe menstrual practices can spread awareness among them regarding their menstruation's false beliefs. Gaining knowledge regarding this particular issue can result in building a positive attitude and adopting safe menstrual activities.

NEED FOR THE STUDY

This study focuses on health communication for adolescence and menstruation. Development communication approaches believe that successful development rests on the active participation of the population. The traditional Indian society regards talk on such topics as taboo and discourage open discussion on these issues. Need to provide education and equip the younger generation with skills regarding safe and healthy hygienic practices and make appropriate choices so that the girls can lead a healthy reproductive life and prevent the risk for Reproductive



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Tract Infections (RTI). Improving adolescent girls' reproductive health can only occur by communicating and educating by promoting healthy behaviours among them. Hence, there is a need to study and identify the lacunae in their awareness levels and overcome them through effective communication strategies.

OBJECTIVES

To examine the issues and challenges of menstruation encountered by the adolescent girls among the government and private school students

To assess the knowledge on menstruation among adolescent girls among the government and private school students

BACKGROUND OF STUDY

A. KNOWLEDGE OF MENSTRUATION

Menstruation is a normal physiologic process, but it carries various meanings within cultures, which is not discussed amongst families and communities. Menstruation is a normal process of womanhood, but there is a need for a behavioural change to develop the right attitude, belief, and practice for safeguarding their menstrual health. It is reported that the way females see menstruation reacts to their body image, gender identity, self-acceptance, symptoms attribution, sexual and health behaviour [18]. Generally, women dislike menstruation because of the related symptoms, such as uneasiness, tolerance at the sight of blood flow, and the relatively restricted performances. Dysmenorrheic females can perceive the changes that ensure they are aware of the menstrual beginning during the pre-menstrual time. The biological process of menstruation is that physiologically, the hypothalamus produces growth hormone and gonadotropins, which initiate pubertal changes. Menstruation, the periodic vaginal bleeding that occurs with the uterine mucosa's coming off, is one of the signs of puberty and occurs one or two year's subsequent formation of secondary sexual characteristics [19].

Cultural norms and religious taboos on menstruation are often compounded by traditional associations with evil spirits, shame and embarrassment surrounding sexual reproduction [20]. In some cultures, women bury their cloths used during menstruation to prevent them being used by evil spirits [21]. Girls fear that there is a substantial blood loss during menses, but only two teaspoons of blood come out of the body with mucus tissues. Better access to information, effective communication, education, and knowledge would stimulant for development. Thus, it is becoming clear that multi-sectoral approaches are needed. We need to link physical infrastructure and water and sanitation projects to health education and reproductive health programs and address the issue in more holistic ways [22].

The girls are often affected by tales, taboos, superstitions, and myths that profoundly affect them during the years of menstruation. The menstruating women are often discouraged and restricted from outdoor activities, going to school, and are made to stay at home either temporarily or permanently after attaining puberty. Attaining puberty is considered one of the significant reasons for school dropouts among girls in many places around India, hindering development and empowerment. Similar restrictions for menstruating girls are surmised in the studies [23]. It was found that girls restrict themselves from taking a bath, believing that it would increase the menstrual bleeding. Girls reported that their mothers and relatives recommend them not to take a bath during menstruation. But to take a shower regularly and stay hygienic during the days of menstruation will keep them healthier.

The girls are surrounded by traditional, cultural, and religious myths about puberty and menstruation, making them very hard to come out of it. While examining other restrictions and practices of Nepali women, [24] mentioned that most girls always sleep in a separate room during menstruation. Also found similar findings that women are made to sit in the corner of the room or separate rooms away from their houses when they menstruate [25]. The researchers highlight the immediate need for effective interventions to address the restrictions which are practiced by the adolescent girls.

Their lack of awareness regarding the reproductive organs was confirmed in study [26], where the girls believed that the menstrual blood emanates from the abdomen, intestines, and kidneys. The girls also stay ignorant of the biological, physiological, and natural function of their bodies. These kinds of restrictions are still prevalent in



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certain parts of the country, leading to a negative attitude among the girls and making them feel like a weaker gender. Adolescent girls are bound to experience ignorance, false perceptions, and unsafe practices regarding menstruation. Many other restrictions like watering the plants, touching animals, avoiding eating non-veg food, and attending religious rituals are observed in the studies [27].

B. KNOWLEDGE OF MENSTRUAL CYCLE

Menstruation is a natural process of the female reproductive cycle in which periodic discharge of blood from the uterus that exits through the vagina. Puberty is a phase of growth and development in which significant cognitive, psychological, and physical changes occur. For females, menarche is one of the most memorable and important moments of adolescence. It represents a transition from childhood to adulthood, and this transition can also be full of anxiety for the early adolescent [28]. During a menstrual period, a woman bleeds from her uterus via the vagina. The menstrual rhythm lies upon the uterine contraction. Geographical conditions, racial factors, nutritional standards, environmental influences, and extravagance in severe physical activity can all affect menarche's age [29]. The girls should be educated about menstruation's relevance and development of secondary sexual characteristics, choice of a sanitary menstrual absorbent, and its proper disposal. Every girl should be conscious of the fact that a healthy menstrual cycle happens once in 21-35 days. But many girls do not have the habit of tracking their monthly menstrual cycle, which is essential for any gynecological related issues.

In the studies of [30, 31], it was deduced that most of the respondents are aware of the average duration of the menstrual cycle and the process of menstruation. But in contrast to the above finding, the studies of [32, 33, 34] revealed that a majority of the respondents were not aware of menstruation before their menarche and lacked the conceptual clarity about the process of menstruation due to which they faced several gynecological problems. Remarkably few respondents only distinguished the changes in their bodies as a result of hormones. Fewer respondents know the correct duration of the monthly menstrual cycle, observed [35, 36] also noted similar results in their study that the girls do not have explicit knowledge about menstrual blood's origin. This shows that the girls have only a minimum experience regarding menstruation and the menstrual cycle since they are not informed much and are restricted from having open talks about menstruation.

C. KNOWLEDGE OF MENSTRUAL MYTH

Women's explanation of the physiological and hormonal changes connected with menstruation cannot be understood outside of the social circumstances in which they live. It is influenced by the meaning attributed to the menstrual changes that we face now by westernized medical discourses [37]. Throughout history, a woman's status and social role are seen as a curse as the only reason that they bleed and not applicable to come out and be bold to tackle their lives in society. All women had to tolerate or suffer throughout their lives until they undergo the term called menstruation [38]. Menstruation is considered madness and depletion, which has got a framework for women to understand their menstruation changes as a medicinal symptom [39]. For years, both medicine and religion have systematically undervalued females' roles and excluded women from power in society through maternal beliefs about the female reproductive body [40]. It is yet evident in many cultures and religions today.

It is accepted that all over the world women are emboldened by culture and religion to avoid few activities such as cooking, working, praying, playing, participating in sporty events and having sexual intercourse while menstruating, as they are considered to be in a state of uncleanness [41]. Menstruation is regarded as something in which women should always be cautious [42]. These restrictions during periods and the secrecy surrounding menstruation may have a severe impact negatively on womanhood by effectively invading the women's psychological, physiological damages. It degrades the self-image and affects every woman; it's because society creates a feeling of shame and fear of menstruation [43].

D. KNOWLEDGE ON MENSTRUAL HYGIENE

The menstrual hygiene is insufficiently acknowledged in Millennium Development Goals (MDGs) that many girls drop out of school due to the lack of proper hygiene facilities such as sufficient supply of clean water, adequate toilet facilities, and amenities to change and dispose of the used pads [44]. These are considered the main reasons girls leave school temporarily or permanently once they reach puberty. Twenty-eight lakh adolescent girls in Uttar Pradesh miss school every month while around nineteen lakh quit their education after attaining puberty [45].



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Lack of proper clean toilets forces the girls to remain in the soaked sanitary pads for more extended periods, making them vulnerable to urinary tract infection, virginites, and pelvic inflammatory diseases. Adolescence is often perceived as a stage of opportunities for the growing risk of unhygienic practices, which can be life-threatening in most cases.

E. KNOWLEDGE ON MENSTRUAL CARE

As the teens grow up, they face all problems, both physically and mentally. The most commonly experienced problems include anxiety, depression, and pain. Myths and mysteries have long enveloped the truth about menstruation. Menstrual disorders and menstruation-related issues are observed among many girls. Survey on menstrual hygiene in the Tehran suburbs; found that many students suffered from dysmenorrhea and most of them self-medicate without consulting a doctor [46]. Similar findings from their participants that they commonly experienced one or other type of menstrual problems in their lifetime such as menstrual disorders, excessive bleeding, severe abdominal pain, etc [47]. Self-medication was also not uncommon among the participants.

But menstrupedia.com discusses that the menstruating girl is free to do her usual work until she feels uncomfortable about doing it. There are no restrictions in doing their regular jobs and essential exercise such as walking, which can minimize menstrual cramps. Therefore, it becomes crucial to educate the young girls in schools about the importance of physical activities and consult a doctor for their menstrual problems. "Taking fear and misinformation out of the menstruation equation can only lead to a healthier society, not only for girls and women, but also for the men who will one day be their husbands and sons", [48] - Menstrupedia comic book

India's government has formulated the ARSH strategy (adolescent and sexual health), under the RCH II program that is implemented to increase awareness among adolescents about sexual health. The service includes preventive, curative, and counseling services. Under this program, adolescent health clinics have been established at all levels of health care, and staffs is sensitized to adolescents' health needs [49]. Adolescent age should be considered as specific and special attention should be given to the girls [50]. This evolution makes them vulnerable to several problems like psychosocial problems, general and reproductive health problems, and sexuality-related problems. Healthy interpersonal communication acts as a connection between parent and child's intimate relationship or a teacher and student.

Similarly, Health education programs on menstruation, according [51], can make positive changes in the girls' lives. Apart from interpersonal communication, interventional education programs also proved to be more effective in educating girls. The best form of development is self-management, and thus when knowledge is imparted to the adolescent girls through proper communication channels, they will have the ability to manage their menstrual cycle more efficiently and develop a positive attitude towards their life [52].

F. REACTIONS TO THE MENSTRUATION OF THE GIRL/WOMAN HERSELF

Menarche is observed as a traumatic event by some girls who are ashamed of menstrual bleeding and something unclean. 'A girl's reaction to her first menstruation was thought to be a model for menstrual results. As described earlier, a mother's responses to menstruation are also critical. Some girls almost inherit dysmenorrhea the mother suffered, so does the daughter. The period hurts; she resents it, which burns more. The affected women are usually hypersensitive to pain and exhibit personality disorders [53]. But how does a woman judge her menstrual loss to be healthy or more substantial than usual? Here too, their action of the woman is of prime importance. Most women do not have any idea regarding what is considered normal. What they do understand is the untimely messiness and stickiness involved with menstruation.

G. DISPOSAL OF SANITARY PADS

The study, mentioned that girls are not aware of the appropriate disposal ways and so they dispose of the pads in a way that is comfortable and easy for them [54]. Similar study conducted in Nepal, found that (94%) of the girls use sanitary napkins, but only (11.3%) dispose of it [55]. That widely held girls have poor menstrual management, and only (3%) reported the proper ways of disposing of their used pads and clothes [56]. Sewage backups, quick fill of pit latrines, and water pollution are prevalent as a result of improper menstruation product disposal is essential to be noticed.



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Girls have the habit of flushing the used pads in toilets in case of emergency and incidents when dustbins are not available. In such cases, a quick fill of latrines is highly possible, and this practice exists. Around 28% of the girls flush the sanitary materials in toilets or hide it in a separate place because they are ashamed of taking it outside and putting in the dustbin [57]. Inadequate clean and hygienic toilet facilities at home, school, and community result in poor menstrual management.

UNICEF also stresses school toilets' importance to be built with proper washing facilities and correct disposal features for removing the menstrual pads [58]. The modern disposal method of menstrual hygiene products like incinerators which are not affordable by every family is a significant drawback. Conventional disposal methods are burying, burning, throwing it in the waste bin, other wastes, wrapping it in a paper and throwing it in the dustbin, throwing it on the roadside, or flushing it in the toilets [59].

Studies on menstrual hygiene and practice-related topics reveal that the most significant barrier of using Sanitary Napkin is its high cost. In a survey resulted that around (70%) of women in India reported they could not afford to buy pads [60]. Union Health Ministry was launched in 2012 to increase access, affordability, and use of Sanitary Napkins among adolescent girls, especially in rural areas. Under this scheme, the packs which contained six pads are provided to Below Poverty Line (BPL) girls, which costs Rs 1 per pack. Girls in the Above Poverty Line (APL) category must pay Rs 6 per pack of sanitary napkins, which is again very nominal. Accredited Social Health Activists (ASHA) and Auxiliary Nurses and Midwives (ANM) of NRHM are also taking steps to get better menstrual hygiene like free distribution of sanitary napkins to adolescent girls specially focused in rural areas. If cost matters much in buying the pads, then the government should provide low-cost or free pads for women's safety.

This situation should have been enhanced, but few studies' data are not reflecting in the same results. Half of the Indian women are predominantly neglected, relating to their gender-specific needs. A woman spends 2100 days of her life menstruating, but the ease of access and affordability of the menstrual products lacks mainly, which restricts women's flexibility and affects adolescent girls' and women's development. The problem is that many women have not seen the sanitary napkins as they are not aware of how to use it and the purpose of it [61]. If the product is produced or manufactured through women entrepreneurs, there will be no need to make any special efforts to create awareness among people to use the product [62] menstrual flow is blood and tissue comes from the endometrium or lining of the uterus.

F. RESTRICTIONS PRACTICED

In many parts of the world, menstruation is submerged in silence, myths, taboos, and even stigma. In South Asian countries, a range of restrictions, regarding food, school attendance, household chores, and social events, are placed on menstruating women and girls [63]. It is surrounded by taboos, myths, misconceptions, superstitions, and restrictions. Girls are made to follow several limitations from the day they attain puberty. Specific communities follow a tradition of celebrating the pubertal function as a grand ritual.

The study of 'knowledge and practices related to menstruation among tribal Gujjar adolescent girls' [64] revealed that all the tribal adolescent respondents believed that worship is not acceptable during menstruation. The study also revealed that the menstruating girl is restricted from passing through the roads to fear that they will be caught by evil spirits and become mad eventually. When interacting with the adolescent girls, found that girls restrict the intake of some foods like fish, meat, milk, egg, and sour foods during menstruation since they believe that it will cause health-related problems [65]. Girls avoid going to places like banks of the river, ponds, cowshed, etc. since it's thought that it will cause heavy bleeding.

Those who participate in culture are often unaware of the discourses surrounding them and how they have been constructed [66]. Similarly, the girls are unaware of why they avoid doing their routine work once they reach puberty. The scientific facts behind the restrictions need to be taught to the girls before they are asked to follow those. This will make them build self-reliance and lead a healthy reproductive life.



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Reproductive or biological and menstrual health and hygiene should be included in the school curriculum and taught for both genders. Teachers very rarely talk and guide the girls about their natural process, menstrual health, and hygiene. The educational or co-curricular program for teachers, parents, and students should be conducted in every school, and social NGO's must do in public places or specified areas regarding adolescent growth. They should also be school counsellors for the betterment of students. Mothers play a preeminent role in the teenage girl's age. They should be an essential part of all adolescent health programs, especially on menstrual hygiene and sanitation.

Teachers should teach menstrual hygiene and self-care practice guides, which can be easily practicable at home. Steps should be taken to improve female literacy so these future mothers will give correct information to their daughters regarding menstruation [67]. Constant use of unclean cloth and improper drying of used fabric before its reuse results in concealed microorganisms that spread the vaginal infections among adolescent girls [68]. The health struggle and difficulties result from incorrect and incomplete information provided to the girls through limited sources.

RESEARCH METHODOLOGY

The study is focused on the understanding of menstrual awareness, health, and hygiene. It has health impacts in terms of increased vulnerability to the reproduction, and it also plays a vital role in the psychological aspects of building a healthy or low esteemed image. Therefore girls should be educated about menstruation; the need for a positive attitude towards the period of menarche and healthy menstrual practices right from childhood and health education programs should be instituted comprehensively in schools.

A structured self-administered questionnaire was designed to understand the level of communication regarding menstruation, the medium they adopt for gaining knowledge, the practices they follow during menstruation, restrictions practiced, nutrient food they eat, sanitation facilities at schools, etc. ten rural and ten urban, ten private and ten government schools were selected at Coimbatore district. Purposive sampling was used in this study. Two thousand eight respondents were selected out of 2050, who filled all the answers. Improper, unfilled 42 questionnaire sheets were rejected.

B. STAGES OF RESEARCH

The knowledge questions about the source of information, awareness of the menstrual process, and their knowledge of the cultural myths related to taboos, food habits, consciousness regarding menstrual disorders, and hygienic activities were considered the parameters.

C. SAMPLE SELECTION

Non-probability purposive sampling is used to select samples for the study and adolescent school girls of Coimbatore city form the sampling frame. The city was chosen because it is one of the fastest-growing tier-II cities in India with major educational infrastructure, cultural hub, healthcare, and manufacturing hub of Tamil Nadu. The study covered adolescent girls' cross-section from the government-based schools and private-based schools of Coimbatore.

D. TOOLS FOR DATA COLLECTION

The research employed both quantitative and qualitative methods. Both open-ended and closed-ended questions were used during the survey. In-depth personal interviews and phone interview schedules were conducted in the study.

ANALYSIS, INTERPRETATION AND DISCUSSION

Table. 4.1 The following table contains the results of knowledge statements regarding MenstruationN-2008, G- Government Schools-974, P-Private Schools 1034 (Type of School) Girls Sch- Girls School-915, Co-Edu-Co Education -1093 (System of education)



S.no	Statements	Yes/No/NI	G	P	Girls Sch	Co-Edu	df	Chi-Square
1	a. Do you know about the first menstruation	Yes	20%	33%	21%	31%	2	0.000
		No	61%	48%	64%	46%		
		NI	19%	20%	15%	23%		
2	b. Whether you were informed in advance about the menstruation	Yes	17%	34%	23%	28%	2	0.008
		No	63%	56%	63%	56%		
		NI	19%	11%	14%	16%		
3	c. Has anyone discussed about menstruation with you	Yes	19%	40%	24%	34%	1	0.000
		No	81%	60%	76%	66%		
4	d. Are you aware that when you don't maintain hygiene during your periods it will lead to the Reproductive Tract Infections (RTI)	Yes	5%	22%	7%	19%	2	0.000
		No	69%	51%	65%	55%		
		NI	26%	27%	28%	26%		
5	e. Even when the bleeding is less, the girls should change the pads at regular intervals	Yes	30%	45%	35%	40%	2	0.000
		No	52%	33%	48%	38%		
		NI	18%	22%	17%	23%		
6	f. Girls can remain with soaked pads for more than 8 hours	Yes	51%	29%	50%	31%	2	0.000
		No	21%	51%	26%	45%		
		NI	28%	20%	24%	24%		
7	g. Do you know the name of sanitary pad called Puthuyugam (Pads Issued freely by government of Tamil Nadu every month).	Yes	51%	18%	43%	27%	2	0.000
		No	49%	82%	57%	73%		
8	h. The growth of Secondary sexual characteristics is normal when girls attend their puberty	Yes	24%	44%	29%	38%	2	0.000
		No	47%	31%	42%	36%		
		NI	29%	25%	29%	25%		
9	I. Whether the knowledge was given about good and bad touches	Yes	80%	78%	86%	73%	1	0.288
		No	20%	22%	14%	27%		
10	j. Do girls suffer due to their ignorance of the hygienic requirement during menstruation	Yes	39%	43%	43%	40%	2	0.071
		No	36%	32%	38%	31%		
		NI	25%	24%	20%	29%		

It has been observed from the above table that the knowledge regarding the menarche (first menstruation) only (20%) of the Government Girl students, (33%) of the Private school students, of which (21%) Girls school Students and (31%) of the Co-education school girl students are not aware of the first menarche. Narayan et al. (2001) studied the puberty rituals, reproductive knowledge, and health of adolescent girls, deducing that teenage girls are not prepared for their first menstruation.

Information about menses in advance is known to only known to (17%) of Government Girls Students, (34%) of the Private School Students, in which (23%) of the Girls school Students and (28%) Co-education students were



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not aware of the menses. The chi-square value (.008) proves there is a significant difference between the type of school and system of education. The majority of the school-going adolescent girls are not aware of the fundamental facts of menstruation and puberty.

The discussion about menstruation with their daughters is only (19%) of Government School students, and (24%) in the Girls School education has a formally interacted about menstruation. (34%) and (28%) in private and Co-education types schools have a minimal discussion on the topic. A study revealed that the girls learn about the pubertal and the development of secondary sexual characteristics by themselves through their bodily changes, and they are not informed about it by their elders [69]. Similar findings were observed in the studies [70], where it was found that the students are not aware of the reason behind the occurrence of menstruation and girls believe that it's a curse from God.

(81%) of Government Schools students, (60%) of Private school students, and of which (76%) Girls School education and (66%) Co-education type school have not discussed the physiological growth to their students is very clear from the chi-square value (.000) which is highly significant. The adolescence is not aware of the process of attaining their puberty. Parents should educate girls, how to manage the first menstrual period and make them understand the average cycle length of following menses [71]. This will be useful for them to know about their body and menstrual function. The chi-square value (.000) proves that there is a significant difference between the knowledge and type of school and system of education. From the results, it is understood respondents lack knowledge about the first menarche.

In Government school students only (5%) know about RTI and (22%) of Private schools Students, of which only (7%) of Girls School education and (19%) of Co-Education know about this infection. A major challenge facing women with RTIs in developing countries is limited access to health care for those infections.

(52%) of Government school students says that they shouldn't use the same napkin more than 8 hours as well as (33%) Private School students abide the same. In which (48%) of the Girls school education and (38%) co-education schools have agreed that napkins should not be used for more than six hours. Menstrual blood is filthy and wearing a sticky pad for a long time without changing is unhygienic. It can lead to diseases such as skin rashes, urinary tract infections, and vaginal infection [72].

Girls can remain with soaked pads is accepted by (51%) of Government school students and (29%) of the Private School Students of which (50%) of Girls School Education and (31%) of Co-education have accepted they can remain soaked for a more extended period. Students are afraid, and especially in Co-education types of school, fear of bullying by peers is the reason that they don't want to carry a napkin and walk in front of other peers [73]. (.000) highly significant results prove this.

The Government is issuing a sanitary napkin named 'pudhuyugam' to all the school students. They were (51%) of government school, and only (18%) of the private school students are aware of this napkin. The issue of these napkins is not reached many people in the city. There is a significant difference in knowing the name of this napkin as the chi-square value reflects (.000) highly significant. The knowledge of growing secondary sexual characteristics is known to only (24%) of Government School Students and (44%) of the Private school students, in which (29%) of (School for Girls) type and (38%) of Co-education type school students this indicate that girls lacked awareness about the basic anatomy and body functions. As (.000) is highly significant it is known that a student doesn't know about their physical growth.

Hence the Null Hypothesis Ho1(a)to(h): There will be no significant association between the knowledge of the respondents regarding (a to h) and their independent variables type of school and the system of education is tenable, and therefore the alternative hypothesis is accepted.

(a to h) knowledge regarding first menstruation, informed in advance, discussed menstruation, aware of Reproductive Tract Infections (RTI), remain with soaked pads for more than 8 hours, growth of secondary



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sexual characteristics is normal, change the pads at regular intervals, name of sanitary pad called Puthuyugam (Issued freely by the Government every month).

Thus, it can be inferred that the knowledge about the biological process should be given to the students before the menarche. This demonstrates the necessity and importance of communicating to the girls about the normal physiological process by proper health education before menarche so that they can understand their anatomy better.

The lack of communication about this topic is the reason that students do not know what is happening in their bodies. It is deduced that proper orientation should be provided to the girls for a better understanding of the basics of metabolic changes that occur to them. Only 13% of the girls in India are aware of menstruation before menarche [74], indicating a lack of empowerment and menstrual hygiene among adolescent girls. 60% of them missed school on account of menstruation, 79% felt low in confidence, 44% were embarrassed, and humiliated over restrictions followed during menstruation. It adversely impacts women's education, equality, and maternal health.

It is noted from the above table that the knowledge of good and bad touch is given to the students is high in percent. (80%) Government school students and (78%) Private school students of which, (86%) Girls school education and (73%) Co-education students can understand the good and bad touch. From the above results and chi-square value (.288), it has resulted that there is no significant difference between Government, Private school type and girls education and Co-education system of education. The State Council of Educational Research and Training (SCERT) has decided to introduce a dedicated chapter on Protection of Children from Sexual Offences (POCSO) Act for students of both Private and Government schools. The interactive sessions help the students to know the difference in touches, and speaking openly about these cases can reduce the fear of students and talk openly if they were affected.

Ignorance of the hygienic requirement during menstruation makes women suffer is accepted by (39%) of Government school students and (43%) private schools students of which (43%) Girls school system of education and (40%) Co-education indicates the requirement of increased knowledge about menstruation right from childhood can escalate safe practices and can help in mitigating the suffering of millions of women. The lack of knowledge, awareness, and due to the unhygienic practice leads to some poor personal hygienic practices during menstruation leading to many Reproductive Tract Infections [75] as the chi-square results reflect (.071) which is not significant. It is much needed to take care of hygiene requirements.

Hence the Null Hypothesis, Ho2 (i) & (j): There will be no significant association between the knowledge of the respondents regarding (I, j) and their independent variables type of school and the system of education. Therefore the null hypothesis is accepted.

(i) & (j) knowledge regarding good/ bad touches and sexual abuse, suffering due to ignorance of the hygienic requirement

Thus it can be inferred that the knowledge on good, bad touch and about sexual abuse is given to the students unveils health issues that affect their adjustment to reproductive life and provides the basis for formulating health education strategies relevant for this crucial period in reproductive life. The Government has initiatives on the intervention programs and campaigns to all school students regarding the difference in touches that have helped in gaining knowledge about sexual abuse.

Menstrual practices are still sheltered by socio-cultural restrictions resulting in adolescent girls remaining unaware or ignorant of the scientific facts and hygienic health practices, which sometimes result in opposing health outcomes [76]. Women are made to follow many restrictions and myths when they menstruate, which gives them a negative feeling towards menstruation. In many societies, though menstruation was celebrated as a developmental milestone, it also encompasses an element of secrecy [77]. These restrictions and the secrecy surrounding menstruation create a negative impact on womanhood by essentially assaulting the women



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psychologically, degrading their self-image and self-esteem, creating a feeling of shame, and undermining the physiological significance of menstruation [78].

The ignorance in taking care of hygiene-related practices during menstruation is of considerable importance for reproductive health since poor practices increase vulnerability to reproductive tract infections. Good hygienic practices, such as sanitary pads, changing the used pads at regular intervals, and adequate washing of the genital area, are essential during menstruation. Women and girls of reproductive age need access to clean and comfortable sanitary products, which will protect their health in the long run.

Girls require clean and secure places for them to change and dispose of the used pads. Gender - unfriendly schools, lack of adequate menstrual protection alternatives and clean, safe and private sanitation facilities for students and teachers, destabilizes the right of privacy and results in a fundamental infringement of the human rights of women [79].

Table 4.2 . The following table contains the results of knowledge statements regarding Menstrual cycle and the legal age of marriage

N-2008 G- Government School -974, P-Private School 1034, Girls Sch- Girls School-915, Co-Edu- Co Education School -1093

S.no	Statements	Options	G	P	Girls Sch	Co-Edu	df	Chi-Square
1	a. The organ from where the menstruation blood comes from.	Uterus	7%	11%	8%	10%	4	0.000
		Ovary	16%	13%	15%	14%		
		Stomach	38%	16%	35%	20%		
		Vagina	6%	7%	6%	7%		
		No idea	33%	52%	36%	49%		
2	b. What according to you is the normal duration of menstruation	2 days	37%	16%	28%	24%	3	0.000
		3-6 days	26%	34%	21%	38%		
		7-12 days	14%	17%	18%	13%		
		No idea	23%	33%	33%	24%		
3	c. What according to you is the duration of a regular menstrual cycle	15-27 days	28%	23%	24%	26%	4	0.000
		28-30 days	20%	28%	22%	26%		
		31-45 days	20%	9%	20%	9%		
		46-50 days	10%	6%	9%	7%		
		No Idea	23%	34%	24%	32%		
4	d. What is the legal age of marriage for women according to the Prohibition of Child Marriage Act (PCMA)	15 years	23%	10%	16%	16%	4	0.000
		16 years	25%	15%	24%	16%		
		17 years	13%	13%	14%	11%		
		18 years	11%	30%	16%	25%		
		No idea	29%	33%	30%	31%		

The above table results that the organ from where the menstruation blood comes from is the uterus [80] and it was only (7%) Government School Students and (11%) Private schools students in which (8%) girls system



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of school education and 10% of Co-education lack the knowledge about the organ. The menstrual bloodsheds from the uterus the uterine lining, which is also called the endometrium.

The student doesn't know about the organ and its functions during menstruation. The girls are also unaware of their anatomy. Their lack of awareness regarding the reproductive organs was confirmed in study, where the girls believed that the menstrual blood emanates from the abdomen, intestines, and kidneys [81]. The girls also stay ignorant of the biological, physiological, and natural function of their bodies. Fewer respondents know the correct duration of the monthly menstrual cycle [82].

The average duration of menstruation days is 3- 6 days, but only (26%) Government school students and (34%) Private school students of which, (21%) Girls system of education and (38%) Co-education was able to understand the average duration period. Findings contradicted the above results, which showed that about 97% of the samples are aware of menstruation's cause and reason and believed that it's a regular monthly cycle. When communication is active and information is disseminated through proper channels, the girls learn about their biological changes [82]. The bleeding days associated with menstruation usually lasts 3–6days. It can vary from light to moderate to heavy [83].

The average menstrual cycle is 28-30 days, (20%) Government School Students and (28%) Private Schools Students of which, (22%) Girls system of education and (26%) Co-education is not conscious of the fact that a healthy menstrual cycle happens once in 21-35 days. The studies of Bhudhagaonkar and Shinde, revealed that a majority of the respondents were not aware of menstruation before their menarche and lacked the conceptual clarity about the process of menstruation due to which they faced several gynecological problems [84].

According to the Prohibition of Child Marriage Act (PCMA), the legal age of marriage for women is 18 years. It is known (11%) Government School students and (30%) Private school students of which, (16%) Girls school system of education and (25%) Co-education are unaware the legal age of marriage.

Hence the Null Hypothesis, Ho3 (a) to (d) There will be no significant association between the knowledge of the respondents regarding (a to d) and their independent variables type of school, and the system of education is not accepted and therefore the alternative hypothesis is accepted.

(a to d) an organ from where menstrual blood comes, the average duration of menstruation, regular menstrual cycle, the legal age of marriage according to Prohibition of Child Marriage Act (PCMA).

Thus it can be inferred that the organ from where the blood comes from is not known to the students. They are not aware of the menstrual process. When the researcher interacted with the students, they responded the blood comes from the stomach. Thus it shows they should be taught about the process too. The respondent was not clear about the menstruation days and the duration of the menstrual cycle. This shows that the girls have only a minimum knowledge regarding menstruation and the menstrual cycle since they are not informed much and are restricted from having open talks about menstruation. The girls' low awareness regarding the menstrual cycle duration and the menstrual blood flow reveals that the girls also pay very little attention to their body changes. The girls are least conscious about the cycle, which they experience every month. Only when the girls have an explicit knowledge regarding their menstrual cycle can they be cognitive while facing menstrual disorders and consult required medical experts. The girls who lack the conceptual clarity regarding menstrual disorders generally stay oblivious, and it can also be life-threatening at later stages.

Table 4.3 The following table contains the results of knowledge statements regarding the usage of the correct absorbent.

N-2008 G- Government -974, P-Private 1034, Girls Sch- Girls School-915, Co-Edu- Co-Education -1093

S.no	Statement	Options	G	P	Girls Sch	Co-edu	df	Chi-Square
1		Ash	4%	8%	4%	0%	7	.000
		Cloth	20%	14%	17%	17%		



What is the correct absorbent to be used during periods	Leaves	6%	2%	6%	2%
	Menstrual Cup	16%	7%	16%	8%
	Tampons	2%	1%	3%	0%
	Sanitary Pad	24%	40%	23%	40%
	No Idea	19%	26%	19%	25%
	Re- Using the sanitary pad after wash	8%	10%	12%	6%

The above table explains the results of the usage of the correct absorbent by the students. From the results, it is evident that people still use Ash, leaves, and reusing the sanitary pad after washing. This improper usage of pads affect the Vagina and ends up in cervical cancer. There is also a significant difference between the usage of sanitary pads, which is correct absorbent by the Government school (24%), Private (40%) and Girls education (23%), and (40%) of Coeducation. As the chi-square value also reflects in a highly significant value (.000).

Surprisingly, Private school students use ash, which in percent of (8%). From the results, it is evident that the knowledge of proper usage of absorbent is not given to the students. Access and use of sanitary napkins were is also found below. It is similar to the other studies as the results are of the same. In those studies it is said that sanitary napkins are not affordable or available so that girls use other materials like old cloth, leaves, mattress, paper and develop coping devices like wearing dark clothes, avoiding to sit and leaving class as the last person[85]. The use of menstrual cups is practiced by the government students of 16% when compared to the private students it is only (7%). Reusing the washed pads is also high in percent 10% in the private school.

Historically women and girls have used various products to absorb menstrual flow with implications of disposal both culturally and environmentally. These include mud, ashes, straws, cow dung, leaves, sea sponges, corncobs, wood ash, cotton wool, tissue paper, and strips of clothes to absorb the menstrual flow. This practice is still existing as the results reflect the use of ash, cloth, leaves, and reusing the sanitary pads after wash.

Hence the Null Hypothesis, Ho4 There will be no significant association between the respondents' knowledge of using the correct absorbent and their independent variables type of school, and the system of education is not tenable. Therefore, the alternative hypothesis is accepted.

It can be inferred that lack of knowledge about the correct absorbent is not given to the students from both Government school and Private schools. When the researcher intervened to the respondents regarding the use of sanitary pads regularly, they responded that the amount also plays a significant role every month they can't afford an amount for only the pads as the girl children are more in the family. So they use the old clothes which are in their practice and also easy to use. Lack of knowledge on how to use pads, followed by the anxiety of being seen and teased by boys, were also the other reasons for girls not to use sanitary pads during menstruation [86].

They also feel ashamed to carry their pads to school that other students may know that a particular girl is menstruating. The preference for sanitary protection material is based on personal choice, cultural acceptability, economic status, availability, and affordability. Even in schools, there are no pads when they have periods at school.

The frequency of the change of the pads when studied revealed that most of the school girls never changed their pads due to inadequate facilities at school. The use of soiled pads for an extended period makes them prone to more RTI infections. The necessary sanitation facilities should be provided in every school. Also, they should provide soap and menstrual absorbents to manage menstruation hygiene to avoid infections that can lead students to severe diseases. The choice of absorbents varies as the affordability also is concerned.

The majority of Indian women, approximately 75%, still use cloth and rags to absorb the flow. The percentage usage of cloth and sanitary napkins varies from place to place within India based on many factors such as awareness, finance, availability and social norms [87]. Recognizing this Government of India under National



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Rural Health Mission (NRHM), self-help groups and some NGO's are taking initiatives to develop the sanitation facilities and to distribute free sanitary pads which don't have many chemicals in it.

**Table 4.4 The following table contains the results of knowledge statement regarding the cause of menstruation.
N-2008**

S.no	Statement	Mothers Education In Percentages	Physiological process	Curse of god	Don't Know	df	Chi square
1	What is the cause of menstruation	Illiterate 30%	20%	33%	47%	10	.000
		Below 10th 39%	34%	23%	43%		
		Below 12th 19%	41%	15%	44%		
		Graduate 8%	45%	7%	48%		
		Post Graduate 2%	57%	12%	31%		
		Don't Know 2%	58%	5%	37%		

The above results indicate that knowledge about the cause of menstruation is strongly associated with Mothers education. The cause of menstruation is the curse is accepted by (33%) of students whose mothers are illiterate (30%) the exact reason of menstruation as 'Physiological process' is known only (20%). There is a significant difference in the mother's educational qualification and knowledge in understanding the cause of menstruation. The mother should share the proper expertise as they will be the source of information to know about the biological process.

The (45%) and (57%) of the respondents who mothers were Graduates and Postgraduates were able to understand it as a normal physiological process, and some of the students felt that it is the curse (12%) and (7%). The lack of awareness regarding the physiological process must be taken seriously and given proper knowledge to the students. The chi-square value (.000), which is significantly high, results that there should be given education to the students about menstruation.

Hence the Null Hypothesis, Ho5 There will be no significant association between the respondents' knowledge about the cause of menstruation, and their independent variable mother's education is not tenable. Therefore, the alternative hypothesis is accepted.

It is inferred that, In India, there is generally a silence around the issue of women's health, especially menstruation. A deep-rooted taboo feeds into the humorous myth-making around menstruation like women are impure, dirty, sick, and even cursed during their period. It is believed throughout ages and followed that when a girl attains puberty, she is unclean, cursed, and isolated.



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It's all part of the suffering, and humiliation women have to endure because of harsh traditions. There are initiatives where they wanted to give awareness about the menstruation process and hygiene management. But people still stick on to the superstitious beliefs. Menstrual beliefs refer to misconceptions and attitudes towards menstruation within a given culture or religion. After attaining puberty in rural areas, people think that she is ready for marriage, and they prepare the girl for that instead of protecting and taking care of her [88]. Menstrual beliefs, knowledge, and practices were all interrelated to the menstrual hygiene management little, inaccurate, or incomplete knowledge about menstruation is a great hindrance in the path of the personal and menstrual hygiene management. The schools should be more interactive with the students about menstruation. They should openly talk, and systematic awareness of menstruation, physiological process, and the psychological process should be discussed.

Table 4.5 The following table contains the knowledge statement results regarding the source of information about menstruation. N-2008

TV- Television, PHC- Public Health Centre, Y- yes, N- No

	Statement	Illiterate	Below 10 th	Below 12 th	Graduate	Post Graduate	Don't Know	df	Chi square
	From where did you come to know about menstruation	30%	39%	19%	8%	2%	2%		
Mother	Y	46%	48%	51%	47%	60%	40%	5	.354
	N	54%	52%	50%	53%	40%	60%		
Sister	Y	29%	25%	19%	19%	29%	21%	5	.010
	N	71%	75%	81%	81%	71%	79%		
Friends	Y	42%	33%	30%	33%	43%	18%	5	.000
	N	58%	67%	70%	67%	57%	82		
Relative	Y	4%	11%	9%	8%	7%	8%	5	.051
	N	86%	89%	91%	92%	93%	92%		
Teacher	Y	17%	11%	10%	13%	9%	8%	5	.016
	N	83%	89%	90%	87%	91%	92%		
Doctor	Y	4%	4%	2%	1%	0%	5%	5	.032
	N	96%	96%	98%	99%	100%	95%		
Films	Y	19%	12%	16%	13%	12%	13%	5	.006
	N	81%	88%	84%	87%	88%	87%		
TV	Y	21%	16%	14%	7%	12%	8%	5	.000
	N	79%	84%	86%	93%	88%	92%		
PHC	Y	3%	2%	2%	1%	2%	3%	5	.414
	N	97%	98%	98%	99%	98%	97%		
Internet	Y	25%	19%	8%	5%	2%	0%	5	.000
	N	75%	81%	92%	95%	98%	100%		
School	Y	13%	6%	7%	3%	2%	5%	5	.000
	N	87%	94%	93%	97%	98%	95%		
Camps	Y	14%	8%	5%	6%	9%	0%	5	.000



	N	86%	92%	95%	94%	91%	100%		
No I don't Know	Y	22%	25%	26%	21%	17%	29%	5	.413
	N	78%	75%	74%	79%	83%	71%		

From the above table, it is noted that Adolescent girls receive information from different sources. Mothers whose educational qualification is postgraduates (60%) have interacted about menstruation to their daughters. Followed by the next source of information is the friends followed by a sister, relatives, and medical camps. When the girls do not get adequate information from their mothers, they depend on the teachers. While discussing the educational approaches, mentioned that education becomes a series of facts passed on from a 'knowledgeable' teacher to the 'ignorant' student [89].

But the studies revealed that none of the students had complete knowledge of menstruation. Studies also showed that mothers, at times, delay teaching their daughters on menstruation so that teachers become the alternative source. Indian Council for Medical Research's 2011-12 report stated that only 38 percent of menstruating girls in India spoke to their mothers about menstruation. But teachers also feel shy and embarrassed to counsel the girls regarding menstruation and safe menstrual practices. Especially when it comes to co-education, teachers tend to skip topics on menstruation or leave it for self-study [90]. The educational system should take efforts to spread positive awareness regarding menstruation among adolescents.

When the teachers and mothers feel reluctant to talk to their daughters, the young girls stay ignorant of their body functions. Mothers felt hesitant to discuss menstrual topics with their daughters, arrange their elder sisters to communicate regarding menstrual issues. The sisters are mentioned as educators followed by mothers, teachers, and friends [91]. Sisters usually communicate the information which their mothers ask them to convey.

During the intervention, other girls mentioned they had received the information from print and visual advertisements. The communication media are generally used to support development initiatives by the dissemination of messages that encourage the public to support development [92]. But the media is seemed to be very less informative when it comes to menstruation. Very few girls reported being getting information about menstruation from the media.

Hence the Null Hypothesis, Ho6 There will be no significant association between the source of information about menstruation, and their independent variable mother's education is not tenable, and therefore the alternative hypothesis is accepted.

Thus it is inferred that the reaction of the mothers and other sources has a high impact on the young girls' belief on menarche and menstruation. Hence, it becomes highly essential to spread positive information to the girls and make them develop a positive attitude towards menstruation, which will be embraced by the girls throughout their lives. Many mothers were themselves unaware of the menstruation process, we're unable to explain, and practices could be considered as menstrual hygiene management. Schools were not very helpful either as schools in rural areas refrained from discussing menstrual hygiene.

In the study it was observed that (3%) of the girls received information from Television, (5%) from magazines and (10%) from the movies [93]. But the information which they received is also very minimum and only about the usage of sanitary napkins. Girls also expressed that advertisements and the content showed in the media are inappropriate.

But in this study (13%) reported getting information from the internet, smartphones, and mobile applications. Studies also witness that public health centres, school camps programs, and doctors play a meagre role in educating the girls on menstruation. Many mothers were themselves unaware of menstruation and how it was to be explained to a teenager. What practices could be considered as menstrual hygiene management? Schools were not very helpful either as schools in rural areas refrained from discussing menstrual hygiene.



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So it's the responsibility of the teachers to teach the students about the biological process without skipping. Media should play a role in educating the girls in an informative manner instead of giving them an awkward feeling. It is essential to pass on useful information through print and visual media so that many girls can become aware of safe menstrual practices. According to Djalaliniaet al., poor or weak information about menstrual health leads girls to react inappropriately during menarche [94].

The study indicated that the source of information mostly spreads false perceptions, misconceptions, and myths to the girls. Women across India grow up remaining unaware of the real reasons for menstruation, and the importance of menstrual hygiene due to lack of knowledge and this should be given in their early adolescence to omit the awkward feel of students about menstruation. A clear understanding should be given to students from all aspects of their lives, like the mother, sister, teachers, camps, and textbooks. A lesson regarding their biological process and changes that will occur during their adolescent phase should be taught by the teachers to increase the students' awareness level.

Table 4.6 The following table contains the results of school sanitation and menstrual health facilities N-2008 G- Government -974, P-Private 1034, Girls Sch- Girls School-915, Co-Edu- Co Education -1093

S.no	Statements	Yes/ No/NI	G	P	Girls S	Co- ed	df	Chi- Square
1	a) Cleanliness and sanitation facilities which are unavailable in schools are a major reason for unhygienic practices	Yes	42%	45%	43%	44%	2	.000
		No	30%	37%	33%	35%		
2	b) Do you need a separate counsellor who can teach and clarify your doubts regarding menstruation and adolescents	Yes	47%	43%	55%	37%	2	.000
		No	36%	42%	32%	45%		
		NI	16%	15%	12%	18%		
3	c) Do you avoid using school toilets	Yes	51%	46%	74%	53%	2	.000
		No	49%	54%	26%	46%		
4	d) Menstruation is a barrier	Yes	46%	57%	46%	57%	2	.000
		No	20%	33%	22%	31%		
		NI	23%	21%	20%	23%		
5	e) Menstruation affects the academic performances	Yes	60%	50%	61%	46%	2	.002
		No	25%	32%	23%	33%		
		NI	19%	18%	16%	21%		

The above table shows the results of sanitation and menstrual health facilities which are available in school. Unavailability of sanitation facilities and unhygienic practices has been the reason for not using toilets emphasized by the (42%) Government schools, (45%) Private schools, (43%) Girls education, and (44%) coeducation. Chi-square value (.000) is highly significant, and there is a difference between the schools. There is a need for a separate counselor who can teach and clarify the doubts regarding menstruation and adolescents to the students are indicated by (47%) Government and (43%) Private, (55%) Girls education and (37%) coeducation. From the results, it is known that girl's education needed much more knowledge about the adolescent age since they have lots of doubts to be cleared about themselves.

Avoiding school toilets is (51%). Government and (49%) Private school students, from the intervention, could realize that the students are uncomfortable using the toilets in school as the water facilities are also not available 24hrs. Menstruation is a barrier for the students. There are differences in education as it is (46%) girls and (57%) boys education because students from coeducation are much more hesitant and fear that boys may know that they are menstruating.



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Menstruation also affects the academic purpose of the students. From the intervention, it is known that students feel uncomfortable during their periods to go to school. It's about the inconvenience they face in school as well as the pain they undergo. They couldn't concentrate on the academic and participating especially in sports makes them feel uneasy.

Hence the Null Hypothesis Ho11 There will be no significant association between the school sanitation facilities (a) to (e) and their independent variable type of school, and the system of education is not tenable, and therefore the alternative hypothesis is accepted.

a. Cleanliness and sanitation facilities unavailable in schools are a major reason for unhygienic practices, b) need a separate counselor who can teach and clarify doubts regarding menstruation and adolescents. c) Avoiding school toilets, d) Menstruation as a barrier during school days, e) Menstruation affects the academic performances.

It is inferred that due to inadequate knowledge, there are certain unhygienic practices followed by the young girls resulting in poor menstrual hygiene. It also leads to many unnecessary restrictions on young girls, and they faced many health problems and complaints, which were either ignored or managed inappropriately. The role of the health sector in schools and the proper sanitation facilities in school should be maintained. The provision of sanitary napkins and adequate sanitation and washing facilities should be made available with the gender perspective.

There are an estimated 132 public toilets for women in Delhi, only (8%) the number of 1534 for men [95]. The previous studies also reciprocate the same as that there are no necessary facilities like toilets in school, especially for the girls and the disposal dustbins. Though now the government is taking initiatives to build an e- toilets everywhere. Still, at schools, the importance should be given more by the authorities of the school.

Table 4.7 The following table contains the results of whether lessons regarding the biological process are taught in association with the education system and type of school.

G- Government -974, P-Private 1034, Girls Sch- Girls School-915, Co-Edu- Co-Education -1093, TOS- Type of school, SOE- System of education N-2008

S.no	Lesson	TOS SOE	Taken in class	Skipped	Asked to learn by yourself	df	Chi square
1	The lessons regarding your biological process, physical growth of the human body is	G	21%	54%	25%	2	.000
		P	39%	44%	17%		
		Girls	28%	49%	23%		
		Co-edu	33%	48%	19%		

From the above table, it is noted that the lessons regarding the biological process are skipped (54%) Government School and (25%) they are asking to learn students by themselves. The biological process has skipped by Private schools (44%) and (17%) have asked to learn by the students, Only (39%) have been taken in the class. In the girl's school, it is (49%) skipped, and only (28%) made in the course whereas in the coeducation it's (33%) taken in the class and (48%) it is skipped and (19%) they have asked to learn by themselves. The chi-square value (.000) is highly significant.



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Hence the Null Hypothesis Ho12 There will be no significant association between the lessons regarding the biological process are taught by teachers in school and their independent variable type of school and the system of education is not tenable and therefore the alternative hypothesis is accepted.

It can be inferred that In schools, teachers can make the school environment friendly to manage menstruation with dignity. Sex education in schools helps adolescents to discover their sexual identity, to protect themselves from sexual abuse, unwanted pregnancies, and sexually transmitted diseases, and to know physiological changes occurring in the body and how to take care of personal hygiene. In most cases, the teacher's attitude is not right and supportive towards menstruating girls in schools, as said by the students during the intervention and discussion. Different views of parents, teachers, and society affect sex education being taught in schools and colleges. Cultural, religious, and social barriers also create hindrance in the path of sex education.

Whether the lessons regarding your biological process, the physical growth of the human body have been covered? Our education sector plays a vital role in a child's development by allowing them to respond to changes and challenges they are facing in day to day life. But often, it avoids issues related to menstruation and menstrual hygiene management by considering it one's matter and should be discussed within the house. Menstruation is a silent issue in girl's life which is further affected by the teacher's attitude, school environment, and infrastructure. Because of this, many girls remain absent from school during this time.

Sex education is often neglected by the school curriculum, which negatively impacts the student's life. They get information about puberty, sexual intercourse, menstruation, and other physiological changes in one's body from books, friends, and while teaching, they should not skip these kinds of lessons where they come to know about their body changes. Besides, the non-availability of female teachers in every school is also a severe issue. In most of the public and private schools in small cities in India, the topic of reproductive health is skipped in the class, and teachers instruct the students to read that chapter in the textbook at home. Language is another critical barrier for many students who are studying in the Tamil medium.

In most state-run schools in India, the English language is still not a compulsory subject. Therefore, the use of dialect terms for human reproductive organs becomes very embarrassing for teachers as well as students. The condition becomes more complicated in cases of male teachers. Besides, the environment in co-education schools in rural areas is still not mature enough to discuss reproductive health education. In many schools, both male and female teachers are not ready to discuss menstruation and menstrual hygiene management. The female teachers are also not available in most of the schools.

Teachers often skip such topics in books as they do not want any open discussion in the class or to escape from the questions asked by students [96]. Teachers also feel shy and embarrassed to discuss such topics in quality due to the language barrier. In most schools, English is not a compulsory subject. Hence, teachers have to consider them in the local language, and using vernacular words in front of students is an embarrassing thing.

Due to an unsupportive environment in the schools, it was also found that some girls hesitate to stand to answer teacher's questions in fear of leakage or smell and even wait to write on blackboard in fear of any menstrual accident and bloodstains on clothes seeing by others. In some reported cases, parents do not allow girls to go to schools upon reaching puberty in fear of sexual harassment by boys and male teachers in schools. Male teachers and employees in the schools and institutes should be well educated and confident regarding menstruation and menstrual hygiene management so that they support girls/women by providing a safe environment and privacy [97].

A committee of teachers, including both males and females, should be made in the schools to collect funds for sanitary napkins, soaps, water, and toilet facilities in schools so that girls can manage their menstruation with ease and safety. The committee should also provide dustbins for menstrual waste disposal. Separate toilets for girls and boys with proper doors and locks should be built in the schools. Teachers should educate girls about menstrual health management and its link to their health.



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They should also make girl students aware of how to dispose of used menstrual products at home and in schools and about the consequences of throwing them in open or flushing them in toilets. Open discussions on puberty, sex education, menstruation, and so forth should be organized by schools in every class to make students aware. This will solve their unsolved queries by providing them correct knowledge, promote social interaction, and also develop a trust relationship with fellow friends and teachers. School-level health policies should be made by the school management committee to promote and educate students regarding health and safety, to ensure adequate water and sanitation facilities, and to protect girl students and staff from bullying and sexual harassment.

Table 4.8The following table contains the results of respondents method of disposing pads in association with the type of school and system of education. N-2008.G- Government -974, P-Private 1034, Girls Sch-Girls School-915, Co-Edu- Co Education -1093

S. No	Method of disposing pads	G	P	Girls Sch	Co - Edu	df	Chi square
1	Burying	7%	4%	8%	3%	6	.000
2	Burning	17%	18%	19%	16%		
3	Throwing it in the waste bin	19%	17%	16%	19%		
4	Wrapping it in a paper and throwing it in a dustbin	15%	23%	11%	26%		
5	No Idea	25%	24%	32%	18%		
6	Throwing it in the roadside	4%	4%	4%	3%		
7	Flushing it in the toilet	13%	10%	9%	14%		

From the above table it is noted that the used sanitary pads are disposed of by throwing it in the dustbin (19%) Government Schools and (17%) Private School, (16%) Girls education and (19%) coeducation which is high when compared to the other methods. There are various methods to dispose of the sanitary pads; the most used methods are given as options according to the reviews. Still, students practice flushing the pads in the toilet (13%)Government, Private (10%), and in the girls (9%) and (14%) from coeducation. Wrapping it in a paper and throwing it in a dustbin is the correct method of disposal (15%) from government and (23%) from private, (11%)girls education, and (26%) coeducation. There is a difference between the type of school and system of education in the 'method of disposal' that is evident by the chi-square (.000), which is highly significant.

Hence the Null Hypothesis Ho17 There will be no significant association between respondents' method of disposing of pads, and their independent variable type of school and system of education is not tenable; therefore, the alternative hypothesis is accepted.

Thus it can be inferred that there is a lack of knowledge about disposing of the pads. Students were not aware of the pads' disposal as their parents, teachers, or friends did not speak about this topic. Countries have developed methods to manage human wastes but because of a lack of menstrual management practices in the world. Most women dispose of their sanitary pads or other menstrual articles into domestic solid wastes or garbage bins that ultimately become a part of solid wastes. Toilet facilities in India lack containers for the disposal of sanitary pads and handwashing facilities for menstruating women to handle menstrual hygiene.

METHOD OF DISPOSING PADS

But, there are many options for disposing of menstrual waste in rural areas, such as burying, burning, and throwing in the garbage or pit latrines. In rural areas, most women use reusable and non-commercial sanitary materials like reusable pads or cloths. Thus, they generate a lesser amount of menstrual waste than women in urban areas who rely on commercial disposable pads.

In schools, due to lack of sanitary facilities, girls throw their pads in toilets. In some cases, girls threw away their used menstrual clothes without washing them. Many were reported being absent from school due to lack of



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disposal system, broken lock, no proper doors for the toilets, lack of water tap, bucket, and inadequate water supply, and this was said by the students when the researcher discussed with the students during the intervention. In some schools, incinerators or feminine hygiene bins are used for disposing of menstrual waste material. Still, due to shyness or fear of being seen by others, they refrained from using it.

The behavior of women regarding disposal is different when being at home and away from home. They dispose of the waste by wrapping and throwing in the dustbin and other domestic garbage at home. Before knowing the consequences of flushing the pads in public places, they wash them in the toilets or wrap and throw them in the dustbins. Where dustbins are not placed, they leave the soiled pads wrapped or unwrapped in the toilet corners, making the toilets dirty, breeding places for flies and mosquitoes, and unhygienic for other toilet users and cleaners.

In many cities, public toilets always complain of the sewage system's blockage because of the flushing of sanitary pads or rags in the bathroom. Sanitary products soaked with an infected woman/girl's blood may contain hepatitis and HIV viruses that retain their infectivity in soil and live up to six months in the land. The clogged drainage with napkins has to be unblocked and cleaned manually by conservancy workers with their bare hands without proper protection and tools.

This exposes the workers to harmful chemicals and bacteria. Incineration is a better technique to dispose of menstrual waste, but pads' burning releases harmful gasses that affect health and the environment. Burning of inorganic material at low-temperature releases dioxins, which are toxic and carcinogenic. Compared to other disposal methods, using the incinerator in schools can help students be hygiene and stop the blockages in the pits due to flushing the pads in the toilet.

CONCLUSION

The study revealed that the knowledge of menstruation is reduced and that hygiene practices are pitiable. The study found that proper menstrual hygiene and correct perception can protect girls from suffering from infections. The girls should be educated about menstruation's facts, physiological implications, the significance of menstruation and development of secondary sexual characters, and above all, about proper hygienic practices and selection of disposable sanitary menstrual absorbent. This can be achieved through educational television programs, compulsory sex education in the school curriculum, and school/nurses health personnel. Thus the above findings support the need to encourage safe and hygienic practices among adolescent girls and bring them out of traditional beliefs, misconceptions, and menstruation restrictions. Menstrual health is an integral part of the life cycle approach to women's health, so all adolescent girls need to get loud and clear messages and services on this issue. Health talks in schools can help improve menstrual hygiene practices. Sanitary napkins can be made available cheaply, so most of them will use it during menstruation. Dustbins need to be provided at public places and schools to dispose of sanitary napkins.

Menstruation and menstrual practices still face many social, cultural, and religious restrictions, which are a significant barrier in the path of menstrual hygiene management. In many parts of the country, especially in rural areas, girls are not prepared and aware of menstruation, so they face many difficulties and challenges at home, schools, and workplaces. While reviewing the literature, we found that little, inaccurate, or incomplete knowledge about menstruation is a great hindrance in the path of personal and menstrual hygiene management. Girls and women have very little or no knowledge about reproductive tract infections caused by ignorance of personal hygiene during menstruation. In rural areas, women do not have access to sanitary products or know very little about the types and methods of using them or cannot afford them due to the high cost. So, they mostly rely on reusable cloth pads, which they wash and use again. The needs and requirements of the adolescent girls and women are ignored even though there are significant developments in water and sanitation. Women manage menstruation differently when they are at home or outside; at homes, they dispose of menstrual products in domestic wastes and public toilets, and they flush them in the bathrooms without knowing the consequences of choking. There should be a need to educate and make them aware of the environmental pollution and health hazards. Implementation of modern techniques like incineration can help to reduce waste. Also, awareness should be created to emphasize reusable sanitary products or natural hygienic products from materials like banana fiber,



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bamboo fiber, sea sponges, water, and so on. Thus, it is evident that there is a significant difference in the adolescent girls' methods for disposing of their used sanitary absorbent. Therefore, it can be inferred that the educational intervention program is useful in making teenage girls choose eco-friendly methods of disposing of the used pads. The results support the studies of Allah and Elsabagh (2011), El-Mowafy et al. (2014), and Nemade et al. (2009), wherein it was observed that the girls adopted safe disposal methods after effective health education programs. Thus, when effective communication is provided to the girls, they gain awareness and alter their behavior accordingly.

The study also clearly shows the impact of health education and communication programs in improving the adolescents' knowledge (menstrual cycle, hygiene, nutrition, myth, and health care), attitude (susceptibility, seriousness, benefits, barriers, and self-efficacy) and practices (absorbent materials, physical exercise, diet/food, disposing pads, restrictions practiced). The adolescent girls significantly differ in their knowledge, attitude, and practices between the pre-intervention and post-intervention. After the intervention program, the girls showed a visible increase in their understanding of menstruation.

They exhibited a positive attitude towards menstruation, and it was found that they adopted safe health practices. This implies that effective health communication programs can increase knowledge and bring progressive changes in their behavior. Understanding of the process of menstruation and hygiene will help them discuss and communicate menstrual matters without any inhibition and understand the significance of menstruation and the development of secondary sexual characteristics. Cues to action through social communication, such as television, radio, and other audio-visual aids, have indirectly exposed menstruation to the public. However, it is a matter of great surprise that many young girls, even today, are entirely ignorant when they get their first periods. Ignorance about menstruation and reproductive health can be removed through effective educational programs and active interpersonal communication between mothers, teachers, and adolescents. People participating in interpersonal communication often tend to influence each other, share their thoughts and feelings, and engage in activities together.

Most of the adolescent girls were unaware of the normal physiology of menstruation. A mother plays a vital role as a teacher for imparting primary knowledge regarding the menstrual cycle to teenage girls. Adolescent girls need to be armed with proper and complete knowledge via formal and informal communications. The use of sanitary pads should be promoted by making it available free of cost or nominal. Adolescents should be taught regarding reproductive infection and its prevention in schools. Thus, parents' and teacher's positive thoughts can influence adolescents. Parents and the teachers should develop their communication skills through proper training to act as better communicators and make an effort towards making menstrual hygiene and management better for the adolescent population. Therefore, adequate importance should be given through health education and communication, which can lead to the development and empowerment of the girls and solve their emotional problems. Menstruation is still considered as something shameful, and young girls face many restrictions. Knowledge regarding menstruation, reproduction, contraception, and diet is still lacking among school girls. If proper guidance is given to the students, teachers, and parents, menstruation will not be under a taboo topic.

As feminismIndia.com, *Karan Babbar PhD scholar at IIM Ahmedabad (2020)* posits that previous studies have shown that the physical environment of schools does not adequately support the needs of girls to manage their menstrual days, and does not provide strong social and emotional support. [Achieving access to adequate and equitable sanitation and hygiene for all and end open defecation, paying special attention to the needs of women and girls and those in vulnerable situations](#)". How the government and policymakers have taken multiple measures to reduce the dropouts including starting schools within the 3 km range of the students as prescribed in the [RTE Act](#), [hiring female teachers](#), conducting gender sensitisation workshops for the teachers to reflect gender neutrality in the classrooms, providing bicycles to the girl students to travel to the schools, and reserving leadership position for women, which has shown to influence the adolescent aspirations and educational attainment in a positive way. Yet, the NEP 2020 does not provide adequate attention to bridge the gender parity created due to inadequate attention to the sanitation and water facilities and, more specifically, to the menstrual hygiene and needs of the girls and female teachers. Hence it becomes a key aspect to reform in educational policy of NEP to reach the Sustainable Development Goal 6.2 by 2030.



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Women's empowerment starts with the education that they get from their teachers and guidance from their parents. If this topic is opened up by every girl aloud, the drop out of schools, the menstrual shame, the unsound practice, the suicides due to pain, seclusions during menses, the death rates due to illogical custom can be reduced by proper education to the students. There is a need to provide training and equip them with skills for safe and hygienic practices and to make appropriate choices to lead a healthy reproductive life and prevent the risk of reproductive tract infections. There is also a need to empower mothers and teachers to function as primary sources of information on menstruation, including reproductive health, as they are accessible to handle adolescent issues and facilitate referrals as the need arises.

Policy Management for Sustainable Development Goal

- Low-cost sanitary pads need to be distributed in various schools in states of India.
- The Sanitary pads have to made as an essential commodity and allowed hassle-free transportation and distribution by Central Govt.
- A low-cost sanitary pad-making machine can bring about a revolution in rural India, encouraging women to come out of unhygienic practices over menstruation.
- Both Central and State governments should take tremendous steps, including slashing GST for pads, to raise awareness and make women follow hygienic practices.
- India must be a frontrunner in spreading awareness of menstrual hygiene.
- Eradicate the social taboos around menstruation. Our vision of making India into 100% of women getting Menstrual Hygiene
- Menstrual Hygiene Awareness is to spread globally by the Department for Education to both the genders.
- Only free pads or cheap pads cannot overcome this- what's needed is Menstrual Hygiene Awareness.
- Soap and water to wash the body whenever required
- "Swachh Bharat: Swachh Vidyalaya" campaign has been launched to ensure that every school in India has a set of functioning and well-maintained WASH facilities, including soap and private spaces for change adequate water for washing, and disposal facilities for used menstrual absorbents should be conclusively established and monitored.
- Efforts are to be made to provide sanitary napkins to school-going girls by installing napkin-vending machines.
- To increase the accessibility of environmentally safe disposal mechanisms such as low-cost incinerators attached to the girls' toilets in schools for disposal of used MHM products.
- Successful implementation of existing policy and programs would be a welcome endeavor for providing basic hygiene and reproductive services to girls and women.
- The compulsory book on menstruation should be supplied free of cost to all the girls during early adolescents. The text should include the knowledge, attitude, and practices that constitute the nutrition diet, individual facts, good/bad touches, and helplines for abuses.
- Psychologists should present as full time in the schools and guide both the male and female students.
- Yoga and physical activities are to be given first preference for the girl child before and after menarche.
- Mandatory leave should be given to students during the menarche.
- Teachers need to understand the student's mindset during the menstruation cycle and build confidence.
- Girls should be made to be prepared to understand physical attractiveness and sexual hazardousness during the phase of adolescence.
- Girls' psychological aspects should be strengthened and guided by a better life.
- Compulsory medical certificate after the menarche should be given to the schools, and they have been given knowledge on menstruation.

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² Department of Community and Family Medicine, All India Institute of Medical Sciences, Jodhpur, Rajasthan, India
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