

6-2016

## Misconceptions and mismanagement of menstruation among adolescents girls who do not attend school in Pakistan

Naghma Rizvi

*Aga Khan University*, naghma.rizvi@aku.edu

Tazeen Saeed Ali

*Aga Khan University*, tazeen.ali@aku.edu

Follow this and additional works at: <https://ecommons.aku.edu/jam>



Part of the [Nursing Midwifery Commons](#)

### Recommended Citation

Rizvi, N, & Ali, T S. Misconceptions and mismanagement of menstruation among adolescents girls who do not attend school in Pakistan. *Journal of Asian Midwives*. 2016;3(1):46–62.

## **Misconceptions and Mismanagement of Menstruation among Adolescents Girls who do not attend School in Pakistan**

<sup>1</sup>Dr S. Naghma Rizvi; <sup>2</sup>Dr. Tazeen Saeed Ali

1. **Corresponding Author:** Senior Instructor, The Aga Khan University School of Nursing and Midwifery, Email: [naghma.rizvi@aku.edu](mailto:naghma.rizvi@aku.edu):
  2. Dr. Tazeen Saeed Ali, Associate Professor, The Aga Khan University School Of Nursing and Midwifery & Department Of Community Health Sciences, Email: [Tazeen.ali@aku.edu](mailto:Tazeen.ali@aku.edu)
- 

### **Abstract**

**Background:** Menstruation is perceived and interpreted differently under different social and cultural norms. There are a number of different practices, conceptions and misconceptions that have been reported in studies conducted in various countries. In Pakistan, there is a dearth of knowledge related to hygienic and unhygienic practices, discomforts, misconceptions related to nutrition, and restrictions imposed during menstruation. Therefore, this study was conducted with the objectives to identify the conceptions and misconceptions about menstruation, explore hygienic and unhygienic practices during menstruation along with the socio- cultural and religious restrictions imposed, and the discomforts with its management among adolescents who do not attend schools between the ages of 13-19 years, residing in the squatter settlements of urban Karachi. Based on the study outcomes, the community midwives can be used as vectors to disseminate published information related to management of menstruation. Consequently, midwives can contribute in improving the health indicators of the country.

**Methodology:** The methodology of the study used a qualitative exploratory study design. Three focus group discussions were conducted with 6-8 participants in each group. Six in-depth interviews were conducted with the key informants selected from three focus groups. The participants were non-school going adolescent girls. The data collected were thematically analyzed.

**Results:** The themes that emerged were; lack of knowledge about menstrual physiology, misconceptions about normal menstrual blood flow; discomforts and mismanagement,

unhygienic practices during menstruation, alteration in nutrition, bathing, and socialization in both the religious and social activities.

**Conclusion:** Adolescent girls held misconceptions and beliefs regarding menstruation and its management. Dissemination of the findings to the health professionals will increase their awareness regarding menstrual management which would be helpful for improved reproductive health of the girls.

**Key Words:** Menstruation, Misconceptions, Menstrual management

---

## **Introduction and Background**

Throughout the world, girls and boys are treated differently right from birth; but at puberty this gender divide widens. Boys enjoy new privileges, while girls endure new restrictions.<sup>1</sup> These restrictions are mostly related to the attainment of puberty when girls experience a transition from childhood to womanhood. A major challenge is the onset of menstruation, and its management. Menarche is considered as one of the most important changes occurring in girls during adolescent years.<sup>2</sup>

In most societies, menarche is an indication of developing sexuality in a girl. However, a substantial body of literature suggests that menarche and menstruation are mainly negatively perceived and experienced by girls.<sup>3</sup> Amongst many reasons for this negative perception, one is that menarche conveys conflicting societal messages. While on one hand it represents the beginning of womanhood and sexuality, on the other hand, girls of this age are seen as too young to be sexually active.<sup>4</sup> Other negative perceptions are related to being vulnerable and susceptible to different illnesses, and to feelings of disgust and shame.<sup>1</sup> Burrow's<sup>3</sup> study showed that girls expressed largely negative views, viewing menstruation as embarrassing, shameful, and something to be hidden.

In many parts of the world, menstruation is also stigmatized. This is common in low socioeconomic squatter settlements of Karachi, Pakistan where this study was conducted. This stigma is based on traditional beliefs that menstruating women are impure and on society's unwillingness to discuss it as a normal event.<sup>5</sup> Therefore, when adolescents are not able to share their experience menstruation becomes something shameful for them.<sup>6</sup> These views, in turn, have implications for how girls manage menstruation.

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 and vaginal thrush, as well as bad odor, soiled garments and, ultimately, shame, leading to infringement on the girls' dignity.<sup>7</sup> International agencies for adolescent reproductive health advise that good menstrual hygiene practices are essential during menstruation; the practices include:

1) regular change of clothing and underwear; 2) change of hygienic pads every three to four hours; 3) daily showering, especially in instances of dysmenorrhea; 4) adequate washing of genitalia after each voiding of urine and/or feces; 5) continuing normal routine and daily activities (e.g. going to school, doing physical exercise), and 6) maintaining a balanced diet with plenty of fruits and vegetables rich in iron and calcium.<sup>8</sup>

The available literature indicates that these hygienic practices are hardly observed. Traditional norms and beliefs, socio-economic conditions, and physical infrastructure, influence practices related to menstruation.<sup>9</sup> For instance, Bharadwaj and Pakar<sup>10</sup> from India report that, in accordance with cultural traditions, menstruating women abstain from cooking and salting food. Similarly, in certain parts of India and Nepal, women aren't allowed to live in the residence with other family members, instead they stay in a separate section of the house.<sup>5</sup> If the woman has to go out, there is a separate door for her to use. A menstruating Hindu woman has to cook her own food and eat separately. These practices prevent girls and women from fully participating in society.

These restrictions also affect the management of menstruation. Shukla, from India, reports that the practical needs related to managing menstruation are not addressed appropriately and the girls are left with very few or no choices but to use and re-use rags.<sup>11</sup> A study conducted in the urban slums of Delhi found that out of 380 women only 2.9 percent were using sanitary pads, the rest were either using rags or pieces of old cloths.<sup>12</sup> Using rags is not a bad option in a financially constrained culture but its hygienic management is equally important. Generally rags are re-used after washing them but they are not dried by the sun; rather, they are hidden, which makes them more vulnerable to harboring bacteria that could lead to infections.<sup>13</sup> The rags are often washed with inadequate and unsafe water and without soap, and used repeatedly.<sup>9</sup> Because these practices are not discouraged they are observed during postpartum period also, leading to reproductive tract infections. Studies conducted in the South Asian population, including

Pakistan, reported insertion of herbal medicine inside the vagina or uterus during the postpartum period and washing of the perineum with unsafe material. These unsafe practices may lead to morbidity and mortality in the future.<sup>1</sup>

Several studies<sup>1, 10-11</sup> reported the avoidance of bathing during menstruation. Generally, it is believed that bathing during menstruation may lead to illnesses ranging from headache, backache to mental illness.<sup>1</sup> Similar findings have been reported by studies conducted in Riyadh.<sup>14</sup> In addition to bathing, certain foods believed to have ‘hot’ or ‘cold’ effects are also avoided during this period. The Chumash women, Native Americans living in the coastal part of California, were restricted from eating meat or fat and could not drink cold water for three days.<sup>15</sup> These women were restricted to a menstruation hut because they were considered vulnerable for self-injury, especially from scratching herself.

The discomforts that are generally reported during this period are edema, backache, headache, irritability, and asocial behavior. These discomforts are associated with both the pre-menstrual and post menstrual period. A variety of home remedies are used to manage these discomforts; for instance black tea, unhygienically prepared homemade vaginal pessaries, protein free meals, etc. This situation potentially jeopardizes the sexual reproductive health of millions of women and adolescent girls living in developing countries<sup>16-17</sup> and its consequences constitute a significant burden due to the enormous financial costs of health care services in these countries. Therefore, it is important to understand the process, management, related symptoms, and biological importance of menstruation as influenced by different social norms.

The purpose of the study was to explore the menstrual practices, conceptions, misconceptions, management of menstruation, discomforts, and its management amongst the non-school going adolescent girls, from the lower socio-economic strata of Karachi, Pakistan. Karachi is a city of 24 million within Pakistan’s total estimated population of 192 million (2015). In 2000, 50% of the population lived in slums, a percentage that is believed to have grown.<sup>18</sup>

This study has significance for the reproductive health of adolescent girls. WHO reports that throughout the world, adolescence is considered to be a time of relative health but it is not viewed as a priority.<sup>19</sup> Public policy has so far either ignored adolescents, or focused on them only when they behave differently.<sup>20</sup> As a result, a wide range of adolescent health issues are being neglected. Therefore, this study aims to identify the menstrual conceptions and related

practices of unmarried, non- school going adolescent girls living in the squatter settlements of Karachi, Pakistan.

### **Methodology**

A descriptive qualitative study was conducted through three Focus Group Discussions (FGDs) and six in-depth interviews with non-school going adolescent girls. The purpose of the qualitative component was to probe their knowledge, practices, and conceptions/misconceptions and to facilitate the development of a quantitative research survey for future study.

This study was conducted in Karachi, where the population comprises of different ethnic groups who are either natives, have migrated from different parts of Pakistan, or other countries. The participants of the study had different ethnic backgrounds, and were living in the three squatter settlements of low socio-economic standing.

The study participants were unmarried non-school going female adolescents, aged 13-19 years, working mainly as house maids. Female adolescent having amenorrhea and /or, have menstrual cycles of thirty one days or more were excluded. The participants were selected through purposive sampling. They were identified through community activists living in the three squatter settlements. Community activists are women who usually do tailoring at home and have a good contact with the residents. Ladies from the middle and higher class usually approach these community activists to arrange house maids for them. Verbal consent was taken from the participants and their mothers before the final selection.

There were six participants each in the two focus groups and eight in one focus group discussions. From the three FGDs six key informants were selected for in-depth interviews. This selection facilitated diversity in terms of ethnicity and cultural background. This was important because this diversity impact the management and practices related to menstruation.

### **Qualitative Assessment Tool**

The female adolescents were asked about their knowledge, practice, and management of discomforts during menstruation. In addition, they were asked if they restricted their activities, food, or socialization during this period. Information about the materials used for soaking up bleeding and their disposal and reuse also was sought.

## **Data Management**

The FGDs and in-depth interviews were tape-recorded, and notes were taken by the field supervisor. All the interviews were conducted in Urdu. The participants belonged to different ethnicities, hence, their spoken languages were different. However, Urdu is the most common language of communication and is understood by most people in Karachi. The field supervisor and the principal investigator did the transcriptions after each interview, which was later put into categories manually. The major challenge faced during transcription was the translation of interviews from Urdu to English. Due to fear of losing the essence of particular words used in describing an event or in providing information that was of particular interest to the research, roman Urdu was used (for those word/words) in brackets so that it would facilitate interpretation later in the analysis. Particular signs like asterisks, hyphens, and symbols for non-verbal cues were also used. Moreover, listening to the recorded conversations and transcribing interviews, and then reading them more than once (for editing purposes) helped in putting them into categories and, finally, themes were extracted from the categories. The categories were shared with the participants to reconfirm the meaning.

## **Findings**

The following themes emerged after the qualitative analysis of the data: Conceptions, Misconceptions, Hygienic practices, Cultural and religious practices, Altered Nutrition, Discomfort and management of discomforts. The discussion to follow will take each theme separately.

### **Conceptions and Misconceptions**

The general understanding was that every adolescent girl menstruates once a month and bleeding occurs for 1-3 days. They described the blood as red in color and odorless. None of the participants had any knowledge of the physiology or the purpose of menstruation. A number of misconceptions were reported by the adolescents; for example, the bad odor in menstrual blood is normal, or new clothes must not be worn during this period. Multiple responses were obtained regarding the soaking up of bleeding. A majority of them used and reused rags; some kept changing undergarments, very few used sanitary pads. One of the participants stated:

*“I do not use any material for soaking up the bleeding; instead I keep on changing my shalwar (trousers). If the bleeding is heavy, I prefer shalwars that are made up of thick material.”* (Participant from in-depth interview, aged 18 years)

The lack of knowledge about the physiology of menstruation was apparent since none of the participants had any idea of where the blood originated. Instead, the organs mentioned were intestine, stomach, abdomen and kidney. One of them said:

*“bleeding occurs when the urinary bladder is filled with blood and then bleeding stops; this cycle goes on for 6-7 days”*(Participant from Focus Group Discussion, aged 15 years)

The belief that heavy bleeding is good for health is strong amongst most of the adolescents because the majority believed that menstrual blood is dirty; the more you excrete it, the better. Some of them related menstruation to pregnancy. They shared that after menarche a girl can get married and become pregnant, because it helps in conceiving. They added that those who do not menstruate regularly cannot conceive.

### **Hygienic Practices**

Non-affordability of sanitary pads was reported by a majority of the adolescents. However, the very few who could afford these pads reported perineal irritation from using them. The alternatives to sanitary pads were rags made from discarded clothes. These rags were reused after being washed and hidden to dry, especially from the male members of the family. Some girls reported that they only used one pad in twenty-four hours so as not to unnecessarily waste the discarded clothes. Most of them preferred to dispose of the stained, and the stained and washed clothes in black polythene to avoid public exposure. One of the study participants reported:

*“It is a sin to throw stained cloth (unwashed) in the trash bin.”*  
(Participant from Focus Group Discussion, aged 14 years)



### **Bathing practices**

Only one participant of the study reported that there is no harm in bathing; rather it gives a good and healthy feeling. The rest strongly disagreed and reported that they did not bathe for 6-10 days during this period. They associated a large number of morbidities with bathing; for example, fever, backache, body ache, flu, increase or decrease in the flow rate, edema, mental illnesses, and even death;

*“If we bathe and wash our hair on the first three days of menstruation, it will lead to difficulty in conceiving”* (Participant from in-depth interview, aged 17 years)

It was not only the avoidance of bathing that was reported but also household chores that involved water;

*“A girl in my village died because she washed clothes during the first three days of menstruation”* (Participant from in-depth interview, aged 17 years)

Some girls said they avoid washing their perineum whenever they change pads because they have been told to avoid water. Others said they used soap and water whenever they changed. However, a few said that they performed ablution two to three times a day during this period as this made them feel good.

### **Cultural and religious practices**

Most of the adolescents reported that they avoided visiting social gatherings and did not practice religious rituals. There were two opinions regarding attending social gatherings. A majority said that they did not feel like visiting people, entertaining them, or attending any social gatherings for fear of stained clothes and asocial behavior. Some reported that female members of the family restricted their socialization during this period. These restrictions are not only limited to attending social gatherings, but include other restrictions as well, for example, avoid touching pickle container because the pickle may go bad or gather fungus, avoid watering plants, avoid touching a newborn.

*“If a menstruating girl touches a child suffering from measles, the disease can become severe”* (Participant from Focus Group Discussion, aged 16 years)

Apart from participating in cultural events, a menstruating girl is restricted from practicing her religion, attending religious gatherings, and visiting religious places:

*“This period makes us ineligible to perform and attend religious practices.”*  
(Participant from focus group interview, aged 16 years)

A majority had a strong belief that they should not attend religious gatherings as they are ‘NAPAK’ (impure). All of them abstain from reciting the Koran; however, some of them see no harm in listening to sermons. Interestingly, they reported that although they do not say their prayers or recite the Koran regularly, they feel a strong urge for such activities during this period.

### **Discomforts and their management**

The commonly reported discomforts included backache, stomach ache, edema, irritability and asocial behavior. The less common were anorexia, increased frequency of micturition, constipation, arrhythmias, and restlessness. These discomforts were managed with home remedies, for example analgesics (Ponstan, Brufen and Panadol), tea with ginger, tea with clove, black tea, and tea with pure ghee, rather than by consulting a health professional.

### **Altered Nutrition**

Alterations in the diet were reported by most of the participants during this period. They avoided food which they thought had ‘hot’ or ‘cold’ effects. For example, meat, spices, pickles, sour items, and carrots were listed as ‘hot’ whereas cold drinks, ice cream, cold water, and yogurt were considered ‘cold’. In addition, they restricted the consumption of some pulses. The participants reported that these foods affected the rate of menstrual flow, increasing or ceasing it completely.

*“I ate meat during this period and the bleeding stopped completely”*  
(Participant from in-depth interview, aged 14 years)

*“I avoid pickles during this period as this leads to arrhythmias”*  
(Participant from in-depth interview, aged 15 years)

## **Discussion**

Menstruation has been socially constructed as a problem – sometimes shameful and dirty, and most importantly, something to be hidden.<sup>3</sup> Menstruation is not mentioned in most social gatherings and even though many knew that it was a physiological process, some thought of it as a curse from God.<sup>5</sup> Like other normal physiological processes, that may include pregnancy, birth, birth spacing, the process of menstruation has many misconceptions attached to it and this could be the reason why it is misinterpreted and misunderstood among peoples and cultures. The analysis of the responses in this study shows that no participant had knowledge about the physiology and purpose of menstruation. The most frequent response was that bleeding occurs, which is red in color, and it occurs for 2-3 days. The reason behind this misconception is lack of proper information.

Burrows<sup>3</sup> reported similar findings when school girls were asked about what was good about menarche and menstruation. Their answers were either vaguely framed in terms of fertility ('you can have babies') or normality ('it's healthy'). Burrows stated that although she tried to defend her position that menstruation can have positive aspects, her participants did not seem convinced and resisted her. This seems to support studies that have found that post-menarcheal girls have negative attitudes towards menstruation.<sup>21-24</sup> Shukla<sup>11</sup> reported that girls were given very limited information at menarche: periods come every month and cloth should be used to absorb the blood. Similar findings were obtained from a study conducted in Nigeria.<sup>25</sup> Paria, Bhattacharyya, and Das<sup>26</sup> reported that only 114 (21.07%) girls believed menstruation was a physiological process. This is consistent with the findings of Subhas et al. where only 18.35% of the adolescent girls viewed menstruation as a normal phenomenon.<sup>27</sup> In our study, where the participants were non-school going adolescents, none of the participants mentioned the uterus as the source of bleeding, instead mentioned stomach, kidney, intestine, and abdomen.

Most of the respondents in our study quoted their mothers as the source of information. The same was reported in a Lebanon study.<sup>28</sup> It has been endorsed by many studies that mothers, teachers, and friends are the primary source of information related to menstrual awareness for adolescent girls.<sup>29-31</sup> The findings are similar across urban and rural areas.<sup>26</sup>

The Rajasthan Study<sup>13</sup> found that much of the information about menstruation imparted to adolescents is in the form of restriction on movement and behavior. Similar social restrictions were stated by our participants. Menstruation restricted the social life of more than 89.5% of

students to an extent that one out of five did not participate in social activities or in doing housework during menstruation.<sup>6</sup> This is consistent with the study of Gujjars in India showing that 15.0% of adolescent girls did not participate in social ceremonies during menstruation.<sup>32</sup> Other studies<sup>33-34</sup> have reported that during menstruation the girls abstained from social ceremonies (43.7%) or social activities with family (36.2%). Hence, it becomes a vicious cycle of knowledge transfer when mothers transfer knowledge to their daughters and the daughters, in turn, continue the same practices, which later could lead to maternal mortality and morbidities. Although various studies report that the level of information regarding reproductive health and genital hygiene is increasing, constant effort is needed to expedite this process in rural areas and among non-school going girls.<sup>35</sup>

Every culture has myths about menstruation. In pre-modern times it was believed that menstruating women could cause “meat to go bad, wine to turn sour, and bread dough to fall”.<sup>36</sup> These beliefs persist in varying forms in different cultures. The findings of our study show some of these misconceptions. There is no scientific validity to a belief that when a menstruating girl touches pickle in process or prepared pickle, it will go bad, but this continues to be a misconception. Bhartiya<sup>5</sup> shared that according to mythology a pickle touched by a menstruating woman rots away. In Hindu culture, a menstruating female is not allowed to enter the kitchen and is isolated from her family; she is served in a separate room until she stops menstruating. Similarly, in Hindu culture it is believed that menstruating girls should not touch a basil plant as it is considered to be holy and may even cause it to wither.

In India, as Shukla<sup>11</sup> writes, menstruation is considered a polluting factor among Hindus. Such beliefs are prevalent also among non-Hindus. The concept of paki (purity) and napaki (impurity) has a significant role in Islam but these concepts are for the females' ease. A menstruating female is exempted from prayers. The Muslims must pray five times a day. The actions during each prayer require standing, sitting, bowing, and prostrating many times during a single prayer. A menstruating female may not feel comfortable to offer these acts of prayers. However, reciting verses from The Koran and attending holy rituals (Milad, Quran Khawani, etc.) is not prohibited. Almost all our study participants had either self-imposed these restrictions or were socially bound not to attend religious congregations. It has also been reported by Bhartiya<sup>5</sup> who studied differences in menstruation across religions and societies that women are considered ‘ritually unclean’ while menstruating and aren't allowed to visit temples or pray to

deities. The study from West Bengal similarly reports that study participants did not attend any religious occasion.<sup>26</sup> In the West women may stay away from activities such as sports and sexual intercourse to avoid disclosing that they are menstruating.<sup>4</sup> Oxley<sup>37</sup> found that women often avoid situations where they may have their menstruation exposed. Similarly, Burrows<sup>3</sup> explains that it is not surprising, given the practical difficulties and potential for embarrassment, that girls avoid athletic games.

Normal hygiene is necessary during menstruation; sanitary pads and tampons should be changed at regular intervals of no longer than 6-8 hours. In our study a few girls reported that they changed 2-3 pads per day; most used one per day. Some reported that they did not use any material but kept changing their trousers. Many respondents firmly believed that it was healthier to use pads, but affordability was a concern. A small number of the study participants felt that although they could afford sanitary pads, they caused perineal irritation. Research conducted with adolescents in Nigeria and India showed that a minority of participants (32.7%<sup>38</sup> and 11.25%<sup>39</sup>) used disposable sanitary pads. The practice of using rags is not necessarily unhealthy, but not drying them under the sun or hiding them in damp surroundings may prove unhygienic and may predispose girls to infections. Even the disposing of stained rags is done in hiding in order to avoid exposing them to males in the family and to bad spirits who could cast witchcraft on these rags. Kumar and Srivastava<sup>40</sup> reported that many of their study participants smeared mud on the sanitary napkin after using it and then disposed it so that no one can do “black magic” by using it. The same study reported, if a sanitary napkin is burnt after disposing then the girl who used it can never become pregnant. Many adolescent girls today live in communities where traditional beliefs run counter to, and prevent them from adopting what is generally considered good menstrual hygiene practices.

Bathing during menstruation is another area of concern in our study, where almost none of the girls took a bath during menstruation. The same findings have been reported in a study conducted in Saudi Arabia and India. For instance, Moawed's<sup>14</sup> study showed that 42.5% of adolescent girls changed their pad every eight hours and 65% never cleaned their genitalia during menstruation. The same study found avoidance of bathing in a majority of the adolescents, who did not shower until after the third day of menstruation, while some avoided bathing till the end of their cycle. The rationale for this avoidance was the putative risks of bleeding, cessation of menstrual flow, ovarian cysts.<sup>7</sup>

Our study reported that the girls managed their discomforts by taking over-the-counter drugs. Similar findings were reported by a study conducted on Hispanic women.<sup>41</sup> This shows that health professionals need to discourage self-medication and encourage non-pharmaceutical and safe practices such as black tea or ginger tea, turmeric tea, and hot fomentation.

## **Conclusion**

This study concludes that there are a number of unhygienic practices and misconceptions common among the non-school going female adolescents of Karachi. Their knowledge related to the physiology of menstruation is scanty, and their practices are laden with misconceptions. These misconceptions impact their practices to manage menstruation. To break the continuum of transference of such knowledge and practices to the next generation, it is imperative for health professionals to intervene among adolescents at different level. Strategies may include: education given at the home level, at religious centers or in health care facilities, or health education sessions for mothers in the communities who could later transfer this information to their daughters.<sup>1</sup>

Dissemination of the findings to the health professionals will increase their awareness regarding menstrual management, which would be helpful for the better reproductive health of female adolescent.

In Pakistan, Lady Health Visitors, Community Midwives (CMWs), and Nurse Midwives are health professionals recognized by the Pakistan Nursing Council who provide reproductive health services. Among these health professionals, the LHVs and the CMWs are field-based workers, thus they can play a major role in creating awareness related to the effective and hygienic management of menstruation among women living in squatter settlements and those who have limited access to physicians. Since CMWs have access to the community at the grass roots level, they can play a constructive role in diminishing the myths related to menstruation in our society. The CMWs can take initiatives in addressing the management of lochia and menstruation when attending deliveries. CMWs can be used as vectors to disseminate published information related to management of menstruation. This will eventually lead to the prevention of morbidities that may occur due to unhygienic practices, thus reducing the burden of diseases. Hence, the midwives can effectively contribute in improving the health indicators of the country.

Longitudinal studies are needed to see the impact of sexual and reproductive health promotion interventions done through health education. This may help the researchers to understand how sociocultural beliefs regarding perception and management of menstruation influence their practices. Promotion of female education can be another panacea to uphold reproductive health among adolescents living in marginalized settlements.

### **Acknowledgement**

The authors wish to thank the Population Council Pakistan and Gates institute for providing a grant to support the study, The Aga Khan University School of Nursing, Syed Shahid Rizvi and Amir Ali for editing and computer assistance respectively.

### **References:**

1. Ali TS, Ali PA, Waheed H, Memon AA. Understanding of puberty and related health problems among female adolescents in Karachi, Pakistan. *Journal of Pakistan Medical Association*. 2006;56: 68-72.
2. Dasgupta A, Sarkar M. Menstrual hygiene: How hygienic is the adolescent girl? *Indian Journal of Community Medicine*. 2008; 33: 77– 80.
3. Burrows A, Johnson S. Girls' Experiences of Menarche and Menstruation. *Journal of Reproductive and Infant Psychology*. 2005; 23 :235-49.
4. Britton CJ. Learning about 'The Curse': an anthropological perspective on experiences of menstruation. *Women's Studies International Forum*. 1996; 19: 645-53.
5. Bhartiya A. Menstruation, Religion and Society. *International Journal of Social Science and Humanity*. 2013 Nov 1; 3(6):523.
6. Santana T, Wehbe N, Ziade F. Exploring dysmenorrhea and menstrual experiences among Lebanese female adolescents. *Eastern Mediterranean Health Journal*. 2012; 8: 857–863.
7. Oche MO, Umar AS, Gana GJ, Ango JT. Menstrual health; the unmet needs of adolescent girls in Sokoto, Nigeria. *Sci Res Essays*. 2012; 7: 410-418.  
*Scientific Research and Essays*
8. United Nations Children's Fund. Sharing simple facts: useful information about menstrual health and hygiene. New Delhi, India: Child's Environment Section, UNICEF House. 2008.

9. Mutunda A. Factors impacting on the menstrual hygiene among school going adolescent girls in Mongu district, Zambia. (Doctoral dissertation, School of Public Health, University of the Western Cape).
10. Bharadwaj S, Patkar A. Menstrual hygiene and management in developing countries: Taking stock. *Junction Social*. 2004 Nov.
11. Shukla S. Working on menstruation with girls in Mumbai, India: Vacha women's resource centre EQUALS. 2005; 15: 5.
12. Garg S, Sharma N, Sahay R. Socio-cultural aspects of menstruation in an urban slum in Delhi, India. *Reproductive Health Matters*. 2001; 9(17): 16-25.
13. Khanna A, Goyal RS, Bhawsar R. Menstrual practices and reproductive problems. A study of adolescent girls in Rajasthan. *Journal of Health Management*. 2005; 7(1): 91-107.
14. Moawed S. Indigenous practices of Saudi girls in Riyadh during their menstrual period. *Eastern Mediterranean Health Journal*. 2001; 7: 197–203.
15. Walker PL, Hudson T. *Chumash Healing: Changing Health and Medical Practices in an American Indian Society*. Malki Museum Press; 1993.
16. Fatusi A, Hindi M. Adolescents and youth in developing countries: Health and development issues in context. *Journal of Adolescence* 2010; 33: 499– 508.
17. Kisa S, Taskin L. Behavioral risk factors that predispose women to vaginal infections in Turkey. *Pakistan Journal of Medical Sciences*. 2010; 26: 800–864. <http://worldpopulationreview.com/world-cities/karachi-population>
18. World Health Organization. Adolescent health and development in nursing and midwifery education. Geneva7 WHO. 2004.
19. WHO. ADOLESCENT HEALTH AND DEVELOPMENT (2014) in nursing and midwifery education. Geneva, World Health Organization. WHO/ FCH/ CAH/04.4
20. Brooks-Gunn J, Ruble, D. The development of menstrual-related beliefs and behaviors during early adolescence. *Child Development*. 1982; 53: 1567-77.
21. Clarke AE, Ruble, D. Young adolescents' beliefs concerning menstruation. *Child Development*. 1978; 49: 231-4.
22. Grief, EB. & Ulman, KJ. The psychological impact of menarche on early adolescent females: a review of the literature. *Child Development*. 1982; 53: 1413–1430.



23. Koff E, Rierdan J, Jacobson S. The personal and interpersonal significance of menarche. *Journal of the American Academy of Child Psychiatry.* 1981; 20: 148-58.
24. Abioye-Kuteyi EA. Menstrual knowledge and practices amongst secondary school girls in Ile Ife, Nigeria. *The journal of the Royal Society for the Promotion of Health.* 2000; 120(1): 23-6.
25. Paria B, Bhattacharyya A, Das S. A comparative study on menstrual hygiene among urban and rural adolescent girls of West Bengal. *Journal of Family Medicine and Primary Care* 2014; 4: 413.
26. Thakre SB, Thakre SS, Reddy M, Rathi N, Pathak K, Ughade S. Menstrual hygiene: knowledge and practice among adolescent school girls of Saoner, Nagpur district. *Journal of Clinical Diagnosis.* 2011; 5(5): 1027-33.
27. Santina T, Wehbe N, Ziade FM, Nehme M. Assessment of Beliefs and Practices Relating to Menstrual Hygiene of Adolescent Girls in Lebanon. *International Journal of Health Sciences and Research (IJHSR).* 2013; 3(12): 75-88.
28. Aniebue UU, Anieb PN, Nwankwo TO. The impact of pre-menarcheal training on menstrual practices and hygiene of Nigerian school girls. *Pan African medical Journal.* 2009; 2.
29. Singh SP, Singh M, Arora M, Sen P. Knowledge assessment regarding puberty and menstruation among school adolescent girls of district varanasi, U.P. *Indian Journal Prevention and Social Medicine.* 2006; 37: 9–14.
30. Lee LK, Chen PCY, Lee KK, Kaur J. Menstruation among adolescent girls in Malaysia: a cross-sectional school survey. *Singapore Medicine Journal.* 2006; 47: 869–874.
31. Dhingra, R., Kumar, A., & Kour, M. Knowledge and practices related to menstruation among Tribal (Gujjar) adolescent girls. *Ethnomedicine.* 2009; 3: 43–48.
32. Tiwari H, Oza UN, Tiwari R. Knowledge, attitudes and beliefs about menarche of adolescent girls in Anand district, Gujarat. *Eastern Mediterranean Health Journal.* 2006;12: 428–433.
33. Sule SY, Ukweny JE. Menstrual experiences of adolescents in secondary school. *Turkish-German Gynecology Association.* 2007; 8: 7–14.
34. Dasgupta A, Sarkar M. Menstrual hygiene: How hygienic is the adolescent girl? *Indian Journal of Community Medicine.* 2008; 33: 77– 80.

35. Thuren BM. Opening doors and getting rid of shame: Experience of first menstruation in Valencia, Spain. *Women Studies International*. 1994; 17: 217-28.
36. Oxley T. Menstrual management: An exploratory study. *Feminism and Psychology*. 1998; 8: 185-91.
37. Adinma ED, Adinma J. Perceptions and practices of menstruation amongst Nigerian secondary school girls. *African Journal of Reproductive Health*. 2008; 12: 74–83.
38. Omidvar S, Begum K. Factors influencing hygienic practices during menses among girls from south India- A cross sectional study. *International Journal of Collaborative Research*. 2010; 2: 411–423.
39. Kumar A, Srivastava K. Cultural and social practices regarding menstruation among adolescent girls. *Soc Work Public Health* 2011; 26:594-604
40. Banikarim C, Chacko MR, Kelder SH. Prevalence and impact of dysmenorrhea on Hispanic female adolescents. *Archives of Pediatrics & Adolescent medicine*. 2000;154(12): 1226-9.