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Malaysian Journal of Medicine and Health Sciences (MJMHS)



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The Malaysian Journal of Medicine and Health Sciences (MJMHS) diterbitkan oleh Fakulti Perubatan dan Sains Kesihatan Universiti Putra Malaysia. adalah menjadi jurnal utama mengenai semua aspek perubatan dan sains kesihatan di Malaysia dan di peringkat antarabangsa. Tumpuan M penyelidikan dan pembangunan saintifik yang asal, isu-isu baru dan analisis dasar yang berkaitan dengan sains perubatan, bioperubatan dan klinikal Medicine and Health Sciences kini diindeks dalam pangkalan data berikut: Scopus, EBSCOhost, ISC, dan Rubrica.

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WHAT AFFECTS MENSTRUAL HYGIENE BEHAVIOUR OF FULL-DAY SCHOOL ADOLESCENTS?

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WHAT AFFECTS MENSTRUAL HYGIENE BEHAVIOUR OF FULL-DAY SCHOOL ADOLESCENTS?

ABSTRACT

Introduction: Because of full-day school system, adolescents spend more time at school than at home. A tight school schedule likely make school female adolescents neglect menstrual hygiene management; consequently, some reproductive health problems might arise. This study analyzed whether knowledge, attitudes, beliefs, availability of facilities, availability of information, and social support are correlated with menstrual hygiene behaviour of full-day school adolescents. **Methods:** This study used a correlation analysis with a cross sectional approach. It was conducted at a junior high school in Surabaya. Randomly elected as samples, 139 adolescents filled out questionnaires. Data were analyzed using the *Spearman's rho test*. **Results:** Knowledge ($p = 0.000$), attitudes ($p = 0.003$), beliefs ($p = 0.000$), availability of facilities ($p = 0.001$), availability of information ($p = 0.000$) and social support ($p = 0.004$) were associated with menstrual hygiene behaviour of full-day school adolescents. **Conclusion:** Knowledge, attitudes, beliefs, availability of facilities, availability of information and social support are related to menstrual hygiene behaviour of full-day school adolescents. Adolescents could possess menstrual hygiene behaviour as they have good knowledge, positive attitudes, and beliefs. Availability of facilities and information are also factors that support menstrual hygiene behaviour. Social support from parents, teachers, and peers prominently encourages adolescents to keep practicing menstrual hygiene behaviour while being at school.

Keywords: adolescents; schools; behaviour; menstrual hygiene; reproductive health

INTRODUCTION

The implementation of the full-day school system by the Indonesian government has caused adolescents to spend more time at school than at home. Adolescents spend about 8 to 9 hours at school a day. Most of them forget to change their sanitary pads because of their tight schedules at school (1). Education about adolescents' reproductive health is still not fully integrated into school curriculums in Indonesia (2). Adolescents are only taught about the reproductive process. Practical and theoretical lessons in regards to menstrual issues are not commonly given (3). Millions of women across the world experience reproductive tract infections, pelvic inflammatory diseases, and urinary tract diseases because they do not apply the practice of good menstrual hygiene (4).

The Indonesian Demographic and Health Survey reported that 25% of adolescent girls had not discussed menstruation with anyone before menarche and 17% did not know that menstruation is a physical sign of puberty (5). The prevalence of reproductive tract infections ranges from 17% to 44% among women across the world (7). Young women in developing countries occupy the highest incidence of reproductive tract infections, which are the second most prevalent public health problem (8).

In 2016, the Indonesian Ministry of Education and Culture reported that in more than 190,000 public schools in Indonesia, only one-fifth of the school toilets worked well (9). Access and facilities are needed by adolescents to perform menstrual hygiene at school optimally. Most schools in developing countries, especially in rural areas, still have inadequate facilities to support the management of adolescent menstrual hygiene (10, 11).

Many studies related to menstrual hygiene behaviour have been done. However, previous studies have not specifically discussed the factors which can affect the behaviour of adolescents in maintaining menstrual hygiene during school, especially in schools implementing the full-day school system. The purpose of this study was to analyze the relationship between

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3 knowledge, attitudes, beliefs, availability of facilities, availability of information, and social
4 support with the behaviour of menstrual hygiene among full-day adolescent students.
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8 9 **METHODS**

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11 This was a cross-sectional study involving 139 adolescents from a public junior high school in
12 Surabaya. The sampling method applied was simple random sampling. The independent
13 variables in this study were adolescents' knowledge, attitudes, beliefs, availability of facilities,
14 availability of information, and social support. The dependent variable in this study was
15 menstrual hygiene behaviour. The study was conducted in March 2020. Research respondents
16 in this study were 7th and 8th grade students at a public junior high school in Surabaya. The
17 inclusion criteria in this study consisted of (1) adolescents that are already experiencing
18 menstruation (2) adolescents who were willing to become respondents. The exclusion criteria
19 in this study included (1) adolescents who did not fully complete the research questionnaire (2)
20 adolescents who were absent during the survey. A characteristic questionnaire was used to give
21 an overview of respondents' identities, including their age, age of menarche, and grade. The
22 knowledge questionnaire contained nine close-ended statements where numerical responses
23 were divided into two categories, namely favourable (1, 2, 7, 8) and unfavourable (3, 4, 5, 6,
24 9). All items on the questionnaire had good validity scores, and the reliability testing had a
25 Cronbach's α score of 0.814. The adolescents' attitude questionnaire contained five statements
26 related to adolescent attitudes in performing menstrual hygiene. The statement was divided
27 into two types, namely favourable (1, 2, 5) and unfavourable (3, 4). The reliability of the
28 adolescent attitude questionnaire had a Cronbach's α score of 0.749, which indicated good
29 reliability. The adolescents' beliefs questionnaire contained five questions related to adolescent
30 beliefs in performing menstrual hygiene. The reliability testing had a Cronbach's α score of
31 0.801, which indicated good reliability. The availability of facilities questionnaire contained
32 four questions related to the availability of facilities and environmental conditions that support
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3 adolescent in practicing menstrual hygiene at school. The questionnaire was designed by the
4 researchers, but still referred to Lawrence Green's PRECEDE-PROCEED theory. All items on
5 the questionnaire had good validity scores, and the reliability testing had a Cronbach's α score
6 of 0.717, which indicated good reliability. The availability of information questionnaire
7 contained six questions related to access to information about menstrual hygiene obtained by
8 adolescents. The questionnaire was designed by the researchers, but still referred to Lawrence
9 Green's PRECEDE-PROCEED theory. All items on the questionnaire had good validity scores,
10 and the reliability testing had a Cronbach's α score of 0.775, which indicated good reliability.
11 The social support questionnaire contained six questions related to the social support that
12 adolescents perceive from people and their environment in performing menstrual hygiene. The
13 questionnaire was designed by the researchers, but still referred to Lawrence Green's
14 PRECEDE-PROCEED theory. All items on the questionnaire had a good validity scores and
15 the reliability testing had a Cronbach's α score of 0.817, which indicated very good reliability.
16 The menstrual hygiene behaviour questionnaire contained ten statements about adolescent
17 menstrual hygiene behaviour. Menstrual hygiene behaviour questionnaire was divided into two
18 groups, namely favourable (1, 3, 4, 5, 9, 10), and unfavourable (2, 6, 7, 8). All items on the
19 questionnaire had good validity scores and the reliability testing had a Cronbach's α score of
20 0.835, which indicated very good reliability.
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44 The results of the data obtained were then analyzed using descriptive analysis and bivariate
45 analysis. The descriptive data analysis was used to determine the percentage and frequency
46 distribution. Bivariate analysis was used to determine the relationship between variables. The
47 bivariate analysis in this study used the Spearman correlation analysis with $\alpha = 0.05$.
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54 RESULTS

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3 The majority of adolescents were 13 years old (49.6%), More than half of adolescents (79.1%)
4 had experienced menarche between 9 and 12 years of age. The majority of adolescents were in
5 the 8th grade (51.1%) (Table I).
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10 The majority of respondents had good knowledge about menstrual hygiene. Lack of knowledge
11 was exhibited in the incorrect answers related to the proper direction of washing genitals (Table
12 II). More than half of respondents had positive attitudes towards menstrual hygiene evidenced
13 by their answers strongly agreeing with statements about the importance of washing hands
14 before washing genitals (Table II).
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19 Respondents of this study had good knowledge of and proficiently practiced menstrual hygiene
20 (38.1%). There were some respondents who had good knowledge but practiced poor menstrual
21 hygiene (5.8%). Knowledge was found to have a positive and weak relationship with menstrual
22 hygiene behaviour among adolescents at school ($p = 0.000$). Attitude was found to have a
23 positive and weak correlation with menstrual hygiene behaviour among adolescents at school
24 ($p = 0.003$). The majority of respondents (38.1%) had a positive attitude and performed
25 menstrual hygiene well enough. There were respondents (29.5%) who had negative attitudes
26 but practiced menstrual hygiene quite well. Beliefs were found to have a positive and weak
27 relationship with menstrual hygiene behaviour among respondents ($p = 0.000$). Respondents
28 with beliefs that do not contradict health were found to practice menstrual hygiene quite well
29 (39.6%). Respondents with beliefs opposing health were also found to practice their menstrual
30 hygiene quite well (28.1%) (Table III).
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35 The availability of facilities was found to be related to menstrual hygiene behaviour among
36 adolescents at school ($p = 0.001$). The majority of respondents felt the availability of adequate
37 facilities was sufficient enough to support good menstrual hygiene behaviour (39.6%). Health
38 information received by adolescents was found to be related to their menstrual hygiene
39 behaviour at school ($p = 0.000$). The majority of adolescents had exposure to information and
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3 practiced moderate menstrual hygiene behaviours (55.4%). Social support was found to be
4 related to menstrual hygiene behaviour among respondents ($p = 0.004$). More than half of
5 adolescents received sufficient social support and practiced moderate menstrual hygiene
6 behaviour (41.0%).
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10 **DISCUSSION**

11
12 Adolescence is a critical period as these are formative years where pubertal, psychological, and
13 behavioural changes take place (15). Problems related to reproductive health are brought about
14 by a lack of information, understanding, and awareness (16, 17). Menstrual hygiene is one
15 component of personal hygiene that plays an important role in an adolescent's health status
16 (18).
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26 The majority of adolescents already understood the theory of menstrual hygiene well, but still
27 did not fully apply these concepts in real situations. This lack of understanding related to the
28 application of menstrual hygiene is due to the information and knowledge provided being
29 limited to theories and definitions of menstrual hygiene. This is also due to the discussion
30 surrounding menstrual hygiene that is still considered taboo by society. Similar results were
31 obtained by other studies (13, 20) where textbooks and curricula at schools did not discuss
32 much on menstruation topics, causing adolescents to have their knowledge limited to only the
33 biological processes of menstruation.
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44 The lack of latrines and clean water supplies affects menstrual hygiene behaviour and
45 endangers the physical and psychological health of adolescents in schools (3). This lack of
46 facilities causes adolescents to be suboptimal in performing menstrual hygiene even though
47 they have good knowledge of it. The availability of facilities should support adolescents in
48 practicing menstrual hygiene in school, and this includes having sanitary napkins and soap,
49 both of which are still not available.
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3 The majority of respondents already understood that good menstrual hygiene needs to be
4 applied to avoid illness and maintain their health. However, there were still many respondents
5 who thought practicing menstrual hygiene in school is not an important thing. There were still
6 many adolescents who changed their pads only when full. Similar findings were also seen in a
7 study conducted in Nepal and Phillipines (21, 22) where fewer adolescents replaced the
8 sanitary pads every 4 to 6 hours during menstruation.
9

10
11 Inadequate access to menstrual hygiene facilities can cause anxiety and stress, and hinder the
12 ability of adolescents to participate comfortably in school (22). Adolescents' beliefs about
13 menstrual hygiene will affect their performance of it in school because their beliefs affect their
14 way of thinking and will eventually form their behaviour. If an adolescent has a strong belief,
15 then the behaviour formed will be more lasting than an adolescent who has weak or conflicting
16 beliefs.
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18
19 Adolescents with the right beliefs will have the skills and become accustomed to always
20 maintaining menstrual hygiene (24, 25). Based on the results of the study, adolescents with no
21 conflicting beliefs but had lacking menstrual hygiene behaviours because were the result of
22 little to no exposure to information about and insufficient knowledge of menstrual hygiene.
23 Information and knowledge are also crucial as the basis of adolescents' mindsets to foster
24 beliefs and develop behaviour. Many studies have also concluded that increased knowledge
25 positively affects menstrual hygiene behaviours and reduces negative psychosocial impacts
26 (25).
27

28
29 The majority of adolescents in this study benefitted from the availability of menstrual hygiene
30 facilities in schools to assist them in performing menstrual hygiene. Some adolescents
31 complained that school bathrooms were uncomfortable to use as a place for menstrual hygiene.
32 These findings are comparable with the findings of other studies (27, 10) where adolescents'
33 schools still did not provide adequate facilities to support adolescents in performing menstrual
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3 hygiene. Availability of facilities that support menstrual hygiene at school provide adolescents
4 with the convenience to practice menstrual hygiene outside the home. This is especially true
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6 for adolescents attending schools using the full day school system, where more time is spent in
7
8 school than at home.
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11
12 The majority of adolescents in this study benefited from availability of information to assist
13 them in obtaining information and knowledge about menstrual hygiene. Participants received
14
15 the most information from social media. There are many positive impacts of social media when
16
17 viewed through the importance and essential dynamism of online content. The interactive
18
19 functionalities of social media may also shape what health-related information is accessible to
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21 adolescents (27).
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26 In an effort to increase adolescents' knowledge about menstrual hygiene, especially in the
27
28 school environment, what can be done is intensify the dissemination of information about
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30 menstrual hygiene. The physiology of menstruation and its related health issues should also be
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32 taught in schools before the age of puberty (28). Incorporating menstrual education into the
33
34 school curriculum can be a solution to overcome menstrual hygiene problems and contribute
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36 to eliminating the taboo related to menstrual hygiene (25).
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40 The support and presence of those closest to adolescents are essential to increase trust and
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42 provide strong motivation to adolescents in performing menstrual hygiene. Good relationships
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44 and communication between parents and children can increase self-esteem and breed good
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46 behavior (30, 31). Support can come in the form of mothers discussing menstrual health with
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48 adolescents, such as by always teaching them to change pads and wear comfortable underwear
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50 (32, 33).
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53 The results of the present study conform to other findings where mothers of adolescents were
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55 identified as their main source of information about menstruation (34, 4). Social support from
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57 parents, peers, and teachers will increase sources of information about menstrual hygiene for
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3 adolescents. Information is one of the factors that influences a person directly or indirectly in
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5 implementing behaviour. The more easily and frequently someone receives and is exposed to
6
7 information in their environment, the more knowledge they have. Adolescents who receive
8
9 social support will feel emotionally relieved, get advice, or have positive impressions of
10
11 themselves. Supportive social support will improve adolescent menstrual hygiene practices.
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14 15 16 **CONCLUSION**

17
18 There are many factors affecting adolescents' menstrual hygiene behaviour at school. These
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20 factors consist of internal factors in adolescents and external factors derived from their
21
22 environment. To apply menstrual hygiene behaviour in school, adolescents need good
23
24 knowledge, attitudes, and beliefs about menstrual hygiene and how to conduct it properly and
25
26 appropriately. Schools that provide supporting facilities will make it easier for adolescents to
27
28 apply menstrual hygiene behaviour while at school. Ease of access to information can also
29
30 support adolescents in increasing knowledge about menstrual hygiene. Menstrual hygiene
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32 behaviours are also reinforced by the social support of parents, peers, and teachers. Besides
33
34 that, social support obtained can also increase knowledge and shape the attitudes and beliefs of
35
36 adolescents to perform menstrual hygiene.
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41 42 **ACKNOWLEDGMENTS**

43
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45
46 this study.
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50 51 **REFERENCES**

- 52 1. Phonna R, Diba F, Yuswardi, Maulina. Efforts to Keep Cleaning when Menstruation
53 Period in Adolescents. *Idea Nurs J.* 2017;IX(2).
- 54 2. Suariyani NLP, Kurniati DPY, Widyantini DN, Artha LPW. Reproductive health
55 services for adolescents with hearing impairment in Indonesia: Expectations and reality.
56 *J Prev Med Public Heal.* 2020 Nov;53(6):487–91.
- 57 3. Gultie T, Hailu D, Workineh Y. Age of menarche and knowledge about menstrual
58 hygiene management among adolescent school girls in amhara province, Ethiopia:
59 Implication to health care workers & school teachers. *PLoS One.* 2014;9(9):1–9.
60

- 1
- 2
- 3
4. Ameade EPK, Garti HA. Relationship between Female University Students' Knowledge on Menstruation and Their Menstrual Hygiene Practices: A Study in Tamale, Ghana. *Adv Prev Med.* 2016;2016:1–10.
- 5
- 6
- 7
8. SDKI. Survei demografi dan kesehatan Indonesia 2012 (National Survey of Demography and Health). 2012;17.
- 9
10. Coast E, Lattof SR, Strong J. Puberty and menstruation knowledge among young adolescents in low- and middle-income countries: a scoping review. *Int J Public Health.* 2019;64(2):293–304.
- 11
- 12
13. Sharma D, Naveen GK, Thakare MM. Prevalence of reproductive tract infection symptoms and treatment-seeking behavior among women: A community-based study. *Indian J Sex Transm Dis AIDS.* 2018;39(2):79–83.
- 14
15. Durai V, Varadharajan S, Anitha R. Muthuthandavan. Reproductive tract infections in rural India – A population-based study. *J Fam Med Prim Care.* 2019;6(2):169–70.
- 16
17. Davis J, Macintyre A, Odagiri M, Suriastini W, Cordova A, Huggett C, et al. Menstrual hygiene management and school absenteeism among adolescent students in Indonesia: evidence from a cross-sectional school-based survey. *Trop Med Int Heal.* 2018;23(12):1350–63.
- 18
19. Chinyama J, Chipungu J, Rudd C, Mwale M, Verstraete L, Sikamo C, et al. Menstrual hygiene management in rural schools of Zambia: a descriptive study of knowledge, experiences and challenges faced by schoolgirls. *BMC Public Health.* 2019;19(1):16.
- 20
21. Mucherah W, Thomas K. Reducing barriers to primary school education for girls in rural Kenya: reusable pads' intervention. *Int J Adolesc Med Health.* 2019;31(3).
- 22
23. Salau OR, Ogunfowokan AA. Pubertal Communication Between School Nurses and Adolescent Girls in Ile-Ife, Nigeria. *J Sch Nurs.* 2019;35(2):147–56.
- 24
25. Rastogi S, Khanna A, Mathur P. Educational interventions to improve menstrual health: Approaches and challenges. *Int J Adolesc Med Health.* 2019;6–11.
- 26
27. Nursalam. Metodologi penelitian ilmu keperawatan. 4th ed. Jakarta: Salemba Medika; 2016.
- 28
29. Dudeja P, Sindhu A, Shankar P, Gadekar T. A cross-sectional study to assess awareness about menstruation in adolescent girls of an urban slum in western Maharashtra. *Int J Adolesc Med Health.* 2018;30(4):8–12.
- 30
31. Chandra-Mouli V, Patel SV. Mapping the knowledge and understanding of menarche, menstrual hygiene and menstrual health among adolescent girls in low- and middle-income countries. Vol. 14, *Reproductive Health.* BioMed Central Ltd.; 2017.
- 32
33. Yufiarti, Nadiroh, Rasminto. Personality and Motivation to Live Healthily in Relation to Understandings of Reproductive Health. *Int J Innov Creat Chang.* 2019;8(4):292–309.
- 34
35. Chandar D, Vaishnavi Y, Priyan S, Ganesh Kumar S. Awareness and practices of menstrual hygiene among females of reproductive age in rural Puducherry - A mixed method study. *Int J Adolesc Med Health.* 2018;1–8.
- 36
37. Lahme AM, Stern R, Cooper D. Factors impacting on menstrual hygiene and their implications for health promotion. *Glob Health Promot.* 2018;25(1):54–62.
- 38
39. Katsuno C, Gregorio ER, Lomboy MFTC, Nonaka D, Hernandez PMR, Estrada CAM, et al. Quality of public school toilets and the frequency of changing sanitary napkins among students in public secondary schools in the City of Manila, Philippines. *Trop Med Health.* 2019;47(1):1–10.
- 40
41. Yadav RN, Joshi S, Poudel R, Pandeya P. Knowledge, Attitude, and Practice on Menstrual Hygiene Management among School Adolescents. *J Nepal Health Res Counc.* 2018 Jan;15(3):212–6.
- 42
43. Morgan C, Bowling M, Bartram J, Lyn Kayser G. Water, sanitation, and hygiene in
- 44
- 45
- 46
- 47
- 48
- 49
- 50
- 51
- 52
- 53
- 54
- 55
- 56
- 57
- 58
- 59
- 60

- 1
2
3 schools: Status and implications of low coverage in Ethiopia, Kenya, Mozambique,
4 Rwanda, Uganda, and Zambia. *Int J Hyg Environ Health*. 2017;220(6):950–9.
5
6 23. Kaur R, Kaur K, Kaur R. Menstrual Hygiene, Management, and Waste Disposal:
7 Practices and Challenges Faced by Girls/Women of Developing Countries. *J Environ*
8 *Public Health*. 2018;2018.
9
10 24. Shah V, Nabwera HM, Sosseh F, Jallow Y, Comma E, Keita O, et al. A rite of passage:
11 A mixed methodology study about knowledge, perceptions and practices of menstrual
12 hygiene management in rural Gambia. *BMC Public Health*. 2019 Mar;19(1):1–15.
13
14 25. VanLeeuwen C, Torondel B. Exploring menstrual practices and potential acceptability
15 of reusable menstrual underwear among a middle eastern population living in a refugee
16 setting. *Int J Womens Health*. 2018;10:349–60.
17
18 26. Hennegan J, Sol L. Confidence to manage menstruation at home and at school: findings
19 from a cross-sectional survey of schoolgirls in rural Bangladesh. *Cult Heal Sex*.
20 2019;0(0):1–20.
21
22 27. Goodyear VA, Armour KM, Wood H. Young people and their engagement with health-
23 related social media: new perspectives. *Sport Educ Soc*. 2019 Sep;24(7):673–88.
24
25 28. Afsari A, Mirghafourvand M, Valizadeh S, Abbasnezhadeh M, Galshi M, Fatahi S. The
26 effects of educating mothers and girls on the girls' attitudes toward puberty health: A
27 randomized controlled trial. *Int J Adolesc Med Health*. 2015;2015:5–10.
28
29 29. Keizer R, Helmerhorst KOW, van Rijn-van Gelderen L. Perceived Quality of the
30 Mother–Adolescent and Father–Adolescent Attachment Relationship and Adolescents'
31 Self-Esteem. *J Youth Adolesc*. 2019;48(6):1203.
32
33 30. Bireda AD, Pillay J. Perceived parent–child communication and well-being among
34 Ethiopian adolescents. *Int J Adolesc Youth*. 2018 Jan;23(1):109–17.
35
36 31. Hahn RA, Truman BI. Education improves public health and promotes health equity. *Int*
37 *J Heal Serv*. 2015 Oct;45(4):657–78.
38
39 32. Thomas PA, Liu H, Umberson D. Family Relationships and Well-Being. *Innov Aging*.
40 2017 Nov;1(3).
41
42 33. Sarkar I, Dobe M, Dasgupta A, Basu R, Shahbabu B. Determinants of menstrual hygiene
43 among school going adolescent girls in a rural area of West Bengal. 2017;
44
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Table I. Adolescents characteristics. (N=139)

Characteristics	f	%	
Age	12 years	7	5.0
	13 years	69	49.6
	14 years	59	42.4
	15 years	4	2.9
	16 years	0	0
Age of menarche	9-12 years	110	79.1
	13-14 years	27	19.4
	>14 years	2	1.4
Grade	7th	68	48.9
	8th	71	51.1

Table II. Item Analysis of Factors Affecting Menstrual Hygiene Behavior (N=139)

Variable	f	%
Knowledge		
Knowing the impact of poor menstrual hygiene	79	56.8
Knowing how to store sanitary pads properly	48	34.5
Knowing how to wash the vagina properly	12	8.6
Attitudes		
Feel the need to apply reproductive organ care during menstruation at school	81	58.3
Preventing the impact of poor menstrual hygiene	58	41.7
Beliefs		
Confident in practicing menstrual hygiene at school	56	40.3
Practicing menstrual hygiene can improve health	83	59.7
Availability of facilities		
Availability of sanitary pads disposal	21	15.1
Availability of clean running water	84	60.4
Availability of soap	34	24.5
Availability of information		
Information about the impact of lack of menstrual hygiene	108	77.7
Information availability in school and media	31	23.3
Social Support		
Instrumental support for menstrual hygiene facilities	17	12.2
Informational support provided by parents	83	59.7
Encouragement to always practice menstrual hygiene	39	28.1
Menstrual Hygiene Behavior		
Use proper underwear	21	15.1

Variable	f	%
Use of sanitary pads during menstruation	94	67.6
Conduct health checks when menstrual problems occur	24	17.3

Table III Factors influencing Menstrual Hygiene Behavior (N=139)

Variable	Menstrual Hygiene Behavior						Total		Spearman Rho test	
	Poor		Moderate		Good		N	%	p	r
	f	%	f	%	f	%				
Knowledge										
Good	5	3.6	7	5.0	0	0.0	12	8.6	0.000	0.317
Moderate	11	7.9	34	24.5	3	2.2	48	34.5		
Poor	8	5.8	53	38.1	18	12.9	79	56.8		
Attitudes										
Positive	14	10.1	41	29.5	3	2.2	58	41.7	0.003	0.249
Negative	10	7.2	53	38.1	18	12.9	81	58.3		
Beliefs										
Contrary to health behavior	16	11.5	39	28.1	1	0.7	83	59.7	0.000	0.355
Not contradict to health behavior	8	33.3	55	39.6	20	14.4	56	40.3		
Availability of facilities										
Good	12	8.6	21	15.1	1	0.7	34	24.5	0.001	0.286
Moderate	12	8.6	55	39.6	17	12.2	84	60.4		
Poor	0	0.0	18	12.9	3	2.2	21	15.1		
Availability of information										
Exposed	13	9.4	17	12.2	1	0.7	31	22.3	0.000	0.346
Less Exposed	11	7.9	77	55.4	20	14.4	108	77.7		
Social Support										
Good	8	5.8	29	20.9	2	1.4	39	28.1	0.004	0.245
Moderate	15	10.8	57	41.0	11	7.9	83	59.7		
Poor	1	0.7	8	5.8	8	5.8	17	12.2		