**Al- Quds University**

**School of Public Health**

# Knowledge, Attitudes and Practices Regarding Menstruation among Adolescents, Female in the Gaza Strip

**Maram Saeed Mustafa Alshurafa**

**M. Sc. Thesis**

**Jerusalem- Palestine**

**1445/2023**

# Knowledge, Attitudes and Practices Regarding Menstruation among Adolescents, Female in the Gaza Strip

Prepared by
**Maram Saeed Mustafa Alshurafa**

Bachelor Degree of Pharmacy- Al Azhar University

**Supervisor: Dr. Suha Baloushah**

Thesis Submitted in Partial Fulfillment of Requirements for the Degree of Master of Public Health/Epidemiology
School of Public Health- Al-Quds University

**1445 / 2023**

**Al-Quds University**

**Deanship of Graduate Studies**

**School of Public Health**

## Thesis Approval

# Knowledge, Attitudes and Practices Regarding Menstruation among Adolescents, Female in the Gaza Strip

Prepared by: Maram Saeed Mustafa Alshurafa

Registration No: 22011458

Supervisor: Dr. Suha Baloushah

Master thesis submitted and accepted, Date 12/8/2023

The names and signatures of examining committee members are as follows:

1. Head of committee: Dr. Suha Baloushah Signature
2. Internal examiner: Dr. Hazem Agha Signature
3. External examiner: Dr. Mamdouh Wahba Signature

**Jerusalem – Palestine**

**1445 - 2023**

**Dedication**

*When you are surrounded by people who genuinely love and support you, even challenging work become effortless.*

***To my mother and father*** *who continue being the source of encouragement and inspiration to me throughout my life. No matter how much I praise you, I will not fulfill your right. All the words of thanks cannot describe my feelings. You are the light of my life. I am lucky to have both of you.*

*To my beloved sister Marah, you have always been by my side.*

*To my beloved nieces, Leen & Nadeen.*

*To my supportive family Mohammed, Abdullah, Abeer and Wafaa; thanks to be there.*

*To my best friend Manar for her support to overcome all the obstacles throughout my life.*

*To my dear friend Dina who made difficult time easy and to all my friends.*

*Never forgotten my dear uncle Dr. Taisser for his endless support, he is a continuous source of motivation.*

*To everyone who helped me to finish this study.*

## Declaration

I certify that this thesis submitted for the degree of Master, is the result of my own research, except where otherwise acknowledged, and that this study (or any part of the same) has not be submitted for a higher degree to any other university or institution.

Signed: …… 

**Maram Saeed Mustafa Alshurafa**

Date: 12/8/2023

## Acknowledgementd

My deepest gratitude goes to God who has provided all that was needed to complete this project.

I would like to express my deep gratitude to everyone who contributed to the success of this work, unless their help and assistance it would not have been completed.

I would like to express my special thanks to my supervisor Dr. Suha Baloushah who helped, advised and added her treasured valued touches in each study step. She is a dignified and respectful teacher.

My special thanks to Professor Dr. Yehia Abed, Dr. Bassam Abu Hamad and Dr. Khitam Abu Hamad for the tremendous support and efforts provided throughout the past years. Thank you for creating such a great environment to learn.

I am also grateful to all employees at the School of Public Health for their assistance during my study years.

Thankful to my uncle Dr. Taisser who advise, follow and support all the time.

I would like to express my sincere thankfulness to my brother Dr. Ahmed Abu Shaaban for his understanding and encouragement all the time.

My appreciation goes to the administration of School Health Department in the Ministry of Education for facilitating data collection process.

I would like to thank all schoolgirls who participated in the study whose participation was a milestone in the completion of this work.

Many thanks for the hidden hands that stand behind my work.

**Maram Saeed Mustafa Alshurafa**

## Abstract

*Menstruation is a physiological phenomenon that begins in females in adolescent age. However, it is a significant milestone in a girl's development as a sexual and reproductive being. Adolescent girls do not have adequate knowledge about the abnormalities and healthy practices to be followed during menstruation which might sometimes result into adverse outcomes. This study aimed to explore the current level of knowledge, attitude and menstrual hygiene practices during menstruation. This study used mixed method approach understand the phenomena under investigation, using a combination between quantitative (interviewed questionnaire) and qualitative paradigm (focus group discussion with school girls). The study was applied among 397 school girls between 12-17 years of age were selected by multistage sampling technique from governmental preparatory and secondary schools located in the Gaza Strip. Data consisted of menstrual and menstrual hygiene knowledge, menstrual and menstrual hygiene attitudes, menstrual hygiene practices, household and school environment. Quantitative data were analyzed using SPSS version 25 while qualitative by using MAXQUDA version 10. Participants' mean age and menarche age were (14.9±1.55 years) and (13.11±1.17 years), respectively. Before menarche (59.7%) of the girls were aware about menstruation and mother was prime source of information (79.1%) in most of the study subjects. More than third of the girls in the study were not aware of the source of the bleeding. Only (37%) of participants have a good knowledge about menstruation while very few (4.3%) have good attitude and about half of participants (53.4%) express good menstrual hygiene practices. Majority of participants used sanitary napkins (98.5%), and (85.9%) showered during menstruation. Moreover, they reported that school toilets aren't clean with poor supply for soap and papers. A statistically significant relationship was found between knowledge and age; girls of >14y had adequate knowledge comparing with girls of ≤14y. Girls who live in Gaza City had better knowledge and attitudes than girls from Khan Yunus and Rafah respectively.*

*The results demonstrated that girls of grade eleven have a better menstrual hygiene practices than girls from grade ten. Study findings highlighted the need of adolescent girls to have accurate and adequate information about menstruation. Hence, a national intervention program is needed to increase awareness regarding menstruation among adolescent girls especially who are living in the south of Gaza Strip.*

## Table of Contents

## List of Tables

## List of Figures

## List of Annexes

## List of Abbreviations

| | |
|---|---|
| **FGD** | Focus Group Discussion |
| **GS** | Gaza Strip |
| **KAP** | Knowledge, Attitude, Practices |
| **LMIC** | Low- and Middle-Income Countries |
| **MHM** | Menstrual Hygiene Management |
| **MHMP** | Menstrual Hygiene Management Practices |
| **MoEHE** | Ministry of Education and Higher Education |
| **OCHA** | The United Nations Office for the Coordination of Humanitarian Affairs |
| **PCBS** | Palestinian Central Bureau of Statistics |
| **PCAH** | Palestinian Coalition for Adolescent Health |
| **SoP** | State of Palestine |
| **UNFPA** | United Nations Population Fund |
| **UNRWA** | United Nations for Refugee and Works Agency |
| **WASH** | Water, Sanitation and Hygiene |
| **WB** | West Bank |
| **WFP** | World Food Program |
| **WHO** | World Health Organization |

# Chapter One

## Introduction

### 1.1 Background

Adolescence is the phase of life between childhood and adulthood, from ages ten to nineteen years old. It is a unique stage of human development, as it is considered to begin with puberty which includes physical, emotional, cognitive growth, and development (Deshmukh et al, 2019). The period of adolescence is of particular concern because, in low- and middle-income settings, myths and socio-cultural restrictions create barriers for adolescents to acquire accurate information about menstruation which is a milestone event in a girl's life and the beginning of reproductive life (Mohammed & Larsen-Reindorf, 2020). Although the occurrence of menstruation is a sign of normal female reproductive functions, it is surrounded by a number of myths or misconceptions (Mukherjee et al., 2020) and girls do not feel comfortable discussing menstruation with other people in public or even at home because it can be a very taboo topic as they remain hesitant to seek help regarding their menstrual problems.

Providing adolescent girls with sufficient information about menstruation before menarche may help them see it as a normal occurrence and they are typically expected to learn the most about menstruation from their parents and close family members. Chandra-Mouli and Patel (2020) in their review reported that girls in majority of the developing countries enter puberty with knowledge gaps and mistaken beliefs about menstruation. Most of the time, menarche provides a very negative effect on girl’s minds and their attitudes toward menstruation have an impact on how hygienically they behave while they are bleeding during their period (Kaur R., Kaur K., & Kaur R., 2018). For girls to successfully transition out of the difficult time of puberty, their families, particularly their mothers, play a crucial role in their education, information transformation, and health practices (Nash et al., 2019). Adolescent girls have substantial lacuna in the knowledge towards menstruation and menstrual hygiene; it has been reported that 40–45% of adolescent school girls have poor knowledge and unsafe hygienic practice regarding their menstrual bleeding (Al Mutairi & Jahan, 2021).

Menstrual hygiene management (MHM) is an important aspect of reproductive health. It refers to the effective management of menstrual bleeding by women and girls, which if not handled appropriately can cause several health problems (UNFPA, 2020). It is characterized by practices such as the type of absorbent material used and the frequency changed, associated body washing, the methods of washing, drying and storing reusable pads. MHM practices vary by socio-cultural context, educational background and economic status, and there is wide variation between and within countries (Torondel et al., 2018). Inappropriate management of menstrual hygiene can result in vaginal thrush, urinary tract infections, pelvic inflammatory disorders, unpleasant odor, stained clothing, and eventually embarrassment, which negatively impacts on the girl's dignity (Mudi, Pradhan & Meher, 2023).

Challenges faced by adolescent girls in low and middle-income countries concerning effective menstrual hygiene management include lack of access to clean, effective absorbents; inadequate facilities to change, clean, and dispose of absorbents; lack of access to soap and water; and lack of privacy (Nnennaya et al., 2021). Globally, at least 500 million women and girls lack adequate facilities for menstrual hygiene management and Lack of WASH (water, sanitation, and hygiene) in multiple places (World Bank, 2018). Other significant barriers as cultural beliefs frequently influence menstrual practices, such as the types of materials that girls and women use, their methods for disposing of menstrual waste, and their preferences for how and where to wash and dry reusable materials (Schmitt et al., 2017). Taboos and socio-cultural restrictions are the main factors that hamper menstruation and its practices. As a result, adolescent girls are still remaining ignorant of the scientific facts and hygienic health practices of menstruation which produces harmful health outcomes among young girls (Kumari, 2022). Family and cultural practices also play significant role on adolescent girl’s overall health and well-being. Lack of support from teachers, teasing by peers when accidental menstrual soiling of clothes occurs, poor familial support, limited economic resources to purchase supplies, inadequate water, and sanitation facilities at school all of these obstacles hinder the improvement of menstrual hygiene practices (Kuhlmann, Henry & Wall, 2017).

## 1.2 Problem statement

Menstruation is considered a private issue, making it difficult to speak about it in public, mostly avoided, many girls are not properly prepared especially in a context like Gaza Strip (GS). Menstrual hygiene is an inevitable part of a woman's life. Various aspects such as physiology, pathology, and psychology of menstruation have been found to associate with the health and well-being of women. The knowledge and attitude toward menstruation and menstrual hygiene practice are affected by many factors, including social, cultural, economic, and religious background. In the study context and despite the globalization and openness that the world is experiencing, the Palestinian society still maintains its identity; the occupation may have a role in this; being careful in discussion of reproductive and sexual health issues in any session, as these matters are special for adults or married adults. This makes it difficult for adolescents to form knowledge or resort to other unreliable sources. Since discussing sexuality is a taboo, sufficient knowledge is exceedingly uncommon, and frequently ignored. Unmarried girls hardly ever mentioned having access to this kind of information.

The consequences of inadequate knowledge and poor practice of menstrual hygiene will increase the incidence of reproductive tract infection which may result in a significant negative impact on a woman's health including chronic pelvic pain, dysmenorrhea (painful periods), and severe cases of infertility (Khanal et al., 2022).. Globally, focusing on the health status of adolescent girls in a conflict area is brittle and this contradicts the commitment of the Sustainable Development Goals 3 (SDGs) to ensure healthy lives and promote well-being for all at all ages.

According to local research, there is a gap in adolescents' awareness about menstruation, sexual relationships, important danger signs during pregnancy, delivery, and the postpartum period and how to stay healthy (Abu Hamad et al., 2017).Very little attention has been paid to adolescents; menstrual hygiene and proper self-care play a vital role in their health and wellbeing. Therefore, the need for this research is particularly important to add to our knowledge the existing level of knowledge, attitudes, and practice toward menstrual hygiene among adolescents to develop effective strategic interventions and raise recommendations to policymakers for enhancement.

## 1.3 Justification

The Palestinian community in the GS is already victimized with long term vulnerability affecting all sectors, of them the adolescents were drastically influenced. In Gaza, adolescents (aged 10-19) comprise 23% of the population, but unlike young children and youth, little is known about their specific health status (Abu Hamad et al., 2017). They are dealing with a wide range of health issues brought on by the prolonged conflict in Gaza, which has been accompanied by a 16-year embargo and suffering (Abu Hamad, Jones & Gercama ,2021). However, there are a number of obstacles that prohibit adolescents in Gaza from getting SRH services as financial difficulties, trouble accessing services, social reasons preventing them from receiving services and being busy/having no time (21%) all contributed to the condition not requiring treatment (Abu Hamad et al., 2017). Lack of access to education on sexual and reproductive health restricts girls from managing their menstrual hygiene thus negatively affecting their physical, psychological, and general quality of life. Adolescents are "future" of any geographical area, thus investment in their health is effective for long term.

This study considers the first study that investigate the female adolescent knowledge, attitude and practice toward menstruation in GS. Improved menstrual hygienic practices are a very important aspect of the health of girls in homes, schools, and the community. As aforementioned, this is the first study of its kind to handle this topic. It will add to the knowledge about the current situation of the practice of MH. Hence, the results of this study will give an evident picture of students' knowledge about menstrual hygiene practices and to what extent school facilities are adequate. The result of the study will help the decision-maker with better planning, better implementation, guide decisions making and set a strategy that improves adolescent health, and improves their awareness and practice to manage their menstrual hygiene practice.

## 1.4 Study objectives

### 1.4.1 General objective

Is to explore the level of knowledge, attitudes and practices, about menstruation at governmental school girl's in the Gaza Strip as to adopt recommendations to promote menstrual hygiene.

### 1.4.2 Specific objectives

1. To appraise association of sociodemographic characteristics with knowledge and attitude toward menstruation among governmental adolescent school girl's.
2. To appraise association of sociodemographic characteristics with knowledge, attitude and practice of MHM among governmental adolescent school girl's.
3. To assess the adequacy of MHM facilities among governmental schools' girls from the adolescent perspective.
4. To assess the parent's role during menstruation from adolescent perspective.
5. To identify sociocultural practices related to menstruation among adolescent girls.
6. To explore the access and barriers to the use of sanitary pads among adolescent girls.

## 1.5 Research questions

1. What is the level of knowledge about menstruation among the adolescents?
2. What are the attitudes towards menstruation among the adolescent girls?
3. What is the current sociocultural practice related to menstruation among the adolescent girls?
4. What is the source of information about menstruation and menstrual hygiene practices?
5. What is the knowledge towards menstrual MHM among the adolescent female?
6. What are the attitudes towards menstrual MHM among the adolescent female?
7. What are the practices of female adolescent regarding MHM?
8. What is the role of Palestinian parents in supporting their daughter during menstruation?
9. What are the barriers to the continuous use of sanitary pads among adolescents in the GS?
10. Are there adequate menstrual hygiene facilities at governmental schools' girl from student perspective?
11. Are the female adolescent receive a health education regarding menstruation at governmental schools?

## 1.6 Study context

### 1.6.1 Demographic context

The entire area of historical Palestine is about 27,000 square kilometers, Palestine stretches from Ras Al Naqoura in the north to Rafah in the south. Palestine is boarded by Lebanon in the north, the Gulf of Aqaba in the south, Syria, and Jordan in the east, and Egypt and the Mediterranean Sea in the west. Now the state of Palestine comprises the WB and the GS. The GS, is a self-governing Palestinian territory, is divided into five governorates: North Gaza, Gaza City, Mid Zone, Khan Yunus and Rafah with a total area of 365 square kilometers and with a high population density; of 5855 persons per Square km by the end of 2021 (PCBS, 2022/1) which has many social and service provision implications. Based on population estimates prepared by PCBS, there are about 2.17 million Palestinians in the GS in mid-2022; of whom 1.10 million males and 1.07 million females (PCBS, 2022/2). Also, PCBS indicates that the Palestinian society can be defined as a young one, where persons aged less than 14 constituted (38%) of the total population at mid-2022; of whom 36% in the WB and 41% in GS, the increase of this age group could be referred to the high fertility rate in the Palestinian society (PCBS, 2022/2).

### 1.6.2 Adolescent health services in the state of Palestine

Over the past years, the Palestinian health care system had been developing in dynamic way to face the instability of the Palestinian situation. The four major providers of health care services in Palestine are: the MOH, UNRWA, Non-Governmental Organizations (NGOs) and the private sector. The Ministry is responsible for a significant portion of health care delivery, including SRH (MOH, 2017), and is also the regulator and supervisor of all health services. The focus of the health system tends to be reactive and concerned with emergencies and physical injuries.

The Palestinian health care system is generally overstretched due to the multitude of challenges imposed by the occupation, the division between Gaza and the WB and decreasing budgets. Health services for adolescents are delivered through two healthcare sectors: primary care and specialty care involving multiple providers and institutions with some providers focusing on specific areas or subpopulations of adolescents. Primary care services include routine screenings and checkups, immunization, diet and nutrition, school health services and general assessment for disorders and risk factors. While specialty care

services focus on specific health needs including areas of chronic illnesses, mental health, sexual and reproductive health, oral health, and substance use treatment and prevention. Some primary care settings offer specialty health services while some primary care services may be available within specialty clinics (PCAH, 2020). Adolescence is also a critical period because it is a time when individuals can gain positive health, social behaviors and attitudes as well as social, educational and work skills that are all pivotal for personal development and learning.

### 1.6.3 School health program

The Ministry of Education is committed to establishing an appropriate school environment that provides a safe and healthy learning atmosphere for all members of the school community. Also providing health care to build future generations; including vaccinations, investigation tests and follow up of pathological conditions in oral and dental health. Besides, health education and promotion to enhance healthy lifestyle, personal and public hygiene, addiction and smoking, physical exercise and reproductive health. Equally important, proper and balanced nutrition for students in schools is an educational and health priority.

#### 1.6.3.1 Sexual and reproductive health in schools

Comprehensive and age-appropriate education on sexual and reproductive health and rights is not provided in schools, although there were manuals developed for training teachers on sexual and reproductive health and rights. However, the awareness activities on SRH in schools are held in coordination with the MOH; but not in a regular manner. It depends on the support provided by partner institutions or according to the request of each particular school.

In the past few years, education on SRH has been incorporated into the school curriculum. Also, the MoEHE organized several training courses for teachers on SRH curriculum and guidance materials. Nevertheless, it is unclear to what extent this curriculum is followed and applied. SRH education in Palestine is a controversial subject circumscribed by political, economic, cultural, and religious factors. Furthermore, the absence of sexual and reproductive health in school curricula represents a constraint on efforts to raise children's awareness of their rights to protect their bodies and break the silence around sexual harassment and rape.

#### 1.6.3.2 Socio-economic status

Most families reside in houses of high population and limited privacy, which has detrimental impacts on females and adolescent females. Traditional culture maintains a strong hierarchy with a valued dependence over the figurehead, women and girls have limited participation in family decisions so they feel less valuable than males. Despite societal taboos are major obstacles to informed discussions about sexual and reproductive health issues, particularly in relation to young people, Palestinian girls are also vulnerable to child marriage and pregnancy, they face considerable pressure from their families to marry early in order to uphold 'honour' and also to relieve economic hardship.

Generally, education is highly valued among families across the State of Palestine, this is represented by a high percentage of enrollment rate for females (93.86%) in the academic year 2020/2021 in the GS (MoEHE, 2021). In consequence, the literacy rate for persons aged 15 years and above among the population is 97.7 % (PCBS, 2021). Schools provide one of the only socially approved external locations where Gaza's girls can begin to imagine lives beyond the restrictive boundaries of the household. Schools in the student's life play an essential role in building their skills and developing intelligence that can be utilized to achieve their goals in life (Huitt, 2011).

According to the World Food Program (WFP), GS current economic situation is unsustainable, it depends on a consumption economy mainly and not a productive one. The internal political division between the Palestinian authorities in the WB and the GS since 2007, resulted in a split of the Palestinian civil service ad increased the hardships for Gaza's population (OCHA, 2017). Besides the blockade imposed by "Israel occupation" has severely impacted movements in and out of the GS especially referred patients for treatment abroad. There are stifling living conditions for Gazans as providing basic human needs becomes a complicated goal to achieve due to the high rates of poverty and unemployment, respectively nearly seven out of ten people are poor, half of the workforce is unemployed, and seven out of ten households are food insecure (WFP, 2021). Since 95% of the population lacks access to clean water, beyond shortage of energy continues to be a crisis that affects practically every area of daily life; a significant negative impact on the accessibility of critical services, particularly those related to health and sanitation, the manufacturing and agricultural sectors (UNRWA, 2021).

## 1.7 Operational definitions

**Adolescent female (in this study):** A girl between the ages of 12 to 17 years old.

**Menstrual hygiene management (MHM):** Women and adolescent girls are using a clean menstrual management material to absorb or collect menstrual blood, which can be changed in privacy as often as necessary for the duration of a menstrual period, using soap and water for washing the body as required, and having access to safe and convenient facilities to dispose of used menstrual management materials.

**Sanitary napkins (pads):** a disposable piece of thick material to absorb menstrual fluid, and isolate menstrual fluids from the body.

**Social practices**: refers to daily activities performed typically and habitually which adapted to the rules of society one live. It is the result from the interaction between the individual and the community.

# Chapter Two

## Literature Review

This chapter is divided into two sections. It begins with conceptual framework which discusses the main concepts affecting menstruation among adolescents. The second section reviews studies that assess several points as the knowledge, attitudes and practices towards menstruation. Besides the discussion of the relationship between sociodemographic factors and MH practices. Sociocultural practice related to menstruation aspects is also reviewed.

### 2.1 Conceptual framework

There are main domains affecting menstruation and menstrual hygiene practices among adolescents as the following:

Sociodemographic characteristics: there are some factors have an impact on knowledge, attitudes and practicing of menstrual hygiene such as: age, parent education, residency, family income, family type and sibling.

Household environment: how surrounding is supportive for adolescent girl to perform hygienic procedures associated with washing, drying, and storing menstrual absorbents. Components associated with MHM such as water supply, toilet, handwashing facilities, availability, accessibility of disposable sanitary napkins. Existing sociocultural practices also have a role in shaping the KAP towards menstrual issues.

School environment: the researcher will focus on the availability of sanitation, handwashing facilities, accessible toilets, water and soap and if privacy, cleanness is ensured. Also, the implementation of sexual and reproductive health education classes which include scientifically accurate information about human development, anatomy and reproductive health, as well as information about menstrual hygiene practices.

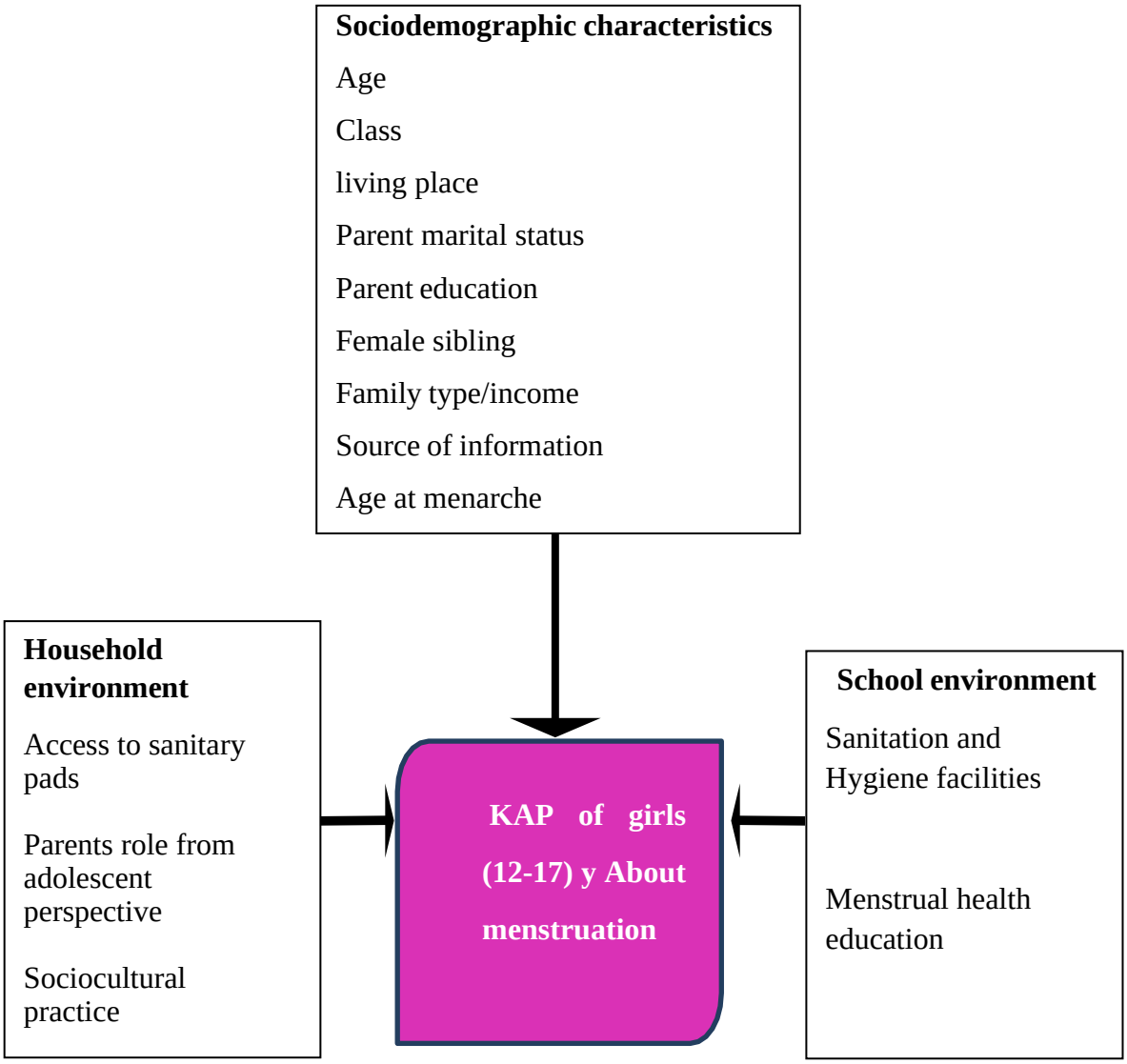



**Figure 2.1: Conceptual framework diagram**

## 2.2 Literature

This section reviews studies pertinent to menstruation and menstrual hygiene of adolescent girls, most of them recently conducted in developing countries.

### 2.2.1 Knowledge about menstruation

Previous studies conducted assessing knowledge about menstruation among adolescent girls throughout the world in different regions obtained varied results. Nepal is one of the most developing countries in which many studies have been conducted on issues of sexual and reproductive health; in a study conducted on 276 teenage girls, varying percentages in the level of awareness about MHM were revealed as 67% had fair knowledge while 26% had good knowledge and as in the Pakistani study, most of the participants agreed that menstruation is a physiological process (Yadav et al, 2017). To develop effective interventions to improve menstrual hygiene practices, it is crucial to explore existing knowledge of menstrual hygiene practices, generally, girls in LMIC had inadequate knowledge about menstruation; hence menarche is a primary motivator for girls to learn about menstruation (Coast, Lattof, & Strong, 2019). This is confirmed by the Bengali study's result that adopted mix method approach through focus group discussions and a self-administered questionnaire to 331 adolescent girls; knowledge score was higher among post-menarche girls compared with a pre-menarche girl (Shah et al., 2019). The lack of proper knowledge about menstruation leads to negative attitude and misconceptions about this natural physiological process and may have adverse health effects (Dasgupta & Sarkar, 2008).

Furthermore, a cross-sectional study that applied over one hundred adolescent girls revealed that the majority of the girls (76%) didn't know about menstruation before menarche (Deshpande et al., 2018). The knowledge about menstruation and the need to manage menstruation healthily and effectively is very crucial for women as they spend the maximum period of their life managing menstruation which is 32–35 years assuming they attained menarche at the age of 13 years and reach menopause by the age of 45–50 years (Ahuja, 2016).

Reports from the East Mediterranean region show that girls learn about menstruation only when they begin the first period (Omran & Alhafez, 2006). In a Jordanian study the results indicated that 82.4% of responders lacked knowledge of pre-menarcheal menstruation and this contributed to unhealthy practices during menstruation (Jarrah & Kamel, 2012). Similarly, half (48%) of participated girls did not hear about menstruation until their first period began (Sivakami et al., 2019). While in a recent survey conducted among school girls showed that 56.4% females were aware about menstruation before attaining menarche plus 40.3% knew about menstruation only after getting their 1st period (Bhadauria et al., 2021). A comparative study conducted in Saudi Arabia reported that 53.4% of girls in government schools and 67.9% in private schools have knowledge of menstruation (Karout, 2016).

#### 2.2.1.1 Source of information

Perhaps the most important thing we address regarding the awareness of teenage girls about the issues of the menstrual cycle is the source of their information. Most of the studies that the researcher read unanimously agreed that the mother is the main source for educating their daughters about menstruation and menstrual hygiene practices (Dambhare, Wagh, & Dudhe, 2012; Siabani, Charehjow & Babakhani, 2018; Al Mutairi & Jahan, 2021; Deshpande et al, 2018; Michael et al., 2020; Samantaray, Mohapatra & Vivekanand, 2020). In some contexts, sisters were the next most common source while the roles of teachers and/or health professionals as providers of menstrual information ranked them as the least common sources compared to female relatives and friends (Chandra-Mouli & Patel, 2020). The role of mothers is dominant in a girl's life; as a source of confidence and knowledge in life matters, sometimes the older sister takes the place of the mother; according to the data obtained from the Indian study that 86.9% of the respondents had received knowledge about menstruation from mother while the other obtained information from sisters, friends, neighbors (Deshmukh et al., 2019). Data collected from 110 adolescent girls from India shows that the majority of girls 75.58% had discussed menstrual problems with someone, most commonly with their mothers 38.15% (Dambhare, Wagh, & Dudhe, 2012).

Although mothers and teachers provide information about the facts of menstruation however, they often failed to prepare the girls emotionally as the older women themselves have limited knowledge about this physiological process. Existing of awareness about menstrual issues among females is strongly correlated with educational status of mothers thus leading to good practice of hygiene aspects. Girls most first ask parents then peers,

sisters, and teachers to obtain information about menstruation (Gumanga & Kwame-Aryee, 2012), accordingly parents or guardians were the major source (68%), with friends the next most reported source (Sivakami et al., 2019). Even so, the most common source of information about menstruation for the majority (83%) of the sample girls were friends.

Media has the ability to increase public knowledge, encourage participation, and provide tools for public health promotion. Openly discussing menstruation and menstrual hygiene habits on social media, which many teenagers use, through posts and infographics is a useful method to educate one another and help lessen stigma associated with menstruation. As a result, there is a higher likelihood that young people may develop greater empathy for and involvement with menstruators. Menstrual hygiene and autonomy in menstrual management were significantly influenced by exposure to the media and the availability of private spaces (Malhotra et al, 2016). The media's influence goes beyond simply disseminating information; it also progressively molds public opinion, individual beliefs, and even people's perceptions of themselves. This has an impact on how people socialize, establish ideologies, and think about pressing topics (Parkavi, 2016). According to a study conducted in Bangladesh, public service announcements in the mass media are thought to be effective tools for raising awareness of women's hygiene practices. Also, mainstream media outlets are thought to be more practical than alternative ones for spreading knowledge of women's hygiene habits (Rahman et al, 2018).

#### 2.2.1.2 Knowledge about MHM

Several researchers have revealed that a large number of adolescent secondary school girls possess scanty knowledge regarding the phenomenon. A study of Indian adolescent secondary school girls found out that the girls are generally not told anything about menstruation not until they experience it (Khanna, Goyal & Bhawsar, 2015). Similarly, the degree of personal hygiene and menstrual control were determined to be fairly inadequate; majority of the girls 98% thought that women shouldn't take regular baths when they were menstruating (Dhingra, Kumar, & Kour, 2009). Afiaz and Biswas (2021) reported that the factors influencing modern methods of managing MHM depend on the status of women’s education and their access to media. This included the importance of increasing awareness and giving accurate information using scientific sources, such as schools, colleges, or health team members.

About 500 students participated in the study, their average age was 21.1 ± 7.8 years and 25.8% of them were from the health colleges. The study shows that the knowledge, attitude, and readiness of participants about menstruation were really poor. The majority (73.4%) of the participants were not able to correctly recognize why girls get their period. Similarly, the percentage of students having a negative attitude about menstruation is 78.4% (370), and <23% were defined to be ready before their first menses. The results of the study depict that the respondents lack proper knowledge of information relevant to menstrual hygiene management (Alharbi et al., 2018).

### 2.2.2 Attitudes towards menstruation and MHM

The topic of menstruation still remains taboo in many countries and discussions of problems related to menstruation are treated as shameful. The attitude and behavior towards menstruation among girls is influenced by their socio-economic, cultural and religious background and moreover their knowledge about menstruation. Many folk beliefs are prevailing all over the world regarding menstruation and those beliefs are associated with many social and cultural implications. Studies in many different parts of the world and cultures reported the existence of different beliefs, for example, changes in diet, bathing, social mobility and prohibition from participating in religious activities. In addition to that 45.0% assume that exercise should be stopped during normal menstruation and 12% they do not know (Karout, 2016).

From different Jordanian districts; a sample of 490 school-age girls (12–18 years) were participated in a survey used Self-report instruments [Menstrual Attitude Questionnaire (MAQ), and Menstrual Practices Questionnaires (MPQ)]. It was found that menstrual attitude and practices were positively correlated. Poor attitude toward menstruation and low menstrual practices were significantly associated with inadequate premenstrual preparation. There is a need to prepare girls for menstruation before menarche. The role of the schools and teachers should be reinforced through formal and well-planned reproductive health educators for girls and their mothers (Jarrah & Kamel, 2012). It is important to note that while teachers and family members spoke positively about menstruation to the adolescent girls, myths and misconceptions contributed to negative views about menstruation and mostly negative attitudes of community members toward menstruating females. A phenomenological analysis from Jordan found that adolescent girls considered talking about menarche to be “socially unacceptable” and “rude” (Al Omari, Razeq & Fooladi, 2016).

Participants' attitudes on menstruation in Egypt are somewhat in agreement that it is a debilitating, annoying and a natural event. Additionally, they concede little that they can predict their period and they doubt its effect. The findings showed that those who had knowledge of menarche before it occurred had a more positive view regarding menstruation. this may consequently affect their knowledge and attitude toward menstruation (Eswi, Helal & Elarousy, 2012). Consequently, knowledge that preceded menstruation is one of the important factors that affected positively female adolescent's attitude toward menstruation.

### 2.2.3 Practices of MHM

Menstrual hygiene management (MHM) is an essential aspect of hygiene for women and adolescent girls between menarche and menopause. Managing one's menstrual period appropriately is therefore of great importance. The World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) define appropriate MHM as the use of clean material to absorb or collect menstrual blood. This also includes changing and disposing of the material at will, in private, and without discrimination. As necessary for the duration of the menstruation period, using soap and water for washing the body as required and having access to facilities to dispose of used menstrual management material (Budhathoki et al., 2018)**.** Furthermore, one must have reliable access to appropriate facilities to keep themselves desirably clean.

According to the definition provided above, a sufficient MHM would call for the following primary elements: clean absorbents, an appropriate frequency of absorbent replacement change, washing the body with soap and water, an adequate disposal method, privacy for managing menstruation, and appropriate disposal of used absorbents. Practicing MHM is varies around the world according to the religions and cultures of peoples and countries; inadequate MHM elements a barrier for females during their period in many countries of the European Region. Another issue is the shortage of affordable menstruation supplies. For instance, 1 in 10 girls in the United Kingdom, according to a survey conducted by Plan International UK in 2017, could not afford menstrual hygiene products, which had an impact on their attendance at school. Since then, the nation has taken steps to lower the price of these goods (WHO, 2022). Adolescent girls in Pakistan were used sanitary pads (68.6%), pads changed 3 times/day (35.2%), and (45.9%) girls were unable to carry out daily activities (Mansoori, 2020). In India, a cross-sectional study was done on 160 participants revealed that about 65% of women used only sanitary pad and 30% used only cloth pieces, whereas

5% used both pad and cloth piece (Santra, 2017). While in Egypt; 90% of students had good menstruation hygiene practices and 98.6% of the girls who were chosen for the study used disposable sanitary pads (El Meselhy, Salama & El Mawardy, 2020).

#### 2.2.3.1 Relationship between sociodemographic and MH practices

Demographic characteristics play an essential role in the female's knowledge levels and their understandings of menstruation issues. It also plays an important role in their beliefs and behaviors. The age, parents' education level, residency, sibling, type of family and the economic status of the family; all these factors had an impact on one's awareness and practice (Sonowal, Talukdar & Saikia, 2021).Then, girls 16–19 years old were 1.9 times more likely to have good menstrual hygiene practices than girls in the 13–15 years age group. Also, mothers of high-school girls who had primary, secondary, or college education were 3.72, 8.54, and 6.78 times more likely to have good menstrual hygiene practices (Habtegiorgis etal, 2021).

Again, it was shown that as girls' ages rose, their bonds with their moms grew weaker; nevertheless, the girls whose mothers had college degrees had stronger bonds with their mothers (Rana & Jami, 2018). The type of absorbent used and the mother's awareness and socioeconomic status were found to be significantly correlated. Hence, increasing mothers' education of managing menstrual hygiene can significantly optimize menstrual hygiene practice (Sharma & Shekhawat, 2019).

On the other hand, there was no statistically significant relationship between the mothers' education level and the level of knowledge of the students about pubertal development ($p>0.05$) (İşgüven, Yörük, & Çizmecioğlu, 2015). Teenage girls with literate mothers were 0.52 times less likely to follow healthy menstrual hygiene and management habits. However, the likelihood of practicing good menstrual hygiene was higher in girls whose fathers had college degrees and lower in those who had five or more family members (Bhusal, 2020). Strong association was seen between respondent's age and knowledge, statistically significant correlation was seen between attitude and participant's socioeconomic status, whereas no significant association was observed between attitude and other sociodemographic variables. Furthermore, high correlation was observed between frequency of change of soakage material and participant's age, mother's literacy status, subject's

marital status, and occupation depicting that respondents whose mothers had secondary or higher education had better practices (Goel etal., 2018).

Much more efforts are needed to curb the misbeliefs and taboos among adolescent schoolgirls. It is found that adolescent schoolgirls in both urban and rural areas have poor knowledge on menstruation and the practices are often not optimal for proper hygiene so menstrual hygiene is an issue needs to be addressed at all levels (Thakre et al, 2011).

#### 2.2.3.2 Barriers to practice menstrual hygiene

Globally, at least an estimated 500 million adolescent girls and women are unable to attain MH due to their inability to easily access basic menstrual hygiene management essentials (World Bank, 2018), one of the most important concepts in the development of personal and general hygiene among students through the improvement of WASH facilities in schools, on the whole, women and girls may face significant challenges as a result of inadequate WASH facilities, particularly in public areas like workplaces, or health centers, struggle to maintain their menstrual hygiene in a private, safe, and dignified manner because there aren't any separate toilets with doors that can be safely closed, or there aren't any facilities for disposing of used sanitary pads or water for hand washing.

Global literature has shown that menstrual hygiene management is a major problem for school going girls as schools lack water sanitation and hygiene facilities, poor puberty education, fear, and humiliation from leaking blood which ultimately leads to increased absenteeism from school (Sommer, 2010; Vashisht et al., 2018). Limited knowledge about MHM resulted from the society's view of it as something like a secret that should never be talked about freely, plus girls having no prior information about periods before they menarched. The challenges girls face attempting to manage their menstruation with insufficient information about their bodies, a lack of social support and ongoing social and hygiene taboos lead to a vicious cycle that affects the health and education of many girls in our communities (ARHR, 2022). This prompts the girl to resort to unreliable sources to answer her inquiries about period issues. Especially, nowadays where most people have internet hence access to the information is plain.

Girls are more likely than boys to refuse to use the restroom in Palestine, according to the UNICEF SoP 2012 and 2016 WASH in Schools KAP research. In addition, one restroom serves 42 students in the WB and 71 students in Gaza and one hand washing station serves 130 students in Gaza and 71 students in the WB (UNICEF, 2016). While the most significant

barriers to using sanitary pads in Pakistani society were cost-related, shyness to ask someone to buy it from the market, lack of comfort with using sanitary pads, and lack of availability and awareness of appropriate materials to implement MHM concepts (Wasan et al., 2022).

### 2.2.4 Family role during menstruation:

The parent's provide the child with a safe, secure, nurturing, loving, and supportive environment, one that allows the children to have a happy and strong relationship with their children; this experience allows the adolescence to develop the thought and knowledge regarding like morals, manner, and behaviors necessary to become an adolescent building a productive contribution to self, family, area, and society (Delgado et al., 2022). Adolescents during their puberty will experience many physical and psychological changes that are very fast. Shape changes that accompany puberty include changes in cognitive, moral, emotional, social as a form of self-development of adolescents (Burnett et al., 2011) Families should create conditions that support growth and development of normal adolescent physical, psychological and social wellbeing. Based on the results of interviews conducted by researchers, the data found that adolescents during puberty undergo sensed a pattern of behavior of different family each adolescent, there are teenagers who feel supported, some are getting the negative attitude of the family, Perceived family support adolescents during puberty underwent a way to understand, advise, allow, meet the needs and teach. Perceived negative attitude teen family is a family concern that less, not explain, curb and do not give children the right to argue (Triyanto & Iskandar, 2015).

In particular; communication in mother and daughter relationship plays a vital role in determining the kind of attitude and the awareness level of the girl towards menstruation. Additionally; mothers are the main source of knowledge for girls according to most global literature as shown above. Relations between adolescent girls and their mothers are influenced by the emotional fluctuations during adolescence; they affect the consolidation of identity and separation; and, can be a source of tension and frustration (Engelhard., 2021). Also, it is one such relationship that keeps shifting its nature. As the years go by, certain tricky turns do arrive. That's usually because of the generation gap. So, interactions between mothers and their daughters form daughters in the future (Everet, Marks, & Clarke-Mitchell., 2016).

Girls in many low- and middle-income countries (LMIC) enter puberty with knowledge gaps and misconceptions about menstruation, unprepared to cope with it and unsure of when and where to seek help. This is because the adults around them, including parents and teachers,

are themselves ill-informed and uncomfortable discussing sexuality. In Gaza, the role of family support was also mixed. While some girl respondents sought advice and support from family members, others were more reluctant, afraid that their parents might not listen or may inadvertently make the problem worse (Samuels, Jones & Abu Hamad, 2017).

### 2.2.5 Sociocultural practices during menstruation

The debate of menstrual hygiene is frequently overshadowed by taboos, social stigmas, and sociocultural constraints. All adolescent girls and women go through it naturally as part of their biological development, but it is not openly discussed because of unwarranted embarrassment and shame. Limited access to facilities and a variety of social and cultural taboos and practices have complicated the situation and increased the burden of diseases including genital infections and menstruation disorders, which result in missed days of school and work (Bhadauria et al, 2021). Although we are in 2023, some restrictions are still imposed on our teenage girls during their period, even if it is in a context different from ours, as it is in India; all the participated adolescents (100%) avoided attending religious places/religious occasions, 53.85% did not enter the kitchen during menstruation, 45.45% were not allowed to play outside, 34.27% slept separately, and 23.08% were not allowed to touch other family members (Boruah, Hakmaosa & Hajong, 2022). Additionally, a descriptive cross-sectional study revealed that participants faced multiple restrictions during menstruation like total seclusion (74.6%), wash clothes separately (74.6%), sleep on floor (74.6%), restriction on leisure (70.4%), eat out of separate utensils (70.4%), and restriction on consumption of food items (49.8%) (Logeswari, Parmar & Suryawanshi, 2021).

On the other hand, in the same state, a survey of 116 Muslim adolescent females revealed that more than half of the participants said they did not touch any male family members or friends or any stored food during their periods. During menstruation, some of the girls were also seen to avoid particular foods including sour food and onions while sleeping separately, engaging in less physical activity, and attending wedding rituals (Samanta & Sarkar, 2022).

From India, where more than 50% of the girls are faced some restrictions as heavy daily activities and attending schools forbidden from attending family events and social festivities (Srivastava & Chandra, 2017). These findings are in line with findings of a study on menstrual beliefs from Lebanon, 89.5% of women are prohibited from participating in social activities, 24% do not depilate, 35.5% will change their eating habits, 22% do not drink cold water, 20% believe avoiding vitamin C can prevent amenorrhea, 20% do not touch babies or plants, and 19% would not go barefoot (Santina et al., 2013).

### 2.2.6 School environment

#### 2.2.6.1 Sexual and reproductive health education

Building capacity for the delivery of sexual and reproductive health services and promoting comprehensive sexuality education for adolescents are one of the strategic pillars of the United Nations Family Planning Agency since girls aged 15-19 years are twice as likely to die during childbirth as women 20 years and above (UNFPA, 2013). Girls are not supposed to discuss with others about their periods as it is considered a shameful thing to do. Parents, especially the mother, should teach their daughters about sexual and reproductive health since they are capable of handling such sensitive issues. Girls who are left to learn about sexual matters on their own or through friends have the possibility of receiving false information that could harm their moral character. Parents are the best people to teach girls since they are aware of what knowledge is appropriate for their children's age. It should not be the exclusive responsibility of parents or teachers to teach SR education. It should be done by parents, religious leaders, health professionals, family doctors, and older siblings.; when Turkish schoolgirls were asked who should provide education about puberty, the majority said health professionals (54.4%) compared to families (30.0%) or teachers (5.9%) (İşgüven, Yörük, & Çizmecioğlu, 2015). The knowledge of puberty and menstruation increased significantly for the entire sample in a study to assess the effectiveness of reproductive health education in improving knowledge of and attitudes toward reproductive health in adolescent girls in Saudi Arabia before and after the intervention program (P.001) postintervention (Tork & Al hosis, 2015).

According to a recent survey conducted at Al Quds University, students had a fair amount of information about sexual education, with female students having less knowledge than male students. Furthermore, students claimed that any information provided by family members is random and of poor quality, also, it was observed that students from private schools had more knowledge about sexual education, indicating a subcultural difference in education in Palestinian society, and that students who were extremely religious reported less knowledge about sexual education and had a more traditional view of sexuality in general (Banat and Dayyeh, 2019).

The phrase "sex" is still looked upon within our Arab contexts. Hence, the focus remains on any educational program that addresses these issues. There is nothing wrong with educating students about the female reproductive system's anatomy and physiology as well as the

physical and mental changes that occur during puberty. A paper-based self-administered questionnaire was filled out by 250 parents from a convenience sample, with an equal number of mothers and fathers of adolescent (12-14) years attending two pre-secondary institutions in Oman, they reported that while there was some opposition, the majority of parents (72.8%) supported school-based comprehensive sexual education (CSE) programs that adhered to Islamic regulations of pre-marital sexual activity. With the exception of birth control and safer sex, almost all parents agreed that age-appropriate CSE should be taught to students between the ages of 10 and 15 and should cover issues that are controversial in Omani society (Al Zaabi et al., 2019).

#### 2.2.6.2 School facilities

Schools have a crucial role to play in fostering a culture of menstrual health awareness, enabling students to use period products safely, and encouraging the initiative among the school community. Girls are spent approximately five hours per day in schools, thus it is significant to have sufficient facilities for them to practice good hygiene during their menstrual cycles; WASH services can benefit health, and human dignity for students (World Bank, 2022). Availability of proper facilities is a pre-requisite for creating a healthy environment in schools.

The following are characteristics of schools with sufficient water, sanitation, and hygiene (WASH) facilities: an adequate water system that supplies sufficient and safe water, particularly for drinking and handwashing; A sufficient number of bathrooms that are private, hygienic, safe, and gender- and culture-appropriate; water-use and hand-washing stations, some of which are close to toilets; and ongoing hygiene promotion.

UNICEF has emphasized that multiple Sustainable Development Goals (SDGs) related to health, education, gender equality, and water sanitation and hygiene. The SDGs' inclusion of WASH at schools (targets 4.a, 6.1, and 6.2) indicates a growing realization of their significance as integral parts of "safe, non-violent, inclusive, and effective learning environments" and as part of "universal" WASH access, which highlights the value of WASH outside of the home (UNICEF, 2022).

The majority of the girls' menstruation practices are hygienic despite the lack of access to WASH facilities. However, for a substantial number of the girls, cramp treatment (64.5%), disposal of menstrual wastes (27.7%), sterilization of menstrual materials (31.4%), and

changing of menstrual materials (47.5%) were reported to be insufficient, poor, unsanitary, and unhealthy. Community-wide sensitization and proper WASH facilities provision are needed to fill this gap. It may not be challenging for adolescent girls to maintain good menstrual hygiene as suggested by conventional literature if they have adequate access to WASH facilities. Religion and culture are sociocultural components that may clarify this phenomenon. (Usman et al., 2022). Even though, the majority of secondary school females decide to change their menstrual hygiene materials at home. Also, they find it more convenient to wash their clothes and other belongings at home, mainly due to the lack of places and amenities available at school. Girls are consequently forced to cut back on their schooling and job commitments for anything from four to eight days every month (Mohammed, Larsen-Reindorf & Awal, 2020).

# Chapter Three

## Methodology

The chapter presents the methodology of mixed design quantitative and qualitative research and data. It illustrates the study design, study population, study setting, and study sampling, eligibility criteria, study instrument, data collection procedure and plan for data analysis. The analysis includes investigation of reliability and validity of the modified instrument, limitation of the study and ethical and administrative approval.

### 3.1 Study design

The study is a combination between quantitative and qualitative methods during the same timeframe. Convergent parallel design was adopted; qualitative and quantitative for were collected, analyzed then converged results comparison and interpretations. It is the best fit model to meet the study's objectives in a short time and also to capture different dimensions of the same phenomenon (Creswell & Clark, 2017). The quantitative part was a cross-sectional study on a school-based sample followed using an interviewed questionnaire as it allows to study different interesting variables at the same time with a vast collection of data (Setia, 2016). The qualitative part was focus group discussion in order to gain more deep information about the phenomena under investigation, to expand and validate the quantitative findings. Focusing on social and economic barriers to practice typical menstrual hygiene management.

### 3.2 Study population

The population included all adolescent school girl's in the age group from twelve to seventeen years old that represent grades seven till twelve in the governmental schools in the GS and who had menstrual flow experience and having least two consecutive menstrual cycles within the last 2 months were included in the study.

### 3.3 Study setting

This study was applied to fourteen governmental preparatory and secondary schools. That are selected randomly from the seven directorates of the Ministry of Education and Higher Education distribution in the GS. The researcher selects two schools from each directorate.

### 3.4 Study duration

The study has started after having approved the proposal and after obtaining the ethical approval from the Helsinki Committee and also from the Ministry of Education and Higher Education (MoEHE). A pilot study of 20 participants was conducted in October 2022. Data entry was performed at the time of data collection and data was analyzed after completed data collection. Focus group discussions were done in conjunction with collection of quantitative data. The study final report was completed in June 2023 Annex (1) describes the activities of the research and duration for each activity.

### 3.5 Sampling

#### 3.5.1 Sampling process and sample size:

For the quantitative part: multistage sampling. A three-step sampling technique: First, two schools from each directorate were selected (one preparatory and one secondary) randomly from each educational directorate using lottery method so fourteen schools were randomly selected among 160 girl secondary and preparatory schools. Then, the sample size for each school was considered proportionally over the selected school. This was based on its population coverage (the number of students studying there). In the last stage, female students studied in classes 7th and 12th were selected randomly via Excel sheet. We were used the traditional formula for calculating the sample size of cross- sectional studies (Charan & Biswas, 2013) and an estimated sample size of 385 with a margin of error of 5% and a confidence level of 95%. However, considering 20% nonresponse, 50% proportion of good menstrual hygiene knowledge, attitude and practice, consequently a sample size of 460 was considered appropriate as showed in Annex (4). A total of 397 questionnaire were filled with a response rate 86%.

For the -qualitative part: A non- probability purposive sample of students who participated in the quantitative part and agreed to participate in the qualitative part were invited to take part in the study. The study includes seven to nine students in each group. Around forty-four students were participated in the five FGDs.

## 3.6 Eligibility criteria

### 3.6.1 Inclusion criteria

For both qualitative and quantitative parts: Adolescent girls who are enrolled at governmental preparatory and secondary schools in the GS and students who had menstrual flow experience and having least two consecutive menstrual cycles within the last 2 months were included.

### 3.6.2 Exclusion criteria

For both qualitative and quantitative parts: Adolescent girl students who had not menarche and enrolled in UNRWA or private schools. In addition to adolescent girls attending primary schools.

## 3.7 Study instruments

For quantitative part: An interviewed questionnaire was conducted to accomplish the objectives of this research, thus, exploring the level of knowledge, attitude, and practice of adolescents regarding menstruation and menstrual hygiene management concerning their relationship with their sociodemographic factors. The study instrument was generated from an extensive literature review (Belayneh, Mareg, & Mekuriaw, 2020); (Bhusal, 2020); (Al Bayoumi, Diab & Abu Hamad, 2021); (Ha Tal, & Alam, 2022); (Fehintola et al., 2017); (Mohammed Gena, 2020); (Sangra et al., 2019). A developed questionnaire in the Annex (5)

1. Socio-demographic background of students including (age, class, living area, parent marital status, mother and father educational level, female sibling, economic status, family type).
2. Source of information / multiple response was allowed (mother, father, friends, school, internet, sisters).
3. Age at menarche
4. Feeling at menarche (fear, shock, shame, uncomforted, comforted).
5. Knowledge about menstruation (9 questions) were measured on three points Likert scale (Yes, No, Don’t know).
6. Knowledge about MHM (6 questions) were measured on three points Likert scale (Yes, No, Don’t know).

7. Attitudes towards menstruation (10 questions) were measured on five points Likert scale (1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree).
8. Attitudes towards MHM (5 questions) were measured on five points Likert scale (1= strongly disagree, 2= disagree, 3= neutral, 4= agree, 5= strongly agree).
9. Menstrual hygiene practices (8 questions) including absorbent type, frequency of washing genitals, bathing frequency, hygiene materials and disposal method.
10. Access to sanitary napkins (3 questions) including availability, purchasing in the past two months and criteria for choice of absorbent type.
11. Barriers to use sanitary napkins (7 questions) including Yes, No
12. Sociocultural practices (8 questions).
13. Family role during menstruation (6 questions)
14. Menstrual health education (5 questions)
15. School facilities (13 questions) were measured on three points Likert scale (Yes, No, Don't know).

For qualitative part: The main tool for the qualitative part was guiding questions for the FGDs that were conducted to complement the quantitative data in order to address the study objectives. The guiding questions were established, validated and used under direct supervision and coordination with the supervisor. The participants joined by their free will; the discussions were recorded. All materials have been saved and accessible only by the researcher. Annex (6) shows guiding questions.

### 3.8 Pilot study

Regarding the quantitative part, a pilot study was conducted at governmental primary school. A total of 20 questionnaires were done to explore the relevance of the study instrument, clearance of items and allow the researcher to train for data collection. This facilitated further improvement of the study validity and reliability as the questionnaire was modified. However, the pilot wasn't included in the study. Moreover, interview guide was tested over 8 adolescent girls in the same school to check language appropriateness and understanding; some questions were added or edited.

### 3.9 Data collection

For the quantitative part: the researcher conducted the interviewed questionnaire by face to face with the adolescent females. Most of them responded while fourteen participants didn't complete the questionnaire with a response rate (86%). The data collection started in November and end in December 2022.

For the qualitative part: Five FGDs were conducted by the researcher and a qualified assistant, each group was 7-9 students encouraged to participate in their experiences. The duration of the interview ranged from 90-120 minutes. The researcher presented herself to the students; explained the goals for the research and the importance of their enrollment in the research. Open-ended questions are used to allow the participants to tell their stories in their own words. The researcher ensured that all the participants agreed to participate (informed consent) and emphasized the confidential nature of the discussions. The FGDs were recorded to ensure the capture of all information accordingly, the researcher confirmed the confidentiality and privacy of the given data.

### 3.10 Data entry and analysis

For the quantitative part: It was done by the researcher to get meaningful information from raw data. During data collection, the researcher reviewed the questionnaires continuously and before entering them to ensure valid information and correct them immediately if required. Regarding quantitative data, data preparation steps include data entry, the questions and variables was coded, data cleaning was performed to check illogical values, data computing, the data was analyzed by statistical package for social sciences (SPSS) version 25. Descriptive statistics was conducted to analyze numerical data which helped to describe and summarize data in a meaningful manner, and it helped in calculation of central tendency of mean, median, and standard deviation. Inferential statistics included One-way ANOVA test or T-test to compare means of numeric variables were done when required to analyze data followed by (when significant difference was found), post hoc test to show significant different from one another The researcher categorized adolescent girls KAP scores into three categories based on the percentage of maximum possible scores: 'poor'- (0%-50%), 'fair' (51-75%) or 'good' (76-100%) (Sangra et al., 2019), (Ha Tal, & Alam, 2022). For qualitative part: the researcher approached thematic analysis method to analyze the transcripts of the FGDs (Sundler et al., 2019). The researcher obtained the main findings from the audio recordings of the focus group. Thematic analysis will be used to categorize data into codes,

subthemes and themes. The data management was started with deep reading of the raw data brought from the transcripts. Then, categorization of related ideas, and comparison and integration between the quantitative and the qualitative findings were done to create rich items for discussion and representation. Maxquda version 10 used to manage qualitative data.

## 3.11 Scientific rigors: quantitative part

### 3.11.1 Reliability

The reliability of an instrument is the degree of consistency with which it measures the attribute it is intended to measure. Pilot was conducted to assure the stability of the instrument; retesting was applied over time (two weeks) and the scores obtained are compared by calculating a reliability coefficient. One common method to calculate reliability is by using Cronbach's Alpha coefficient. The table (3.2) in Annex (7) illustrates the reliability of the domains, with a Cronbach's Alpha value of 0.820 for the entire questionnaire in the pilot sample, indicating good reliability for the entire questionnaire.

Then, the data entry was mostly done in the same day of data collection which allowed to check the data quality and completion. Re-entry of 5% of the data after finishing data entry to assure correct entry procedure and decrease entry errors.

Moreover, to assess internal validity, the researcher computed the correlation coefficient between each item and its corresponding domain. Table 3.3 in Annex (8) displays the correlation coefficients for each item within a domain, as well as the total for the corresponding domain. In most items, the p-values are less than 0.05, indicating that the correlation coefficients are statistically significant at $\alpha = 0.05$. This suggests that all items within each domain are consistent and valid measures of the intended attribute.

### 3.11.2 Validity

- **Face validity**

It refers to the smooth form of a questionnaire to be filled, the ease of collecting of data and being reviewed by experts. Also, a pilot study was conducted before the actual data collection to examine participants responses to the questionnaire and how they understand it. That was to enhance the validity of the questionnaire after modifying it to be better understood.

- **Content validity**

It was evaluated by a group of experts to evaluate how well the supposed questions in the questionnaire covered the topic of interest and their comments were taken into consideration . The content validity will be measured by using the conventional approaches of assessing both the item content validity index (I-CVI) and the scale content validity index (S-CVI). The I-CVI involves the measurement of the content validity of individual items while the S-CVI involves measuring the content validity of the overall scale. Nine referees provided their comments and rated validity of the questionnaire' items in accordance with their domains. The 1-CVI and S-CVI ranged between 0.78 to 1 and 0.89 to 1, respectively This means that the questionnaire items are content valid and agreement between raters/referees is not coincident as interpreted by $k > 0.79$. (Annex 10)

## 3.12 Scientific rigors: qualitative part

### 3.12.1 Trustworthiness

Lincoln and Guba's four criteria were followed: credibility, confirmability, dependability, and transferability to ensure rigor in the current study (Lincoln, Guba, & Publishing, 1985).Credibility is a measure of the truth value of qualitative research, whether the study's findings are correct and accurate, member check were used to establish credibility. The study participants were asked to give their feedback about interpretation, and conclusion.

Confirmability means that the data is neutral and not influenced by the assumptions of the researcher, to achieve it an audit trail was followed that details each step of data analysis and summarizing the content of each question during the focus group.

Dependability is defined as the examination of the process of the study. The study will be claimed to be dependable or auditable when another researcher can follow the decision trail of the study without contradicting the findings. In this study, auditability is specifically achieved through the supervisor who assisted with assessing all methods used in the study.

Transferability measures to what extent the study's results are applicable within other contexts, circumstances and settings. By providing an elaborative description, which provides an adequate detail on the site, participants and procedures used to collect data during the study.

### 3.13 Ethical and administrative issues

The academic approval of the research title was obtained from the school of public health at Al-Quds University. The researcher followed the modified international code of ethics principles (1975), known as the declaration of Helsinki; an official letter from Helsinki committee to conduct this current study was obtained (Annex 2). Also, an administrative approval obtained from the Ministry of Education and Higher Education (MoEHE) (Annex 3).

To guarantee participants rights, an informed consent was obtained from parents of students younger than 16 years old and another one was obtained from the students of age 16 and 17. In addition verbally presented to all respondents indicating that the participation was voluntary, and confidentiality was assured for all of them. All data were kept confidential by the researcher and were used for study purposes only. By the way, all participants of FGDs were asked verbally for their permission to participate in the study (consenting) and to record the discussions.

### 3.14 Limitations of the study

1. The study was applied only to the government schools in the GS; not to UNRWA and private schools which may influenced the generalizability of results.
2. Time factor during the focus group discussion with the students, it was recognized that some of them weren't answering and interacting in a comfortable way; even they worried that they would miss classes and not have them again.
3. Topic sensitivity; menstruation is accompanied by a cultural taboo in our community thereby hardship was occurred among respondents.

# Chapter Four

## Results and Discussion

This chapter presents the main findings of the quantitative and qualitative data collected about knowledge, attitudes and practices of adolescent girls in the GS towards menstruation and menstrual hygiene management. It represents the results of descriptive statistics relates to distribution of the study population. After that, the results of inferential statistics concerning the objected relationships of the various factors in relation to menstruation and menstrual hygiene would be discussed in order to conclude the major points and results excreted from this study. Some comparisons of previous studies result with our results regarding the same topics are presented.

### 4.1 Distribution of participants according to socio-demographic characteristics

**Table 4.1: Description of participants by sociodemographic data (N=397)**

| Variable | Sub-categories | N | % |
|---|---|---|---|
| Age | ≤14 | 130 | 32.8 |
| | >14 | 267 | 67.2 |
| | Mean= 14.9, Median= 15, St.d= 1.55 | | |
| Class | Seventh Grade | 43 | 10.8 |
| | Eighth Grade | 36 | 9.1 |
| | Ninth Grade | 47 | 11.8 |
| | Tenth Grade | 129 | 32.5 |
| | Eleventh Grade | 72 | 18.1 |
| | Twelfth Grade | 70 | 17.6 |
| Type of school | Preparatory | 168 | 42.3 |
| | Secondary | 229 | 57.7 |
| Governorate | North | 65 | 16.4 |
| | Gaza | 142 | 35.8 |
| | Middle | 37 | 9.3 |
| | Khan Yonus | 112 | 28.2 |
| | Rafah | 41 | 10.3 |
| Parent marital status | Divorced | 7 | 1.8 |
| | Married | 374 | 94.2 |
| | One of parent dead | 16 | 4.0 |
| Mother educational level | Less than secondary school | 52 | 13.1 |
| | Secondary school | 198 | 49.9 |
| | University | 135 | 34.0 |
| | Higher studies | 12 | 3.0 |
| Father educational level | Less than secondary school | 62 | 15.6 |
| | Secondary school | 166 | 41.8 |
| | University | 138 | 34.8 |
| | Higher studies | 31 | 7.8 |
| Female sibling | Third or less | 193 | 48.6 |
| | Fourth to sixth | 142 | 35.8 |
| | Above sixth | 62 | 15.6 |
| Family income | Family needs are not always met | 153 | 38.5 |
| | Family needs are sometimes met | 217 | 54.7 |
| | Family needs/luxuries always met | 27 | 6.8 |
| Family type | Nuclear | 387 | 97.5 |
| | Extended | 10 | 2.5 |

The results shown in Table 4.1, indicates that the total number of participants in the study was 397, with response rate of 86% despite of topic sensitivity, all were girls aged from 12-17 years represented by 7$^{th}$ grade till 12$^{th}$ grade who were selected from their governmental schools in the GS randomly; The best place to reach the target sample (adolescent girls) in this research is schools. Hence, 168 girls from preparatory (42.3%) and 229 from secondary schools (57.7%) were selected randomly. In details, 130 participants (32.8%) were 14 years old or less, and 267 participants (67.2%) were older than 14 years old. The average age among participants was 14.9±1.55 years. Moreover, the participants age of menarche it was (13.11±1.17).

Also, the table details the distribution of the study sample according to their educational level; 43 participants (10.8%) in the seventh grade, 36 participants (9.1%) in the eighth grade, 47 participants (11.8%) in the ninth grade, 129 participants (32.5%) from the tenth grade, 72 participants (18.1%) from the eleventh grade and 70 participants (17.6%) from the twelfth grade.

The distribution according to participants' residency shows that (16.4%) were from the North, (35.8%) were from Gaza city, (9.3%) from the middle, (28.2%) were from Khan Younus, and (10.3%) from Rafah. The marital status of parents, it indicates that the majority were married (94.2%), however, only (4%) reported that one of their parents was dead and (1.8 %) reported that their parent was divorced.

In relation to mother and father educational levels were also analyzed, Table 4.1 shows that the highest percent (49.9%) was from mothers who were educated to the secondary level, this was followed by (37%) for 147 mothers who were holding a bachelor's or higher studies degrees, these percentages correspond to what was published by PCBS (2021); that the literacy rate among females in the GS was 97.1%. Also, fathers educational level the highest percentage (41.8%) who were educated to the secondary level, this was followed by (43%) for 169 fathers who were holding a bachelor's or higher studies degree, it is higher than that of mothers, this difference is due to some extent to the preference for teaching males over females for higher educational levels in our community.

Table 4.1 shows the female sibling of participants; the majority were ranked in the third, second, or first (48.6%) while those who were ranked in the fourth, fifth, or sixth (35.8%), the lowest percent for girls were in the seventh order or above (15.6%), previous percentages

were fairly consistent with what published by PCBS and UNFPA in (2021); the average household size declined to 5.7 in 2020 compared with 6.5 in 2007.

As for the family income, it was difficult for the participants to determine because of their age. So, the researcher preferred to ask it in this way. They answered by (38%) their family needs aren't met always and girls who live in families always provide for their needs and luxuries was (6.8%). However, girls who reported that their needs were sometimes met (54.7%). Moreover, the vast majority of the study participants (97.5%) came from nuclear families, while only a small percentage (2.5%) came from extended families.

### 4.2 Qualitative results:

Regarding the qualitative study, the researcher conducted five FGDs with 44 adolescent girls from the selected schools to explore the phenomena under investigation. The age of the participants ranged from fourteen to sixteen years old. The duration of the interviews average was 60 minutes. According to the researcher. Five themes and eighteen subthemes were extracted. It is presented in the table below:

**Table 4.2: Qualitative results**

| Theme | Subthemes |
|---|---|
| Adolescent knowledge about menstruation | Knowledge deficit |
| | Puberty related knowledge |
| | Menstrual related symptoms |
| | False information |
| | Physiological side related knowledge |
| | Religion side related knowledge |
| Girls reaction | Disclosing reaction |
| | Negative psychological reactions |
| Life switched | Sense of maturity |
| | Religious commitment |
| Menstrual related practices | Lack of family support |
| | Good hygiene practices |
| | Seeking information |
| | Non health related practices |
| | Health related practices |
| School preparedness | Menstrual first aid availability |
| | Lack of educational preparedness |
| | Lack of hygiene preparedness |

## 4.3 Source of information about menstruation

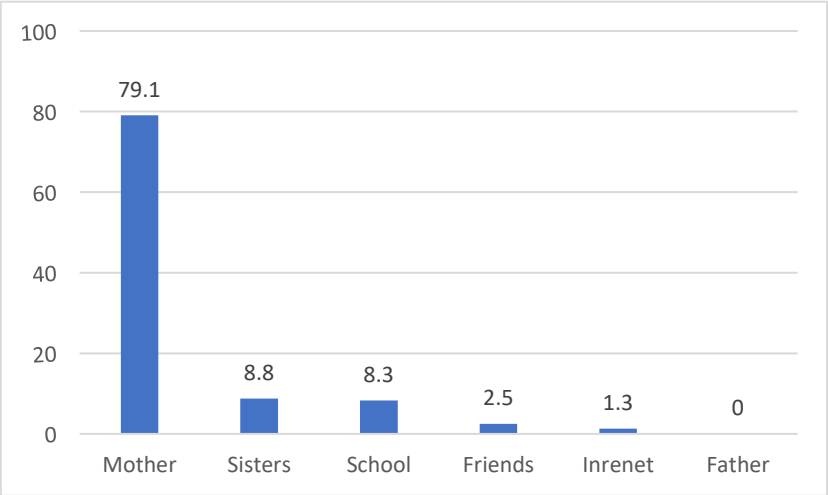



**Figure 4.1: Source of information among respondents**

Figure 4.1 showed the distribution of female adolescents' sources of information, out of 397 the results showed that the most common source of information regarding menstruation among the female adolescents in the study was their mothers representing (79.1%) of the total sample. Sisters and schools were the second and third most common sources of information, with (8.8%), (8.3%) respectively. Friends and the internet were fewer common sources with only (2.5%), (1.3%) respectively. Taking into consideration that no one chose the father as a source of information and this is logical due to the sensitivity of the topic (Abu Hamad, Jones & Gercama, 2021). These findings support the results of other local studies (Abu Hamad et al., 2017). Also, Shalabi-Abbas et al (2018) reported that main source of information for adolescent girls in Nablus were their mother (68%), in Oman the source of knowledge about menstruation for 476 girls (60.2%) was mostly their family (Anwar et al., 2018).This might be due to social restrictions; teenage girls prefer to talk about sexuality issues like menstruation at their family mostly mothers. In some contexts, sisters were the next most common source while the roles of teachers and/or health professionals as providers of menstrual information ranked them as the least common sources compared to female relatives and friends (Chandra-Mouli & Patel, 2020). However, the results are inconsistent with the cross-sectional study conducted in the West Bengal in which friends surpassed mothers as the primary source of information (Yasmin et al., 2013). This gap may be caused by mothers' low socioeconomic status, which have driven their inhibitions about discussing menstruation with their daughters and emphasizing its importance, good hygiene habits. It

can be concluded that family (mother/ sisters) and school are the main sources of information for the girls, and this was probably because adolescent females spend most of their time at school and home.

From the qualitative study, it was clear that the mother is the main player in girl's life and girls indicated feeling happy to have a conversation with their mother about this issue in their lives as revealed below:

*"I am the eldest sister. I used to talk with my mother about everything, I want to know especially embarrassing topics as the period"* ($P_5$, Gaza, 14).

*"My mother is doing anything for me and my sisters, I asked her and she answered immediately"* ($P_5$, Middle zone, 14).

*"My sisters are older than me, so I know and learned from them about menstrual issues"* ($P_1$, Rafah, 15).

### 4.4 Feeling at menarche among study participants

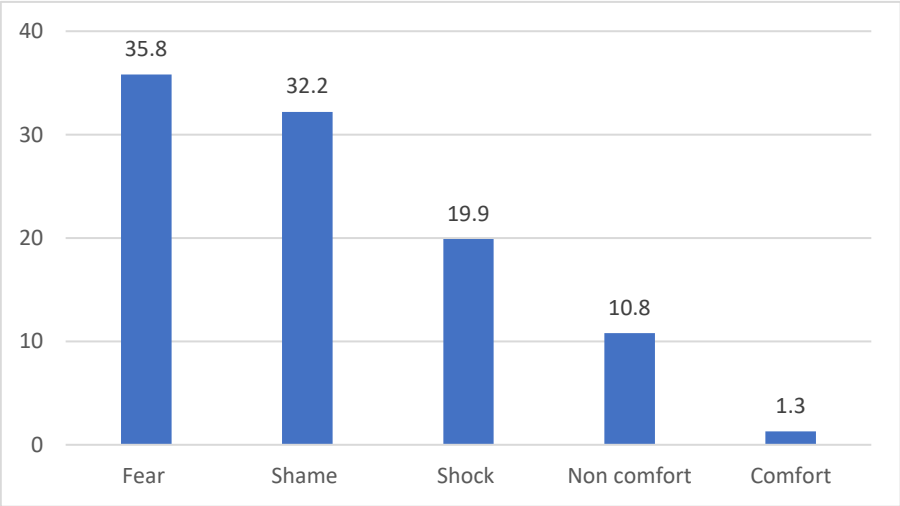



**Figure 4.2: Feeling at menarche among participants**

The majority of adolescent girls participated in the study revealed that fearing is the most dominant emotion among the girls (35.8%), as shown in Figure 4.2, followed by shame (32.2%), whereas (19.9%) felt shock and (10.8%) of the girls were non-comfortable when being at menarche, in contrast only (1.3%) were comfortable at that time.

Individuals have different abilities to adapt to changes and the same person might react differently to the changes that occur at different times in his or her life (Kwon & Park, 2019). Teenage females may have conflicting emotions during menarche, and research from many nations reveals a range of both positive and negative sentiments. Our research results show congruence with the previously published research in related to the study phenomena, feeling of fear and shame were dominant among the study participants, which was similar to the study carried out among Jordanian girls (Al Omari, Razeq & Fooladi, 2016) and Brazilian girls (Do Amaral, Hardy & Hebling, 2011). The same reaction of scary and shame at menarche is present in a previous study (Diaris, Listyowati & Januraga, 2017). Some of the negative initial reactions to menarche are worry, feeling odd and confused among Mexican adolescents' girls (Marván & Alcalá-Herrera, 2014), and feeling irritable and embarrassed as in Taiwanese girls (Liu, Chen & Peng, 2012). These negative feelings may have been generated by the girls as a result of their insufficient equipped with information and their lack of correct understanding of the meaning of menstruation.

From the qualitative study, fearing, shaming, and shock were prevalent among the participants when they had menarche as below:

*"I was very afraid for the first time to see such blood coming out of my body, and also because my body was not suggesting that I could have my period at this time…"* ($P_3$, North, 16).

*"When I had my period for the first time, I was shocked, so I called my mother and sister"* ($P_7$, Middle zone, 14).

*"When I got my period for the first time, I was very shy, but at the same time happy"* ($P_4$, North, 16).

Other perceptions expressed by the participants stated that they do not want the period to happen because they feel that it is too early and they are still young.

*"I cried a lot about this thing...too early...I feel like I'm still young"* ($P_2$, North, 16).

*"I felt myself entering a period of depression because I was young"* ($P_6$, North, 16).

*"I cried for a long time as there was a dead person in the house... I don't understand anything, I'm still too young for these things...sometimes I say that I wish (period) could go to someone else"* (P5, Gaza, 14).

*"Although I have three sisters who are older than me and they have their period, I did not expect to have such an age fourteen because I feel young"* ($P_3$, North, 16).

### 4.5 Level of knowledge about menstruation among study participants

**Table 4.3: Level of knowledge about menstruation among study participants**

| No. | Items | Yes | | No | |
|---|---|---|---|---|---|
| | | N | % | N | % |
| 1 | I knew about my period before it happened | 237 | 59.7* | 160 | 40.3 |
| 2 | The normal age for menstruation for a girl to be less than 16 years old | 313 | 78.8* | 84 | 21.2 |
| 3 | The menstrual cycle is caused by hormonal changes in the body | 343 | 86.4* | 54 | 13.6 |
| 4 | The source of menstrual blood is the uterus | 238 | 59.9* | 159 | 40.1 |
| 5 | The normal period for menstrual bleeding is from 2 to 7 days | 319 | 80.4* | 78 | 19.6 |
| 6 | The normal period between one menstrual cycle and another is from 28 to 31 days | 290 | 73.0* | 107 | 27.0 |
| 7 | A woman stops menstruating during pregnancy | 317 | 79.8* | 80 | 20.2 |
| 8 | Taking a shower on the first day of the menstrual cycle is good and does not harm one's health | 169 | 42.6* | 228 | 57.4 |
| 9 | You should avoid sports activities during the menstrual cycle | 308 | 77.6 | 89 | 22.4* |
| **Total** | | Mean ±SD= 64.79±20.59 | | | |

*****Correct Answer**; N**: number of subjects

Table 4.3 summarized the distribution of the study participants according to their responses about the level of female adolescents' knowledge regarding menstruation. The level of female adolescents' knowledge regarding menstruation was fair (64.79%). Similar to the systemic review results of (Coast, Lattof & Strong, 2019) in which most adolescent girls had in adequate knowledge about menstrual items. According to the results, around (60%) of the study sample knows about menstruation before it occurred but there were (40%) of them didn't know. This result contrasts findings from a study among students in Ghana where (73.4%) were aware of menstruation before menarche (Ameade & Garti, 2016). This

distinction between Palestine and Ghana might be explained by variations between the Eastern Mediterranean and African cultures and how families deal with such sensitive subjects. In Palestinian households, talking about menstrual difficulties before menarche tends to be difficult.

The highest correct item was " The menstrual cycle is caused by hormonal changes in the body" with a percentage equal (86.4%). This is congruent with the literature in Pakistan, that found most of the study participants have good knowledge about the menstrual cycle's etiology as a physiological process and normal natural changes in the body's hormones (Michael et al., 2020). Similar result presented in studies conducted in India and in Nigeria (Mamilla & Goundla, 2019) (Fehintola et al, 2017).

About the source of menstrual blood around (60%) of the study sample answered the uterus, however, it corresponds to the study conducted by Sharma et al. (2019). Besides, (80.4%) of the study participants showed a correct knowledge about the normal periods for menstrual bleeding and their awareness of the normal periods between each menstrual cycle was (73%) which is consistent with the Omani survey among adolescent girls that the majority of them knew that menses occur once a month (Anwar et al., 2018).

From the qualitative study and as revealed from the interview's analysis, some of the adolescent students expressed their lack of awareness or previous knowledge about menstruation unless they marched and some were aware briefly. As it showed below:

*"**I did not have information about her** (menstruation), I only heard about her, even though I have 3 sisters older than me, but they are married, so they are not in the same house"* she continues to declare that she received information from her mother after the onset of menstruation as she stated: "*I did not know anything about it before, after the onset, my mother informed me about what is menstruation* and *taught me how to deal with it and clean my body during it"* ($P_7$, North, 16).

*"My mother told me briefly about menstrual issues she did not explain to me so when I had my first menstrual period. I did not tell her, but I kept hiding from her for a whole day…I learned more from my older cousin"* ($P_6$, Gaza, 15).

Another student also stated that she did not hear about it as she said: "*I did not know anything about it before its onset*" ($P_1$, Rafah, 15).

During the analysis of the interviews, the researcher found a shortage in the girls' understanding of the menstrual cycle. Some of them considered it as an extract of bad blood that comes out of the body, and others believed that it was a way to purify the body from toxins as it showed below:

"*It is bad blood in the body. The cycle takes it out through this process so that the body produces new blood cells*" ($P_{7,}$ Gaza, 15).

*"The menstrual cycle is responsible for removing bad blood from the body*" ($P_7$, North, 16).

*"Now we all know that gold is forbidden for men, but for women are allowed. One of the reasons is that when our period comes, it purifies our body from toxins and gold particles that enter our bodies. As for men, gold particles will harm them a lot, because this is why the menstrual cycle has many benefits for women's health."* ($P_{9,}$ Khan Yunus, 15).

*"Infections and inflammations are toxins in the body, so the menstrual cycle cleans these harmful things"* ($P_{2,}$ Gaza, 14).

Additionally, there is misinformation among students related to the uterus and eggs; when the menstrual cycle is irregular, this means that the uterus is not in a normal state as one girl stated *"The uterus affects the dates of the menstrual cycle, which means that when there are problems, the period becomes irregular"* ($P_{6,}$ Rafah, 14).

Another girl stated that *"The uterus and eggs are present in women, not in men, so when a married woman stops menstruating, this means that she is pregnant"* ($P_{2,}$ Khan Yunus, 15).

*"The eggs in the body are injured and menstrual blood comes out of them, and they are renewed so that the woman will be able to bear a fetus…. during menstruation, the possibility of carrying a deformed child is high, which is why it is forbidden to do (intercourse) during menstruation, so the menstrual cycle when renewed helps to be a healthy child"* ($P_{9,}$ Khan Yunus, 15).

Regarding the physiological process that results in menstruation; origin and discharge site of menstrual blood, hormonal changes in the body mainly affected menstrual regularity; there was fairly good information from the participants.

*".....menstrual blood comes and collects in the uterus and descends through the vagina"* ($P_7$, Gaza, 14).

*"In the girl's body, there are two eggs, one on the right and one on the left, and every month one is released*" ($P_4$, Middle zone,14) and another girl in the same region stated that *"The period occurs due to shedding of the uterine wall"* ($P_8$, Middle zone,14).

*"There is also a stage in a girl's life called menopause. When she reaches; her period stops it was around the age of 40 to 50 years.* ($P_9$, Khan Yunus, 15).

*"The cycle occurs due to hormonal changes in the body"* ($P_3$ and $P_9$, North, 16).

*"Sometimes the menstrual cycle is irregular according to the hormones of each person, which means that it may stop for two or three months, and it may continue for 15 days to compensate for the months in which it stopped…. And when the girl is stressed blood comes out"* ($P_9$, Khan Yunus, 15).

When asking the interviewees about time differences in menarche they attributed to the hormonal variations within girls as a participant from Khan Yunus at the age of 15 years.

Another girl stated that *"She comes every month and for every girl, according to the girls of a week or even 15 days, or less than 7 days, and when we get rid of her, we must take a bath and the intention of purification is about us"* ($P_5$, Khan Yunus, 15).

Additionally, adolescent girls consider the menstrual cycle as a sign of maturity of the body to perform its functions, such as pregnancy and childbirth.

*"The body undergoes many changes that indicate its maturity, such as breast maturity, hair growth, and body length increasing"* ($P_2$, North, 16).

*"I felt old and mature. I started talking to adults and they listened to me rather than before"* ($P_4$, Middle zone, 14).

*"The menstrual cycle is responsible for pregnancy and childbirth that every girl goes through, without the period, there is no pregnancy except through fertilization process"* ($P_8$, Gaza, 14).

## 4.6 Level of knowledge about menstrual hygiene management among study participants

**Table 4.4: Level of knowledge about menstrual hygiene management among study participants**

| No. | Items | Yes | | No | |
|---|---|---|---|---|---|
| | | N | % | N | % |
| 1 | MH means that the genital area is clean, using sanitary pads and dispose of them properly | 350 | 88.2* | 47 | 11.8 |
| 2 | Maintaining hygiene during the menstrual cycle protects against infection, and prevents bad smell | 369 | 92.9* | 28 | 7.1 |
| 3 | Bathing during menstruation is harmful to health | 168 | 42.3 | 229 | 57.7* |
| 4 | The best absorbent for period blood is sanitary pads which are not reusable and disposable | 346 | 87.2* | 51 | 12.8 |
| 5 | The genital area should be washed with water every time the pad is changed | 316 | 79.6* | 81 | 20.4 |
| 6 | The sanitary pads must be changed at least three times or more daily | 349 | 87.9* | 48 | 12.1 |
| | **Total** | Mean ±SD= 79.62±20.80 | | | |

*****Correct Answer**; N**: number of subjects

Table 4.4 demonstrates that the level of knowledge about menstrual hygiene management among the surveyed girls was good (79.6%). Similarly, good knowledge is also found among high school students in Indonesia (Balqis, Arya & Ritonga, 2016). It can be clearly seen from the results that adolescents' awareness of MHM is higher than that of menstruation, this can be explained by the fact that the concepts of personal hygiene that girls learned from the culture of the Islamic religion supported their knowledge about menstrual hygiene. Moreover, (88.2%) of the girls agreed about MH meaning, furthermore around (92.9%) accepted that MHM protects from infection which congruent with study carried out in Indian

that showed girl's aware about the importance of knowledge during menstruation. (Shoor, 2017).

Concerning bathing during menstruation; (57.7%) of participants reported that it isn't harmful to health, the same result was reported in (Yadav et al., 2017) and (Shalabi-Abbas et al., 2018). Additionally, (87%) of the girls indicate that best absorbent during menses is sanitary pads and should be changed at least three times daily, comparable result was found that the majority of girls thought that pads should be changed regularly (Deshmukh et al., 2019). While (79.6%) reported that washing the genital area every time changing pads is necessary.

From the qualitative data, participants showed that they were aware of menstrual hygiene aspects either from their mother or teachers, however, they conclude that it is done haphazardly on the sidelines of related lessons and is not systematic. As well as the mother learned them after the onset of menstruation.

*"The teacher said that we have to change our underwear daily …to remove the body hair after each period"* ($P_4$, Gaza, 15).

*"Washing is not limited during menstruation; it is all the time"* ($P_6$, Gaza, 15).

*"Why aren't dedicated classes on hygiene matters instead of taking advantage of the empty classes with math or English classes?" "* ($P_6$, Khan yunus, 15).

"*I heard about menstruation, but I did not have much information on how to manage the cleaning during period till I menarched*" ($P_2$, North, 16).

## 4.7 Level of attitudes towards menstruation among study participants

**Table 4.5: Level of attitudes towards menstruation among study participants**

| N. | Item | Strongly agree | | Agree | | Neutral | | Disagree | | Strongly disagree | | Mean | Weighted mean |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % | N | % | N | % | | |
| 1 | Menstruation is annoying | 162 | 40.8 | 123 | 31 | 59 | 14.9 | 36 | 9.1 | 17 | 4.3 | 3.85 | 77 |
| 2 | I see that pain during period is just an excuse | 32 | 8.1 | 44 | 11.1 | 46 | 11.6 | 106 | 26.7 | 169 | 42.6 | 2.07 | 41.4 |
| 3 | Menstruation is considered a state of filth | 74 | 18.6 | 81 | 20.4 | 67 | 16.9 | 82 | 20.7 | 93 | 23.4 | 2.76 | 55.2 |
| 4 | It is not acceptable to talk about with girlfriends | 109 | 27.5 | 115 | 29 | 78 | 19.6 | 58 | 14.6 | 37 | 9.3 | 3.52 | 70.4 |
| 5 | When buying sanitary pads, there should be no men in the place | 155 | 39 | 112 | 28.2 | 56 | 14.1 | 51 | 12.8 | 23 | 5.8 | 3.72 | 74.4 |
| 6 | It is embarrassing when a man in the house (brother/father...) knows about my period | 214 | 53.9 | 99 | 24.9 | 30 | 7.6 | 32 | 8.1 | 22 | 5.5 | 4.04 | 80.8 |
| 7 | During the menstrual cycle, avoid certain food | 99 | 24.9 | 135 | 34 | 61 | 15.4 | 68 | 17.1 | 34 | 8.6 | 3.41 | 68.2 |
| 8 | During the menstrual cycle, avoid some sporting activities | 114 | 28.7 | 157 | 39.5 | 58 | 14.6 | 47 | 11.8 | 21 | 5.3 | 3.66 | 73.2 |
| 9 | During her period, the girl is unclean | 44 | 11.1 | 50 | 12.6 | 50 | 12.6 | 111 | 28 | 142 | 35.8 | 2.23 | 44.6 |
| 10 | During the Menstrual cycle, going to school is not necessary | 39 | 9.8 | 21 | 5.3 | 40 | 10.1 | 118 | 29.7 | 179 | 45.1 | 1.97 | 39.4 |
| | **Score** | **Mean 57.80 MD 58 Std 9.84** | | | | | | | | | | | |

Based on the results illustrated in Table 4.5 it points up that the adolescent girls' attitudes towards their menstruation was fair (57.8%). This result consistent with Saudi cross-sectional study that assess the level of students' attitude towards menstruation (Alharbi et al., 2018). In details, the highest weighted mean (80.8%) is for the item which said "It is embarrassing when a man in the house (brother/father...) knows about my period" and this reflect the current cultural beliefs in our community. Additionally, it was clear when asking girls "It is not acceptable to talk about with girlfriends" and "When buying sanitary pads, there should be no men in the place" the relative means were (70.4%) and (74.4%)

respectively. These results are consistent with other literature as (Parle & Khatoon, 2019) and the qualitative study conducted in Palestinian refugee camps in the WB and Jordan revealed that talking about menstruation was considered undesirable and associated with embarrassment using the term aib "عيب" (Ghandour et al., 2022).

On the other hand, item which said "During the menstrual cycle, avoid certain food" came at the relative mean (68.2%) and this corresponds to what Palestinian girls in the WB believed that they have to change food quality or quantity during menstruation (Shalabi-Abbas et al., 2018). Regarding physical activity during menstruation, our result showed that (73.2%) of the study participants think of avoiding physical exercise, this result was similar to the study carried among Lebanese adolescent girls where they think the exercises will increase the risk of bleeding (Santina et al., 2013).

Different perceptions during the menstrual cycle of the participating girls were extracted from the interview's analysis; one of them concealed the onset of her menstruation as a personal event and no one has the right to know as she stated *"When I had my period, I did not tell any of my family, not even my mother, and I kept this matter hidden for a whole year until they know by chance; I think this is a personal matter, and no one has the right to know it"* ($P_5$, North, 16).

And another was avoiding talking and hearing about the menstrual cycle out of shyness *"In family sessions, we are mothers and daughters sitting together talking about these issues, but I was avoiding listening and talking that I was young and they shouldn't talk about it"* ($P_5$, Gaza, 14).

When they need sanitary pads and ask from the school, they feel embarrassed as one student stated "*I went with my friend to ask for a pad, I was ashamed because there were many teachers with the counselor in the room"* ($P_8$, Gaza, 14).

*"Once my period suddenly occurred and I had a pad with me, which I took from the bag and wrapped it so that no one would see it" (*$P_1$, Gaza, 14).

As for the need for a health service, one of the participants said that she felt embarrassed when she had to go to the doctor as she stated *"My period was not regular, so I went to the doctor to check with my mother… the team and the doctor were helpful and welcoming, but I felt very embarrassed because I had to uncover my stomach"* ($P_3$, Gaza, 14).

## 4.8 Level of attitudes towards menstrual hygiene management among study participants

**Table 4.6: Level of attitudes towards menstrual hygiene management among study participants**

| | Item | Strongly agree | | Agree | | Neutral | | Disagree | | Strongly disagree | | Mean | Weighted Mean |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % | N | % | N | % | | |
| 1 | During the menstrual cycle, it is preferable to dry the genital area with a towel after showering or urinating | 153 | 38.5 | 128 | 32.2 | 71 | 17.9 | 25 | 6.3 | 20 | 5 | 3.90 | 78 |
| 2 | I believe that washing hands after rinsing the genital area protects against disease | 220 | 55.4 | 127 | 32 | 33 | 8.3 | 14 | 3.5 | 3 | 8 | 4.36 | 87.2 |
| 3 | I think just washing underwear with water is enough to remove blood stains | 24 | 6 | 14 | 3.5 | 25 | 6.3 | 105 | 26.4 | 229 | 57.7 | 1.71 | 34.2 |
| 4 | I think drying the underwear after washing it inside the room is enough | 30 | 7.6 | 25 | 6.3 | 36 | 9.1 | 132 | 33.2 | 174 | 43.8 | 1.96 | 39.2 |
| 5 | It is preferable to place the used pads inside a plastic bag and tie it before disposing | 225 | 56.7 | 129 | 32.5 | 21 | 5.3 | 8 | 2 | 14 | 3.5 | 4.35 | 87 |
| **Score** | | **Mean 83.72 MD 84 Std 11.66** | | | | | | | | | | | |

Table 4.6 summarized the distribution of the study participants according to their responses about their attitude towards MHM. According to the results, attitudes was good (83.72%), Contrary to (Boakye-Yiadom, 2018) findings of slim good attitude towards MHM among adolescent female students in Ghana. This variation may attribute to religious difference that Islamic teachings had greatly influenced the Palestinian girls' attitude towards hygiene and "Tahara".

It can be clearly seen from these results that level of attitudes is better than that of their knowledge about MHM and the highest item was number (2) "I believe that washing hands after rinsing the genital area protects against disease" with a weighted mean equal to (87.2%), followed by item number (5) "It is preferable to place the used pads inside a plastic bag and tie it before disposing" with a weighted mean equal (87%). While the lowest item (3) "I think just washing underwear with water is enough to remove blood stains " with a weighted mean equal to (34.2%) followed by item was the number (4) "I think drying the underwear after washing it inside the room is enough" with a weighted mean equal (39.2%).

From the qualitative study, homogenous results were extracted as follow:

*"I believe that a girl should be clean and smell sweet during her period and all the time not only during menstruation"* ($P_4$, Rafah, 16).

*"The girl should be different from the guy, taking more care of herself, her appearance, and her hygiene"* ($P_3$, Middle, 14).

*".....for example, washing hands is a very important thing, and at the same time it does not require effort, so why not do it"* ($P_9$, Khan Yunus, 15).

*"I change our underwear every day, and I feel that it is not enough. I have to rinse my body to feel clean"* ($P_5$, Gaza, 14).

## 4.9 Practices of menstrual hygiene management among study participants

**Table 4.7: Practices of menstrual hygiene management among study participants**

| Items | | N=397 | % |
|---|---|---|---|
| 1. Which absorbent do you use during your period (sanitary napkin) | Sanitary napkin* | 391 | 98.5% |
| | A new piece of cloth | 2 | 0.5% |
| | Sometimes a sanitary napkin/sometimes a new cloth | 3 | 0.7% |
| | An old piece of cloth | 1 | 0.3% |
| | | N=6 | |
| a. Do you wash the cloth before reusing it? | Yes* | 6 | 100.0% |
| | No | 0 | 0.0% |
| b. What materials do you use for washing? | Soap and water* | 6 | 100.0% |
| | Only water | 0 | 0.0% |
| | Soap and Disinfectant | 0 | 0.0% |
| c. What place do you use to dry reused cloth? | Open and sunny place* | 6 | 100.0% |
| | The closed and dark place | 0 | 0.0% |
| d. What place do you use to store the washed cloth? | Hidden places inside the bedroom* | 6 | 100.0% |
| | With other clothes inside the bathroom | 0 | 0.0% |
| | | N=397 | |
| 2. The number of times you change the pad per day | Three or more times daily* | 329 | 82.9% |
| | Less than three times daily | 68 | 17.1% |
| 3. Do you wash your genitals during your period? | Yes* | 397 | 100.0% |
| | No | 0 | 0.0% |
| 4. How often do you wash your genitals? | Four and more* | 281 | 70.8% |
| | Less than four | 116 | 29.2% |
| 5. What materials do you use to wash the genitals during the menstrual cycle? | Soap and water* | 245 | 61.7% |
| | Water only | 60 | 15.1% |
| | Water-based soap and disinfectant | 92 | 23.2% |
| 6. Do you shower during menstruation? | Yes* | 341 | 85.9% |
| | No | 56 | 14.1% |
| 7. If the answer is yes, how often do you shower during menstruation? | At least once a day* | 205 | 51.6% |
| | Irregular or less than once a day | 192 | 48.4% |
| 8. I dispose of pads after use by | I put it in the basket* | 384 | 96.7% |
| | I put it on the toilet seat and then pour water | 13 | 3.3% |

*Correct Answer; **N**: number of subjects

Table 4.7 presents the distribution of study participants according to their reported practices of menstrual hygiene management (MHM). The majority of the participants (98.5%) reported using a sanitary napkin during their period as revealed in previously published

(Hassan et al., 2023) (Crankshaw, Strauss & Gumede, 2020), (Samantaray, Mohapatra, & Vivekanand, 2020). However, a small percentage of participants reported other practices, with (0.5%) using a new piece of cloth, (0.7%) using both a sanitary napkin and a new cloth at different times, and (0.3%) using an old piece of cloth. Those six participants; were washing the cloth before reusing it by water and soap, also, they using an open and sunny place to dry reused cloth and using hidden places inside the bedroom to store the washed cloth during menstruation. Although (98.5%) of our respondents were using sanitary pads or napkins as an adsorbent material. This finding is against to another study conducted in India (Dasgupta & Sarkar, 2008), whereby an under usage of napkins due to high cost and to some extent ignorance dissuaded the study population from using the menstrual absorbents available in the market. A possible explanation of this difference is the long gap between the two studies and since then much has evolved in terms of knowledge dissemination (especially the evolution of social media). Besides that, participants of the Indian study belonged to a rural setting.

The results indicate that (82.9%) of the participants have changing their pads three or more times daily. Besides that (70.8%) of the girls had washing their genitals four or more times daily during their period, when participants being asked about the materials, they use to wash their genitals during their menstrual cycle they answered use soap and water (61.7%), which is the recommended method. All these results are consistent with the findings of (Felleke & Gerada, 2020).

The survey asked participants whether they shower during menstruation, and 341 participants (85.9%) answered: "yes" while 56 participants (14.1%) answered "no". Out of 397 participants, (51.6%) answered that they shower at least once a day. Equivalently Yaliwal et al (2020) reported that majority of participated adolescent girls have bathing during menstruation.

In terms of the disposal of pads after use, no participant answered that they bury them under the soil or throw it in open spaces, while 384 (96.7%) dispose of their pads by putting them in the basket. Similar to that (94%) of respondents in the WB; particularly Nablus had a proper way of disposing of dirty pads (Shalabi-Abbas et al., 2018). In the current study, sadly, there is (3.3%) of the surveyed girls putting it in the toilet seat and then pour water.

In regard to menstrual hygiene practices groups discussion; many respondents expressed a positive practice during their menstrual cycle. Discussion takes a place to review the practices they do, in terms of the type of absorbent they use, the number of changes per day, take a shower and disposal method of used pads. As it showed below:

*"I used sanitary pads; I send my little brother to buy when needed" (*$P_6$, Khan Yunus, 15).

When another student was asked about cloth pieces; she answered *"Not all sanitary pads are good, some of them are rough, and no problem if one uses cloth" (*$P_7$, Rafah, 14).

*"I take a shower, but my mother says that it can be interrupted, and it really happens like this, because when I take a shower instead of a week, it becomes 5 days, although I keep taking a shower during menses"* ($P_2$, Gaza, 16).

*"I wrapped the towel in a package and threw it in the basket"* ($P_2$, North, 16). While another girl from the same group stated *"We put the towel in one bag in the bathroom, and when the days of the period are over, we throw it away once"* ($P_5$, North, 16).

*"I change the pad 3 times a day and during heavy days I change it more"* ($P_5$, Gaza, 14).

*"The underwear from the period was washed them immediately away from the rest of other clothes"* ($P_4$, Middle zone, 14).

**4.10 Accessibility to sanitary napkins**

According to the accessibility to sanitary napkins by adolescent girls participated in the study; (N= 337, 84.9%) of girls reported that sanitary napkins are available around their homes, comparable to the results of a survey conducted in Ethiopia among adolescent girls that most respondents reported accessibility and availability of sanitary pads in the markets (Shumie,& Mengie, 2022). While in the current study (N= 18 ,4.5%) said that unavailable and (N= 42, 10.6%) they don't know. Equally important when asked about what depends on their choice of the type of sanitary napkins; they considered comfortability was the basic criterion (N= 312, 78.6%) then they confirmed about the safety (N= 33, 8.3%), the cost (N= 27, 6.8%) and the availability of absorbent type (N=25, 6.3%). Also, there were (N= 354, 89.2%) of the adolescent girls bought sanitary napkins during the preceding two months from filling questionnaire. The other participant may have sanitary napkins previously.

### 4.11 Barriers to use sanitary napkins among study participants

Of the 397 study participants; six participants were faced some hindrances for using sanitary napkins as parent refusing, shaming from seller or others in site of purchasing, cost, accessibility, allergy problems so they preferred to use cloth for more comfortability. These results of six participants aren't significant to be investigated in our context. However, in a similar context, Lebanon it was estimated that 66% of adolescent Lebanese girls cannot afford menstrual products to manage their menstrual cycle (Sacca et al, 2023) as the country sinks deeper into economic turmoil and healthcare devastation. In other different country in the world such as India; when asking adolescent girls about using sanitary napkins, the vast majority of girls chose cloth items over sanitary napkins as menstrual absorbents. Apparently, they avoided using the menstrual absorbents available on the market due to poverty, the high cost of disposable sanitary pads, and to some extent illiteracy (Sultan & Sahu, 2017).

### 4.12 Sociocultural practices among study participants

**Table 4.8: Sociocultural practices among study participants**

| | Item | Yes | | No | |
|---|---|---|---|---|---|
| | | N | % | N | % |
| 1 | Bathing during the first day of your period | 241 | 60.7 | 156 | 39.3 |
| 2 | Comb your hair during your period | 370 | 93.2 | 27 | 6.8 |
| 3 | Cut your nails during your period | 298 | 75.1 | 99 | 24.9 |
| 4 | Telling friends about your period dates | 101 | 25.4 | 296 | 74.6 |
| 5 | Drink warm drinks | 354 | 89.2 | 43 | 10.8 |
| 6 | Entering the kitchen during your period | 335 | 84.4 | 62 | 15.6 |
| 7 | Going out and making visits during your period | 287 | 72.3 | 110 | 27.7 |
| 8 | You wash your clothes separately from the clothes of the rest of the household | 298 | 75.1 | 99 | 24.9 |
| Score | | Mean 71.91 MD 75 Std15.81 | | | |

The results shown in Table 4.8, infer that (71.91%) of adolescent girls perform some of sociocultural practices without restrictions, (93.2%) of the girls combing their hair. In regards to cutting nails (24.9%) of the girls don't cut their nails. However, (74.6%) of adolescent girls didn't telling their friends about menstrual dates, identical result was

obtained from a university female in the WB (Hassan et al., 2023). As common in our culture, (89.2%) were drinking warm drinks as herbal tea similar to (Shalabi-Abbas et al., 2018). In contrast, (84.4%) were allowed to enter the kitchen while (15.6%) weren't allowed and (72.3%) of the adolescents making visits without restrictions, furthermore, around (75%) washing their clothes separately from the clothes of the rest of the household.

From the qualitative study, most of participants in the interviews approved the mentioned social practices and do them without any restrictions, while three girls don't.

*"I don't comb my hair because it's falling out a lot and no hair comes out instead"* ($P_6$, Rafah, 16).

*"It is not permissible to cut our nails because they do not grow long after that*" ($P_7$, Middle zone, 14).

*"We are forbidden to put our hands in collective food; every girl eats from her plate only"* ($P_6$, Rafah, 16).

One of the students stated that social visits were also affected; restrictions to sleep outside home with relatives, especially those who had male young *"I used to go to sleep at my aunt's house now it is forbidden"* ($P_4$, Middle zone,14).

Most of the participants added other restrictions and the changes that occurred in their lives after their period. They were dissatisfied with it and resentful because they were other than what they used to do before. Generally, families in Gaza impose restrictions on their daughters at the onset of puberty, such that girls stop playing outside the house, reduce contact with male cousins and wear hijab.

*"I used to play in the street with all the kids, but my mother told me, if you want to play, go and wear a hijab, and I am ashamed, so I don't go anymore"* ($P_9$, Middle zone,14).

Another student stated *"In the past, we used to play in the street, boys and girls, now we sit at the door talking in a low voice and we don't laugh a lot"* ($P_3$, North, 16).

Also, student no. 8 from Gaza at age fourteen stated *"I used to play with my cousins, but now I'm ashamed to play with them"* ($P_8$, Gaza, 14).

Regarding the style of clothes, they reported that after menarche they choose their clothes carefully to

*"I wear a blouse and a jacket over it, so that if it leaks, it won't show from the outside"* ($P_{10}$, Khan Yunus, 15).

*"When I buy clothes from the market, I choose them that are wide, long, and dark in color"* ($P_5$, Khan Yunus, 15).

*"During the days of the menstrual cycle, I am afraid to wear short clothes for fear that they will be imprinted on them* ($P_3$, North, 16).

Regarding religious commitment; majority of the students during the interviews stated that the thing which changed the most after the onset of menstruation was their wearing of the "hijab". Among them are those who wore it while they are forced because they feel themselves young and do not want to be responsible, and others wore it as a commitment to the instructions of the "Islamic religion" and they are satisfied.

*"I didn't want to wear a hijab though Baba sat with and told me about the hijab. He told me that he does not want me to wear the hijab at this age (14 years old), but we live with people and we are not alone and their words are ruthless and they will say bad things about you"* ($P_5$, Khan Yunus, 15).

*"I didn't want him because everything would be calculated on me and responsible for my actions"* ($P_6$, Gaza, 14).

*"I didn't like it because I'm young and I don't want to wear hijab, but they say it's forbidden. You have to hijab the first time your period comes"* ($P_8$, Middle zone,14).

*"My mother brought me all kinds and colors of shawls. I did not want to wear them because I had cut my new hair and was happy with it, but I wore it"* ($P_2$, North, 16).

*"When I got my period, I was happy because I wanted to wear the hijab and become an adult, and I am already convinced of it, and no one forced me to do it"* ($P_2$, Rafah, 15).

### 4.13 Family role regarding menstruation among study participants

**Table 4.9: Family role regarding menstruation among study participants**

| | Item | Yes | | No | |
|---|---|---|---|---|---|
| | | N | % | N | % |
| 1 | Sanitary pads are always provided by my parents | 391 | 98.5 | 6 | 1.5 |
| 2 | Soap is provided for permanent cleaning | 388 | 97.7 | 9 | 2.3 |
| 3 | Provide analgesics or warm drinks | 322 | 81.1 | 75 | 18.9 |
| 4 | They understand mood changes | 302 | 76.1 | 95 | 23.9 |
| 5 | They give you priority to use the bathroom | 365 | 91.9 | 32 | 8.1 |
| 6 | They allow you to sleep and rest when you want | 330 | 83.1 | 67 | 16.9 |
| Score | | Mean 88.06 MD 100 Std 17.56 | | | |

The total family role regarding menstrual issues among female adolescents is reported to be (88.06%) based on the results presented in the table (4.9). The results indicate a high level of support from the family, as evidenced by the high percentages of positive responses across various indicators. The same result was found by (Kurnia, Krisnana, & Zikriani, 2019). However, limited support was found in the community-based survey in India, girls reported being isolated during menstruation from their family members (Arumugam et al., 2014). This variation in the results may explained by the setting of Indian study in rural region indicating low socioeconomic status.

For instance, (98.5%) of respondents reported that sanitary pads are always provided by their parents, highlighting a proactive approach to meeting their menstrual needs. Furthermore, (97.7%) indicated that soap is provided for permanent cleaning, emphasizing the family's recognition of the importance of maintaining proper hygiene during menstruation. A significant proportion of participants reported that they were given priority to use the bathroom (91.9%), indicating a supportive environment where their needs are respected.

The results also suggest that the family acknowledges the physical and emotional challenges associated with menstruation. Approximately (83.1%) of participants reported being allowed to sleep and rest when they wanted, indicating an understanding of the need for rest during

this time. Additionally, (81.1%) reported that analgesics or warm drinks are provided, indicating a recognition of the potential discomfort and pain experienced during menstruation. Equivalent to the finding among the adolescent girls in Nablus (Shalabi-Abbas et al., 2018). Lastly, the findings indicate a positive trend in the family's understanding of the emotional changes that accompany menstruation. Approximately (76.1%) of participants reported that their families understand their mood changes, suggesting an empathetic approach toward addressing emotional well-being during menstruation.

From the qualitative analysis, participant girls complained about the poor of family support for them prior to the prepubertal period, especially the mother, as she is the closest source for her daughter. From their point of view; there was insufficient information about this stage and preparing them psychologically for the changes that occur during it as a form of support.

*"I did not know anything about adolescence and menstruation, and my mother never informed me that I was young. But I used to see my older sister and learn from her experience"* ($P_3$, Khan Yunus, 15).

*"Of course, my mother was the one who taught me this and told me how to behave....The first time I had my period, my mother bought sanitary pads and told me to take one pad for school and other for putting it now and taught me how to put it because I didn't know.... Mama always made me aware"* ($P_5$, Gaza, 14).

*"In my opinion, the mother should tell her daughter early, not waiting when she becomes an adult, that is, when she is in the fifth grade, or before because when the school is late when they teach us, so it is possible that the girl went through the experience"* ($P_7$, Khan Yunus, 15).

*"Once I heard my father say to my mother when she asked him to buy sanitary pads: I don't have to keep buying pads; cut out of the cloth and use it"* ($P_5$, Rafah, 16).

### 4.14 Menstrual health education at schools

**Table 4.10: Menstrual health education**

| | Item | Yes | | No | |
|---|---|---|---|---|---|
| | | N | % | N | % |
| 1 | Have you received information about scientific concepts of menstruation? | 286 | 72 | 111 | 28 |
| 2 | Have you received information about menstrual hygiene? | 310 | 78.1 | 87 | 21.9 |
| 3 | Have you received information about physiological/physical changes prior to menstruation? | 285 | 71.8 | 112 | 28.2 |
| 4 | Have you received information about harmful consequences for noncompliance to MH practices? | 286 | 72 | 111 | 28 |
| 5 | Have you received information about harmful consequences for using absorbents other than sanitary pads? | 142 | 35.8 | 255 | 64.2 |
| **Score** | | **Mean 65.94 MD 60 Std 27.68** | | | |

The score of menstrual health education from student's perspective reveals varying levels of information they received across different aspects as showed in Table 4.10. it indicates an overall score of (65.94%). Based on the results provided; (78.1%) of participants reported receiving information about menstrual hygiene. In terms of scientific concepts of menstruation, (72%) of respondents reported receiving information in this area. This suggests that a significant portion of individuals have been educated about the physiological processes and biological aspects associated with menstruation. Similarly, (72%) of participants reported receiving information about the harmful consequences of noncompliance with menstrual hygiene practices. This demonstrates an understanding of the potential risks and health implications associated with inadequate menstrual hygiene.

In concern to the awareness of physiological or physical changes prior to menstruation, (71.8%) of respondents indicated receiving information in this regard. This suggests that a considerable number of individuals have been educated about the premenstrual symptoms and bodily changes that commonly occur before menstruation. However, when it comes to information about the harmful consequences of using absorbents other than sanitary pads,

the percentage drops significantly to (35.8%). This indicates a lower level of awareness among the respondents regarding the potential risks or adverse effects of using alternative menstrual absorbents.

From the qualitative data; menstrual health education is highly valued among the participants. Although Gazan schools now teach students about sexual and reproductive health, including menstruation in the seventh grade (or 13 years old) are the first to learn about menstruation, Indeed, majority of the students declared that there is no comprehensive explanation with scant information about menstruation and menstrual hygiene issues and they aren't satisfied from the role of their schools.

*"At school, they don't tell us in details, but there is a general explanation from the book"* ($P_3$, Gaza, 14).

**"…***they rarely talk about such topics, but the science teacher talks scantly and from biological vision only"* ($P_6$, Gaza, 14).

*"When the teacher is talking about puberty and menstruation, she is quick and wants to follow the curriculum"* ($P_7$, Middle zone,14).

*"In the seventh grade, they tell us that one of the signs of puberty for girls is menstruation, without any other details. Then, in the tenth grade, they explain it to us, and this is too late, because many girls have reached puberty"* ($P_9$, Khan Yunus, 15).

*"We did not study about menstrual hygiene. Only biology teaches information about the menses, but hygiene does not"* ($P_5$, Khan Yunus, 15).

*"Sometimes they talk during the school radio with some messages about personal hygiene, but I think that is something shouldn't said as well, so we do not care about.. Only this waste of time!"* ($P_5$, Rafah, 15).

Furthermore, the interviewed students preferred establishing an educational session about the menstrual cycle and puberty away from the curriculum. One participant agreed on the need for an educational curriculum on puberty, detailing hygiene issues during the menstrual cycle as she stated "*They have to give us educational lessons; we have girls in the class whose mothers are not educated. They don't know enough to take care of themselves"* ($P_2$, Khan Yunus, 15).

### 4.15 Schools facilities sanitation from students' perspective

**Table 4.11: Schools facilities sanitation from students' perspective**

| | Item | Yes | | No | | Don't know | |
|---|---|---|---|---|---|---|---|
| | | N | % | N | % | N | % |
| 1 | There are toilets in the school | 377 | 95 | 11 | 2.8 | 9 | 2.3 |
| 2 | Toilets have lockable doors | 341 | 85.9 | 28 | 7.1 | 28 | 7.1 |
| 3 | Toilets are clean | 103 | 25.9 | 241 | 60.7 | 53 | 13.4 |
| 4 | There are baskets in the toilets | 256 | 64.5 | 84 | 21.2 | 57 | 14.4 |
| 5 | There are handwashing stations | 357 | 89.9 | 23 | 5.8 | 17 | 4.3 |
| 6 | Water is always available in the bathroom | 252 | 63.5 | 99 | 24.9 | 46 | 11.6 |
| 7 | Soap is always available in the bathroom | 111 | 28 | 217 | 54.7 | 69 | 17.4 |
| 8 | Toilet paper is always around | 5 | 1.3 | 312 | 78.6 | 80 | 20.2 |
| 9 | I can go to the bathroom easily | 198 | 49.9 | 159 | 40.1 | 40 | 10.1 |
| 10 | There is enough time in break to go to the bathroom | 208 | 52.4 | 137 | 34.5 | 52 | 13.1 |
| 11 | The school has sanitary pads in case of a sudden bleeding | 147 | 37 | 124 | 31.2 | 126 | 31.7 |
| 12 | You are allowed to leave the class if you have heavy bleeding | 260 | 65.5 | 43 | 10.8 | 94 | 23.7 |
| 13 | The number of toilets in the school is proportional for the number of students | 169 | 42.6 | 129 | 32.5 | 99 | 24.9 |
| **Score** | | **Mean 53.94 MD 53.84 Std 21.21** | | | | | |

The total score for school facilities regarding menstrual hygiene management (MHM) from the study participants perspectives reported as (53.94%), based on the results provided in Table 4.11. The table includes various items that reflect the availability and adequacy of facilities in schools to support MHM. Among these items, the highest percentage was observed for the statement "There are toilets in the school" with (95%) agreement. This indicates that the majority of respondents reported the presence of toilets in their schools, which is a crucial requirement for managing menstrual hygiene. Furthermore, (89.9%) of participants indicated the availability of handwashing stations in schools, emphasizing the importance of promoting personal hygiene practices beyond just toilet facilities. The results also suggest that (85.9%) of respondents reported that toilets have lockable doors, which is essential for ensuring privacy and security during for students.

Regarding specific needs related to menstruation, (65.5%) of participants reported being allowed to leave the class if they have heavy bleeding. This indicates a level of flexibility and understanding from the school staff regarding the challenges faced by students during menstruation. Additionally, (64.5%) of respondents reported the presence of baskets in the toilets, suggesting the availability of proper waste disposal mechanisms. For instance, (52.4%) of participants reported having enough time during breaks to go to the bathroom, indicating that a significant portion of students may feel rushed or have limited opportunities to manage their menstrual hygiene needs. Similarly, (49.9%) reported being able to easily access the bathroom, indicating that some students may face difficulties or obstacles in reaching the facilities.

Other areas that require attention include the proportionality of toilets for the number of students (42.6%), availability of sanitary pads in cases of sudden bleeding (37%), presence of soap in the bathroom (28%), cleanliness of toilets (25.9%), and availability of toilet paper only (1.3%). These results are similar to El Zobeidi R. (2014) findings; that (81.6%) of surveyed students indicate absence of cleaning materials. Even so, in Nablus (60%) reported the availability of soap and water in school toilets (Shalabi-Abbas, et al., 2018). All these findings highlight areas where improvements in infrastructure, resources, and maintenance are needed to better support MHM in schools.

From the qualitative data, the researcher found that most participant students were unsatisfied from their school hygienic facilities; they listed the following complaints:

**The lack of cleanliness in the bathrooms and avoid using them**

*"The bathroom is so disgusting that you can't stand it I ask the teacher to go to their toilet"* ($P_7$, Khan Yunus, 15).

*"I try and endure not to use the school bathroom because it is so disgusting"* ($P_6$, Gaza, 14).

Two participants attributed the lack of cleanliness of the school bathrooms to the students behavior, as they are responsible for the cleanliness of their school and the preservation of its property as she stated *"....the bathroom is not clean at all because the girls do not clean it after using it"*($P_1$, Gaza, 14) and the other stated *"Girls are the ones who dirty the school bathrooms, because many times I see the used sanitary pads thrown on the floor"(* $P_3$, North, 16).

**No privacy**

*".... the door does not close properly" (*$P_6$, North, 16).

**Lack for source of water however,** Availability of water, sanitation and hygiene at schools is critical to create a healthy environment for students

*"There is no bidet or broken in the toilet seat" (*$P_1$, Rafah, 14).

*"Most of the time the water tap is broken and not working" (*$P_3$, Gaza,14).

**Poor supplies of hygienic material**

*"At the beginning of the school year there was soap in the bathroom after that it was not there"* ($P_7$, Khan Yunus, 15).

*"There are no tissues or soap, even water sometimes it is and sometimes not"* ($P_4$, Rafah, 15).

Menstrual first aid availability at schools were also discussed during the meetings from the student's point of view. Some of them complained about the lack of sanitary pads and poor understanding from the school staff about menstrual issues. As one student stated that she didn't get a pad during school hours: *"once I had my period suddenly, and I did not have a towel with me, so I went down to the counselor to ask for a towel, but there is no….I went to*

*the director to call my parents to get me a towel.. she told me to wait until the end of school, and after a discussion, she agreed to call to go home*" ($P_3$, North, 16).

Another student said: *"There is no sanitary pads in my school.. I asked for one, they told me to buy from the canteen, but the seller was a male!*" ($P_5$, North, 16).

Another student confirmed as she stated *"the school does not provide anything for the students. It is difficult for us to go to the bathroom, even sanitary pads that are not provided for us***"** ($P_1$, Khan Yunus, 15).

*"Once, I told the teacher, I want to go to the counselor, but she didn't agree…I told her, I want to go to the bathroom, also no…..I was embarrassed to tell her why; although she should understand me"* ($P_5$, Khan Yunus, 15).

Nevertheless, other participants expressed availability of supplies in their schools in terms of the presence of sanitary pads or painkillers, but the defect was in their lack of awareness of their availability. Also, there was confusion among them about a focal point that they would turn to when needed.

*"When I had my period, I was pain, I asked the health teacher for analgesic and she gave me"* ($P_8$, Middle zone,14).

*"Now I know that there are sanitary pads at the educational counselor"* ($P_5$, Gaza, 14) and another student from the same school stated *"Once I went with my friend and asked the counselor for a pad; that was the first time I knew that there were pads in the school. Before that, I needed a pad but I used toilet paper instead"* ($P_8$, Gaza, 14).

*"Our school always provide sanitary pads"* ($P_6$, Middle zone,14).

## 4.16 Distribution of Knowledge, attitudes, and practice scores among study participants

**Table 4.12: Distribution of knowledge, attitudes, and practice scores among study participants**

| Variables | Knowledge scores | N | %[£] |
|---|---|---|---|
| Knowledge about menstruation | Good | 147 | 37.0% |
| | Fair | 132 | 33.2% |
| | Poor | 118 | 29.8% |
| Knowledge about MHM | Good | 273 | 68.8% |
| | Fair | 79 | 19.9% |
| | Poor | 45 | 11.3% |
| Attitudes towards menstruation | Good | 17 | 4.3% |
| | Fair | 251 | 63.2% |
| | Poor | 129 | 32.5% |
| Attitudes towards MHM | Good | 321 | 80.9% |
| | Fair | 73 | 18.3% |
| | Poor | 3 | 0.8% |
| Practice MHM | Good | 212 | 53.4% |
| | Fair | 166 | 41.8% |
| | Poor | 19 | 4.8% |

N: number of subjects; SD: standard deviation; Min: minimum; Max: maximum; [£]Maximum score of mean = 100 points; We categorized adolescent girls' KAP scores into three categories based on the percentage of maximum possible scores: poor-(0%-50%), fair (51-75%) or good (76-100%).

Table 4.12 represents the distribution of participants across different levels of knowledge, attitudes, and practice related to menstruation and menstrual hygiene management (MHM). In terms of knowledge about menstruation, the participants fell into the categories of good, fair, and poor knowledge, with percentages of 37.0%, 33.2%, and 29.8% respectively. This result was contrasts to the Ethiopian study that 68.3% of adolescent school girls had poor knowledge regarding menstrual bleeding (Belayneh & Mekuriaw, 2019). The possible explanation for this discrepancy might be the difference in the educational level of the mothers of the participants, so that most of them are illiterate 35%, in contrast to the mothers of the participants in the current study, most of whom are educated. In addition, the sample size is half the size of the Ethiopian study sample.

When it comes to knowledge about MHM, a higher percentage of participants reported having good knowledge (68.8%). This is in agreement with a study done in Central Ethiopia revealed that majority of 415 adolescents had good overall knowledge about MHM (Bulto, 2021). In contrast to the finding of (Yadav et al., 2017) where only 26.4% of the Nepali participants had good knowledge on menstrual hygiene management. As the Nepali study where conveyed in a rural context other than the current study. Additionally, (19.9%) of the girls had fair knowledge and (11.3%) had poor knowledge. This indicates a relatively higher level of understanding and awareness regarding MHM among the participants.

Regarding attitudes towards menstruation, a small proportion of participants (4.3%) expressed a good attitude, while a larger percentage had a fair attitude (63.2%) and a significant portion had a poor attitude (32.5%). In terms of attitudes towards MHM, the majority of participants (80.9%) exhibited a good attitude, indicating a positive perspective on MHM. A smaller proportion (18.3%) had a fair attitude, while only a very small number (0.8%) had a poor attitude towards MHM. This revelation was similar to findings by (Balqis, Arya & Ritonga, 2016) and (Gedefaw et al., 2019). This might be because both study samples live in an area which often expose to the media, frequently along with the educated people, and averagely came from stable socioeconomic status family.

Finally, in terms of the practice of MHM, more than half of the participants (53.4%) reported good practices, this result parallel with the finding of (Shumie & Mengie, 2022) in which more than 50% of participant girls have good menstrual hygiene practices. While a significant portion (41.8%) had fair practices. A relatively small percentage (4.8%) reported poor practices, indicating a generally favourable trend in terms of implementing MHM practices among the participants.

## 4.17 The relation between Knowledge of menstruation and sociodemographic characteristics among study participants

**Table 4.12: The relation between Knowledge of menstruation and sociodemographic characteristics among study participants**

| Sociodemographic characteristics | | N | Knowledge about menstruation (Score %) | | Statistical Analysis | | |
|---|---|---|---|---|---|---|---|
| | | | Mean | SD | t/F | P-value | Post Hoc |
| Age | ≤14 years | 130 | 57.95 | 23.64 | -4.745 | 0.000 | |
| | >14 years | 267 | 68.12 | 18.06 | | | |
| Education levels | Preparatory school | 168 | 60.45 | 23.44 | -3.655 | 0.000 | |
| | Secondary school | 229 | 67.98 | 17.60 | | | |
| Governorate | North | 65 | 65.98 | 17.66 | 3.772 | 0.005 | Gaza> Khan Younus |
| | Gaza | 142 | 68.15 | 20.42 | | | |
| | Middle | 37 | 67.27 | 15.70 | | | |
| | Khan Yonus | 112 | 58.63 | 23.21 | | | |
| | Rafah | 41 | 65.85 | 18.82 | | | |
| Class | Seventh Grade | 43 | 49.10 | 21.72 | 9.464 | 0.000 | $7^{th} < 9^{th}$, $10^{th}$, $11^{th}$, $12^{th}$ |
| | Eighth Grade | 36 | 58.02 | 27.10 | | | |
| | Ninth Grade | 47 | 64.07 | 20.23 | | | $8^{th} < 10^{th}$, $12^{th}$ |
| | Tenth Grade | 129 | 70.37 | 17.53 | | | |
| | Eleventh Grade | 72 | 63.27 | 18.33 | | | |
| | Twelfth Grade | 70 | 69.68 | 17.94 | | | |
| Family type | Nuclear | 387 | 64.51 | 20.72 | 3.251 | 0.008 | |
| | Extended | 10 | 75.56 | 10.21 | | | |

The findings presented in Table 4.12 demonstrate the relationship between knowledge of menstruation and various sociodemographic characteristics among governmental adolescent school girls. The results indicate that there were statistically significant differences (t= -4.74, sig= 0.000 $\alpha \leq 0.05$) in the age groups as girls older than 14 years possess significantly higher knowledge about menstruation compared to girls with 14 years or less (68.12 vs. 57.95) respectively. Accordingly, this corresponds to the result that indicates secondary school students possess significantly higher knowledge about menstruation compared to preparatory school students (67.98 vs. 60.45) respectively. Similarly, VG Rupashree & Somasundaram (2021) stated that awareness of adolescent girls was highly dependent on their age. The same result was found by Parle & Khatoon (2019) that adolescents age was significant to impact their knowledge.

Moreover, a statistically significant difference was observed among different governorates in terms of knowledge of menstruation among the participants (F= 3.77, sig= 0.005 $\alpha \leq 0.05$). Specifically, post hoc scheffe analysis revealed that Gaza governorates exhibited significantly higher knowledge about menstruation compared to Khan Younus governorate (68.15 vs. 58.63) respectively, while no significant differences were found among the other governorates. Additionally, there was a statistically significant difference in knowledge of menstruation based on grade level among governmental adolescent school girls (F= 9.46, sig= 0.000 $\alpha \leq 0.05$). Post hoc scheffe analysis indicated that seventh-grade students had significantly lower knowledge about menstruation compared to ninth, tenth, eleventh, and twelfth-grade students. Furthermore, eighth-grade students displayed significantly lower knowledge about menstruation compared to tenth and twelfth-grade students. an independent sample t test was conducted to examine whether there were statistically significant differences between the family type of adolescent girls and their knowledge about menstruation. The test revealed a statistically significant difference (t=3.25, sig=0.008 $\alpha \leq 0.05$). Knowledge of adolescents living among nuclear families were higher than that of adolescents living among extended families. Contrary to (Sonowal, Talukdar & Saikia, 2021) findings of a no association between the two variables. It might be that adolescent who live within a nuclear family were better monitored and guided during their menstrual period compared to those who reside with other relatives (extended family) as those adolescents may receive less attention and care. Also, those who live with relatives might not discuss openly about menstruation.

Finally, the results indicated that there were no statistically significant differences in knowledge of menstruation concerning other sociodemographic characteristics, including parent marital status, mother's education level, father's education level, sibling status, and income (p-value > 0.05).

## 4.18 The relation between Knowledge of MHM and sociodemographic characteristics among study participants

**Table 4.13: The relation between Knowledge of MHM and sociodemographic characteristics among study participants**

| Sociodemographic characteristics | | N | Knowledge about MHM (score %) | | Statistical Analysis | | |
|---|---|---|---|---|---|---|---|
| | | | Mean | SD | t/F | P-value | Post Hoc |
| Age | ≤14 years | 130 | 71.79 | 26.31 | -5.05 | 0.000 | |
| | >14 years | 267 | 82.08 | 14.25 | | | |
| Education levels | Preparatory school | 168 | 73.61 | 24.76 | -4.54 | 0.000 | |
| | Secondary school | 229 | 82.46 | 13.66 | | | |
| Governorate | North | 65 | 77.55 | 21.09 | 4.59 | 0.001 | Khan yonus < Gaza & Rafah* |
| | Gaza | 142 | 82.25 | 19.90 | | | |
| | Middle | 37 | 81.41 | 12.80 | | | |
| | Khan Yonus | 112 | 73.93 | 24.41 | | | |
| | Rafah | 41 | 87.68 | 13.46 | | | |
| Class | Seventh Grade | 43 | 64.26 | 31.99 | 7.49 | 0.000 | $7^{th} < 8^{th}, 9^{th}, 10^{th}, 11^{th}, 12^{th}$ * |
| | Eighth Grade | 36 | 72.67 | 27.88 | | | |
| | Ninth Grade | 47 | 80.40 | 20.28 | | | |
| | Tenth Grade | 129 | 83.05 | 16.47 | | | |
| | Eleventh Grade | 72 | 81.38 | 15.87 | | | |
| | Twelfth Grade | 70 | 83.97 | 14.52 | | | |
| Family type | Nuclear | 387 | 79.19 | 18.82 | 3.08 | 0.000 | |
| | Extended | 10 | 60 | 37.01 | | | |

The findings presented in Table 4.13 provide insights into the relationship between knowledge of Menstrual Hygiene Management (MHM) and various sociodemographic characteristics among governmental adolescent school girls. The results indicate that there were statistically significant differences (t= -5.05, sig= 0.000 $\alpha \leq 0.05$) in the age groups as girls older than 14 years possess significantly higher knowledge about menstruation compared to girls with 14 years or less (82.0 vs. 71.7) respectively. This result was consistent with previous studies. In Ghana, there was a statistically significant association with age, thus older adolescent female students are two times more likely to have adequate knowledge about menstrual hygiene compared to younger adolescent female students (Boakye-Yiadom et al., 2018).

Also, the results reveal that there were a s statistically significant differences (t= -4.54, sig= 0.000 $\alpha \leq 0.05$) in the educational level as secondary school students possess significantly higher knowledge about MHM compared to preparatory school students (82. 4vs. 73.6),

respectively. It was noted the same by (Fehintola et al, 2017) when data were collected from adolescent females in Nigeria indicated that adolescents in the age group 15-19 years (secondary) had higher knowledge of menstrual hygiene compared to those in age group 10-14 years (preparatory). This implies the need for early awareness for adolescents to prevent misinformation in their knowledge about menstrual issues.

Furthermore, there is a statistically significant difference in MHM knowledge among different governorates ($F= 4.59$, $sig= 0.001$ $\alpha \leq 0.05$). Post hoc scheffe analysis shows that Khan Younus governorate have significantly lower knowledge about MHM compared to Gaza and Rafah governorates, while no significant differences were observed among the other governorates. This indicates that there no variations in MHM knowledge across different regions. Additionally, grade level significantly influences MHM knowledge among governmental adolescent school girls ($F= 7.49$, $sig= 0.000$ $\alpha \leq 0.05$). Post hoc analysis demonstrates that seventh-grade students have significantly lower knowledge about MHM compared to eighth, ninth, tenth, eleventh, and twelfth-grade students. These findings were consistent with obtained from adolescent girls in Ghana whereby age, grade level, area of their residence showed significant association with knowledge about MHM (Shumie & Mengie, 2022).

An independent sample t test was conducted to examine whether there were statistically significant differences between the family type of adolescent girls and their knowledge about MHM. The test revealed a statistically significant difference ($t=3.08$, $sig=0.000$ $\alpha \leq 0.05$). Knowledge of adolescents living among nuclear families were higher than that of adolescents living among extended families; this can be explained that the majority of the study sample were from nuclear families ($N= 387$, 97.5%). Finally, the results indicate that there are no statistically significant differences in knowledge of MHM based on other sociodemographic characteristics, such as parent marital status, mother's education level, father's education level, sibling status, and income (p-value > 0.05). However, Fehintola et al. (2017) observed that mother education level had an impact on the level of adolescent's knowledge about MHM.

## 4.19 The relation between attitudes and sociodemographic characteristics among study participants

**Table 4.14: The relation between attitudes towards menstruation and sociodemographic characteristics among study participants**

| Sociodemographic characteristics | | N | Attitude towards menstruation (score %) | | Statistical Analysis | | |
|---|---|---|---|---|---|---|---|
| | | | Mean | SD | t/F | P-value | Post Hoc |
| Governorate | North | 65 | 56.58 | 9.21 | 3.38 | 0.010 | Gaza > Rafah |
| | Gaza | 142 | 58.13 | 12.33 | | | |
| | Middle | 37 | 53.57 | 9.24 | | | |
| | Khan yonus | 112 | 54.30 | 11.59 | | | |
| | Rafah | 41 | 52.39 | 11.09 | | | |
| Class | Seventh Grade | 43 | 49.06 | 9.58 | 5.26 | 0.000 | $7^{th} < 8^{th}, 9^{th}, 10^{th}$ |
| | Eighth Grade | 36 | 56.98 | 12.57 | | | |
| | Ninth Grade | 47 | 59.19 | 12.76 | | | |
| | Tenth Grade | 129 | 57.91 | 11.06 | | | |
| | Eleventh Grade | 72 | 53.86 | 11.61 | | | |
| | Twelfth Grade | 70 | 54.26 | 9.05 | | | |

The findings presented in Table 4.14 provide valuable insights into the relationship between attitudes towards menstruation and various sociodemographic characteristics among governmental adolescent school girls. The results highlight statistically significant differences in attitude towards menstruation based on different factors. Firstly, a significant difference in attitude towards menstruation is observed among different governorates (F= 3.38, sig= 0.010 $\alpha \leq 0.05$). Post hoc scheffe analysis reveals that Rafah governorates exhibit significantly lower attitudes towards menstruation compared to Gaza, while no significant differences are found among the other governorates. This suggests the absence of variations in attitude towards menstruation across different regions, with Gaza governorates displaying a distinct pattern.

Furthermore, grade level significantly influences attitude towards menstruation among governmental adolescent school girls (F= 5.26, sig= 0.000 $\alpha \leq 0.05$). Post hoc scheffe analysis demonstrates that seventh-grade students have significantly lower attitudes toward menstruation compared to eighth, ninth, and tenth-grade students. This highlights the impact of grade level on shaping attitudes towards menstruation, with older students exhibiting more positive attitudes. similarly, (Borjigen et al., 2019) revealed that grade level influence over

the attitude. This might be due to the fact that older adolescent girls may have received more education and knowledge. thus, they have express a better attitude towards menstruation.

Lastly, the results indicate that there are no statistically significant differences in attitude towards menstruation based on other sociodemographic characteristics, including age, education levels, parent marital status, mother's education level, father's education level, sibling status, and income (p-value > 0.05). This suggests that these factors may not directly influence attitudes toward menstruation among governmental adolescent school girls in the context of this study.

### 4.20 The relation between the attitudes of MHM and sociodemographic characteristics among study participants

**Table 4.15: The relation attitudes towards MHM and sociodemographic characteristics among study participants**

| Sociodemographic characteristics | | N | Attitude towards MHM (score %) | | Statistical Analysis | | |
|---|---|---|---|---|---|---|---|
| | | | Mean | SD | t/F | P-value | Post Hoc |
| Age | ≤14 years | 130 | 82.70 | 13.13 | -1.21 | 0.003 | |
| | >14 years | 267 | 84.22 | 10.87 | | | |
| Class | Seventh Grade | 43 | 79.26 | 12.84 | 4.83 | 0.000 | $9^{th} > 7^{th}, 8^{th}$ |
| | Eighth Grade | 36 | 79.44 | 13.96 | | | |
| | Ninth Grade | 47 | 87.83 | 11.13 | | | |
| | Tenth Grade | 129 | 84.06 | 11.03 | | | |
| | Eleventh Grade | 72 | 82.28 | 13.39 | | | |
| | Twelfth Grade | 70 | 86.80 | 6.61 | | | |

The findings presented in Table 4.15 offer valuable insights into the relationship between attitudes towards MHM and various sociodemographic characteristics among governmental adolescent school girls. The results highlight statistically significant differences in MHM attitude based on two factors. The results indicate that the age of participants significantly influences MHM attitude (t= -1.21, sig= 0.003 $\alpha \leq .05$). The age group of girls older than 14 years possess slightly higher attitude towards MHM compared to girls with 14 years or less (84.2 vs. 82.7) respectively. The other factor was the grade level significantly influences MHM attitude among governmental adolescent school girls (F= 4.83, sig= 0.000 $\alpha \leq .05$).

Post hoc scheffe analysis reveals that ninth-grade students have significantly higher attitudes toward MHM compared to seventh and eighth-grade students. In the same line, a cross-sectional study was implemented among female high school in Ethiopia, result in grade level and age of the students were statistically associated ($p<0.05$) with their attitude towards MHM as students in the tenth grade were 1.9 more likely good attitude on menstrual hygiene as compared with students in the ninth grade (Gedefaw et al., 2019). This suggests that as students' progress to higher grade levels, their attitude toward MHM becomes more positive. Furthermore, the results indicate that there are no statistically significant differences in MHM attitude based on other sociodemographic characteristics, such as education levels, parent marital status, governorate, mothers' education level, fathers' education level, sibling status, and income (p-value > 0.05). This implies that these sociodemographic factors may not play a significant role in shaping MHM attitudes among governmental adolescent school girls in the context of this study.

## 4.21The relation between Practice of MHM and sociodemographic characteristics among study participants

**Table 4.16: The relation between Practice of MHM and sociodemographic characteristics among study participants**

| Sociodemographic characteristics | | N | Practice of MHM (score %) | | Statistical Analysis | | |
|---|---|---|---|---|---|---|---|
| | | | Mean | SD | F | P-value | Post Hoc |
| Class | Seventh Grade | 43 | 81.77 | 14.38 | 2.643 | 0.023 | $10^{th}$ <$11^{th}$ |
| | Eighth Grade | 36 | 80.39 | 16.19 | | | |
| | Ninth Grade | 47 | 84.23 | 10.67 | | | |
| | Tenth Grade | 129 | 78.02 | 14.81 | | | |
| | Eleventh Grade | 72 | 83.93 | 13.37 | | | |
| | Twelfth Grade | 70 | 83.44 | 14.52 | | | |

The findings presented in Table 4.16 provide valuable insights into the relation between the practice of and various sociodemographic characteristics among governmental adolescent school girls. The results indicate significant differences in MHM practice based on different factors. To begin with the results, suggest that grade level significantly influences MHM practice among governmental adolescent school girls ($F= 2.64$, $sig= 0.023$ $\alpha \leq 0.05$). Post hoc scheffe analysis reveals that eleventh-grade students exhibit significantly higher MHM practice compared to tenth-grade students. This implies that as students' progress to higher grade levels, their MHM practices tend to become more positive and informed. Gedefaw et al (2019) also reported the same, that being a girl in the tenth grade had 2.3 more likely had good practice on menstrual hygiene as compared to the ninth grade. In the same line, an assessment conducted in Ethiopia revealed that grade eleven students were 1.5 times more likely know about menstruation and menstrual hygiene than their counter parts who were in grade nine (Kitesa, Getahun & Wako, 2016).

Furthermore, the results indicate that there are no statistically significant differences in MHM practice based on other sociodemographic characteristics, including age, education levels, parent marital status, governorate, mothers' education level, fathers' education level, sibling status, family type and income (p-value > 0.05).

# Chapter Five

## Conclusion and Recommendations

### 5.1 Conclusion

The aim of the study is to explore the level of knowledge, attitudes and practices related to menstruation among adolescent females in the GS. These study findings may help in increasing and improving the level of knowledge, attitudes and practices related to menstruation and menstrual hygiene management and also has highlighted the need of adolescent girls to have accurate source of information about menstruation and adequate hygiene facilities.

In this mixed method study, the researcher sought to investigate the current level of KAP related to menstruation and menstrual hygiene, source of information, accessibility to sanitary napkins and also the barriers for continuous using. Furthermore, study family role during menstruation and school community in terms of comprehensive sexual education and WASH facilities. The study also identified the link between sociodemographic characteristics and variables under investigation. Participants were selected from preparatory and secondary governmental schools. In this study, 397 adolescent girls between the ages of 12 to 17 years; of them 130 girls fourteen years or less while 267 girls older than fourteen years. The mean age for menarche among participants was 13.11 years.

The study findings showed that the main source of information about menstruation and menstrual hygiene was received from mother (79.1%) which is a logic result; followed by sisters and school. This indicate the significant role of mother in shaping the menstrual background of the girls, channels of communication such as mothers and sisters, need to be emphasized for the delivery of such information to develop building the confidence of girls during adolescence.

It is appeared that the level of adolescent female's knowledge about menstruation was fair (64.7%) comparing with the sufficient knowledge about menstrual hygiene (79.6%). In the same manner, the results showed that the level of attitudes towards menstruation was lower than that related to menstrual hygiene. Important findings of this study were that sanitary

napkins were used by the vast majority of study participants and dispose it in the basket, furthermore, (85.9%) were showered during menstruation.

The study findings revealed that the accessibility to sanitary napkins and obstacles from continuous using were consistent so that the majority of the participants stated that they had access to sanitary napkins and did not face obstacles in using them. Moreover, the results stated that the most of the girls performed sociocultural practices without restrictions while (74.6%) didn't telling their friends about period dates. Majority of Gazan families were supportive to their daughters and providing hygienic materials during menstruation from participants perspective.

Overall, while the results indicate a reasonably high level of education regarding scientific concepts, menstrual hygiene and physiological/physical changes, there is a gap in providing information about the harmful consequences of using absorbents other than sanitary pads. The findings examined school facilities from the student's perspective. Although, the results indicate a relatively high availability of basic facilities such as toilets and handwashing stations in schools, it was reported that there was no toilet paper in the student's toilets inside the surveyed schools. Also, majority of schools didn't provide soap in the hand washing stations. According to the school facilities cleanliness, it was stated by (60.7%) of the students that toilets were dirty. It was extracted that sanitary pads weren't available in the school. Ensuring adequate time, accessibility, availability of necessary resources, and proper maintenance of facilities are essential for creating a supportive and hygienic environment that meets the menstrual hygiene needs of students.

In this study, there was a statistically significant relationship between the means of knowledge about menstruation and the age of participants, it was found that the mean of students aged older than 14 was (68.12%) better than for students aged 14 or less was (57.95%). Consequently, the knowledge among secondary schools was better than it in preparatory schools. The study indicated that student's knowledge from Gaza was (68.15%) higher than from Khan Yunus (58.63%). The level of knowledge found to be poor among the seventh (49.10%) and eighth (58.02%) grades comparing to the higher grades. Moreover, it was found that students from nuclear families had better knowledge than from extended families.

The study indicated that the level of attitude towards menstruation was the same among the age groups. Although, there were statistically significant relationship between the means of attitudes towards menstruation among the students living area. The results reported that the mean of students from Gaza was (58.1%) better than it in Rafah (52.3%). Moreover, students in the seventh grade had low attitudes towards menstruation than it among students in the ninth grade.

Study results revealed there was a statistically significant relationship between the means of knowledge about MHM and the age of participants, it was found that the mean of students aged older than 14 was (82.0%) better than for students aged 14 or less was (71.7%). Consequently, the knowledge among secondary schools was better than it in preparatory schools. The study indicated that students from Gaza was (82.2%) higher than from Khan Yunus (73.9%). The level of knowledge found to be poor among the seventh (64.2%) and eighth (72.6%) grades comparing to the higher grades. Noted that twelfth grade had the highest mean. Moreover, it was found that students from nuclear families had better knowledge than from extended families.

The study indicated that the level of attitude towards MHM was different among the age groups, it was found that the mean of students aged older than 14 was better than for students aged 14 or less. Thus, a statistically significant relationship between the means of attitudes towards MHM among students' classes. Moreover, students in the ninth grade had higher attitudes towards MHM than it among students in the seventh and eighth grades.

There were statistically significant differences between the means of menstrual hygiene practices among students' grades. It was found that the mean of students in the ninth grade was better than it in seventh grade and the mean of students in the tenth grade was lower than it in the twelfth grade.

## 5.2 Recommendations

Correct information will enable adolescent girls to follow safe and hygienic menstrual habits and escape ingrained prejudices and limits on menstruation. To achieve this, appropriate policies that can be a component of national health program should be developed and put into place. Family life/sexual education curricula should cover the physiology of the menstrual cycle, its relationship to reproduction, and the idea that menstruation is a natural occurrence free of any sort of filth. The health sector, in particular the public health system, should take the initiative. According to the study results, comprehensive efforts including policy implication are needed to improve girls' knowledge, attitudes and safe hygienic practices towards menstruation right from her adolescent period, the researcher recommends the following points to improve:

### 5.2.1 Recommendation for the Ministry of Education:

1. A well-informed continuous, school education program should be delivered to educate students about risks affecting their health at early age.
2. Revision and modification of curriculum to ensure that contents, fill gaps understandings. Also, information on safe hygiene and menstrual practices should be included in the school curriculum as bathing and frequency changing.
3. Permanent evaluation of the health-related curriculum implementation.
4. To build capacity of counselors to develop a close dialogue with the girls addressing their needs including menstrual hygiene.
5. Take advantages of the Menstrual Hygiene Day 28 May, in which, extracurricular activities should be conducted.
6. Recruit a female seller inn each canteen.
7. To promote communication between school staff and students informing them about school services as availability of sanitary pads.
8. Allocate a class every week to discuss different topics for adolescent girls, including menstrual issues.
9. To ensure and follow up the availability of hygienic materials in school toilets which is a responsibility of the school administration and intensive monitoring and supervision over the performance of school cleaners.
10. To engage mothers in a regular and sustainable awareness programs in schools in how to interact with their daughter at the age of puberty.

### 5.2.2 Recommendation for the Ministry of Health

1. The Ministry of Health together with the Ministry of Education should revise policies concerning school health programs construction and to activate and support adolescent health referral from schools to the PHC and encourage students to check about their SRH.
2. To mobilize NGOs to advocate and support that menstrual hygiene be included in school health programs.
3. Establish program to engage father in the adolescent reproductive health issues.

### 5.2.3 Recommendation for further studies:

1. Further qualitative study regarding of exploring of the female adolescent perceptions about puberty and sexual health.
2. Further research and interventions should focus on sustaining and strengthening this positive family role to ensure the holistic health and empowerment of young girls during their menstrual cycles.
3. Further studies on involving teacher led education on menstrual hygiene can be done and compared with peer group intervention.
4. Further studies about parents-adolescent communication regarding sexual and reproductive health issues.
5. Further study on engagement of male in reproductive and sexual health issues.

## References


Abu Hamad B., Gercama I., Hamra E., Jones, N. (2017): *No one told me about that*." Exploring adolescent access to health services and information in Gaza.

Abu Hamad B., Jones N., Gercama I. (2021). Adolescent access to health services in fragile and conflict-affected contexts: The case of the Gaza Strip. *Conflict and Health*, *15*(1), 1-13.

Accessed Aug 15, 2023

Afiaz A., Biswas K. (2021). Awareness on menstrual hygiene management in Bangladesh and the possibilities of media interventions: using a nationwide cross-sectional survey. *BMJ Open*, 11(4), e042134.

Ahuja M. (2016). Age of menopause and determinants of menopause age: A PAN India survey by IMS. *Journal of Mid-Life Health*, *7*(3), 126.

Al Bayoumi N., Diab R., Abu Hamad B. (2021). Knowledge, Attitudes and Practices among men in the Gaza Strip related to Sexual and Reproductive Health and Rights and Child-rearing.

Al Mutairi H., Jahan S. (2021). Knowledge and practice of self-hygiene during menstruation among female adolescent students in Buraidah city. *Journal of Family Medicine and Primary Care*, 10(4), 1569.

Al Omari O., Razeq A., Fooladi, M. (2016). Experience of menarche among Jordanian adolescent girls: An interpretive phenomenological analysis. *Journal of Pediatric and Adolescent Gynecology*, 29(3), 246-251.

Al Zaabi O., Heffernan M., Holroyd E., & Jackson M. (2019). Islamic parents' attitudes and beliefs towards school-based sexual and reproductive health education programmes in Oman. *Sex* Education, 19(5), 534-550.

Alharbi K., Alkharan A., Abukhamseen A., Altassan A., Alzahrani W., Fayed A. (2018). Knowledge, readiness, and myths about menstruation among students at the Princess Noura University. *Journal of Family Medicine and Primary Care*, 7(6), 1197.

Alliance for Reproductive Health Rights (ARHR) (2022):Menstrual Hygiene Management: Addressing Challenges to Improve Women and Girls' Well-Being https://arhr.org.gh/menstrual-hygiene-management-challenges/ Accessed March 25, 2023

Ameade K., & Garti A. (2016). Relationship between female university students' knowledge on menstruation and their menstrual hygiene practices: a study in Tamale, Ghana. *Advances in Preventive Medicine,* 2016.

Anwar S., Al Jahwari S., Al Kharousi R., Al Adawi. A., Samad A., Al-Zubaidi N. (2018). Knowledge and practices of Omani adolescent girls related to menstruation. *British Journal of Medical and Health Research*, 5(10), 47-55.

Arumugam B., Nagalingam S., Varman M., Ravi P., Ganesan R. (2014). Menstrual hygiene practices: Is it practically impractical? *International Journal of Medicine and Public Health*, 4(4).

Balqis M., Arya D., & Ritonga A. (2016). Knowledge, attitude and practice of menstrual hygiene among high schools' students in Jatinangor. *Althea Medical Journal,* 3(2), 230-238.

Banat. I., & Dayyeh J. (2019). Sexual education of Palestinian university students: Between perceptions and cultural barriers.

Belayneh Z., & Mekuriaw B. (2019). Knowledge and menstrual hygiene practice among adolescent school girls in southern Ethiopia: a cross-sectional study. BMC Public Health, 19(1), 1-8.

Belayneh Z., Mareg M., & Mekuriaw B. (2020). How Menstruation Is Perceived by Adolescent School Girls in Gedeo Zone of Ethiopia? *Obstetrics and Gynecology International*

Bhadauria S, Jain G, Puloriya K, Chouhan N. (2021). Knowledge, awareness and practices regarding menses and its hygiene among adolescent girls. *Indian Journal Obstetrics and Gynecolgy Research* ;8(4):518-524

Bhusal. K. (2020). Practice of menstrual hygiene and associated factors among adolescent school girls in Dang district, Nepal. *Advances in Preventive Medicine.*

Boakye-Yiadom A., Aladago A., Beweleyir J., Mohammed B., Salifu F., Asaarik M. (2018). Assessing the knowledge, attitude and practice of menstrual hygiene management among junior high schools adolescent females in the Yendi Municipality in the northern region of Ghana. *European Scientific Journal*, ESJ, 14(36), 467.

Borjigen A., Huang C., Liu M., Lu J., Peng H., Sapkota C., & Sheng J. (2019). Status and factors of menstrual knowledge, attitudes, behaviors and their correlation with psychological stress in adolescent girls. *Journal of Pediatric and Adolescent Gynecology*, 32(6), 584-589.

Boruah B., Hakmaosa A., Hajong S. (2022). A study on the knowledge and practices of menstrual hygiene among the adolescent girls of Nagaon, Barpeta District, Assam. *Journal of Family Medicine and Primary Care*, 11(10), 5918-5923.

Budhathoki, S. S., Bhattachan, M., Castro-Sánchez, E., Sagtani, R. A., Rayamajhi, R. B., Rai, P., & Sharma, G. (2018). Menstrual hygiene management among women and adolescent girls in the aftermath of the earthquake in Nepal. *BMC Women's Health*, 18(1), 1-8.

Bulto A. (2021). Knowledge on menstruation and practice of menstrual hygiene management among school adolescent girls in Central Ethiopia: a cross-sectional study. Risk management and healthcare policy, 911-923.

Burnett S., Thompson S., Bird G., Blakemore J. (2011). Pubertal development of the understanding of social emotions: Implications for education. *Learning and Individual Differences*, 21(6), 681-689.

Chandra-Mouli, V., Patel V. (2020). Mapping the knowledge and understanding of menarche, menstrual hygiene and menstrual health among adolescent girls in low-and middle-income countries. *The Palgrave Handbook of Critical Menstruation Studies*, 609-636.

Charan J., & Biswas T. (2013). How to calculate sample size for different study designs in medical research? *Indian Journal of Psychological Medicine*, 35(2), 121-126.

Coast E., Lattof R., Strong J. (2019). Puberty and menstruation knowledge among young adolescents in low-and middle-income countries: a scoping review. *International Journal of Public Health*, 64(2), 293-304

Crankshaw, T. L., Strauss, M., & Gumede, B. (2020). Menstrual health management and schooling experience amongst female learners in Gauteng, South Africa: a mixed method study. *Reproductive Health*, 17(1), 1-15.

Creswell W., & Clark P. (2017). *Designing and Conducting Mixed Methods Research:* Sage publications.

Dambhare G., Wagh V., Dudhe Y. (2012). Age at menarche and menstrual cycle pattern among school adolescent girls in Central India. *Global Journal of Health Science*, 4(1), 105.

Dasgupta A., Sarkar M. (2008). Menstrual hygiene: how hygienic is the adolescent girl?. *Indian Journal of Community Medicine: Official Publication of Indian Association of Preventive & Social Medicine*, 33(2), 77.

Delgado E., Serna C., Martínez I., Cruise E. (2022). Parental attachment and peer relationships in adolescence: A systematic review. *International Journal of Environmental Research and Public Health*, 19(3), 1064.

Deshmukh V., Sandhu K., Rachakonda L., Kakde, M., Andurkar S. (2019). Knowledge, attitudes and practices (KAP) regarding menstruation among girls in Aurangabad, India and their correlation with sociodemographic factors. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, 8(3), 980.

Deshpande N., Patil S., Gharai B., Patil S., Durgawale, P. (2018). Menstrual hygiene among adolescent girlsA study from urban slum area. *Journal of Family Medicine and Primary Care*, 7(6), 1439.

Dhingra R., Kumar A., Kour M. (2009). Knowledge and practices related to menstruation among tribal (Gujjar) adolescent girls. *Studies on Ethno-Medicine*, 3(1), 43-48.

Diaris M., Listyowati R., Januraga, P. (2017). Readiness of girls aged 10-12 years for an early menarche: a transtheoretical model of behavioural change analysis. *Public Health and Preventive Medicine Archive*, 5(1), 44-48.

Do Amaral E., Hardy E., Hebling M. (2011). Menarche among Brazilian women: Memories of experiences. *Midwifery*, 27(2), 203-208.

El Meselhy M., Salama A., El Mawardy R. (2020). Menstrual hygiene among secondary school students. *Menoufia Medical Journal*, 33(1), 24.

El Zobeidi R. (2014). *Knowledge, Attitudes, Practices and Perspectives about Hygiene at Governmental Preparatory Schools- Gaza Governorate*, MPH thesis, Al Quds University- Jerusalem.

Engelhard S. (2021). The mother-adolescent daughter relationship as embodied in joint dancing. *The Arts in Psychotherapy*, *72*, 101728.

Eswi A., Helal H., Elarousy W. (2012). Menstrual attitude and knowledge among Egyptian female adolescents. *Journal of American Science*, 8(6), 555-65.

Everet E., Marks D., & Clarke-Mitchell J. F. (2016). A qualitative study of the Black mother-daughter relationship: Lessons learned about self-esteem, coping, and resilience. *Journal of Black Studies*, 47(4), 334-350.

Fehintola F. O., Fehintola A. O., Aremu A. O., Idowu A., Ogunlaja O. A., Ogunlaja, I. P. (2017). Assessment of knowledge, attitude and practice about menstruation and menstrual hygiene among secondary high school girls in Ogbomoso, Oyo state, Nigeria. *International Journal of Reproduction, Contraception, Obstetrics and Gynecology*, *6*(5), 1726-1732.

Felleke A., Gerada A. (2020). Assessment of menstrual hygiene practice and associated factor among High school female students in Harar Eastern Ethiopia 2019. *MedRxiv*

Gedefaw G., Endalew F., Azmeraw B., Walelign B.,Shitie E. (2019). Knowledge, Attitude, Practice and its associated factors on menstrual hygiene among high school students of North Wollo Zone, Ethiopia, 2019: A cross-sectional study.

Ghandour R., Hammoudeh W., Giacaman, R., Holmboe-Ottesen G., Fjeld E. (2022). Coming of age: a qualitative study of adolescent girls' menstrual preparedness in Palestinian refugee camps in the West Bank and Jordan. *Sexual and Reproductive Health Matters*, 30(1), 2111793.

Goel P., Kumar R., Meena S., Garg S. (2018). Association of sociodemographic characteristics with KAP regarding menstrual hygiene among women in an urban area in Delhi. *Tropical Journal of Obstetrics and Gynaecology*, *35*(2), 158-164.

Gumanga K., Kwame-Aryee, A. (2012). Menstrual characteristics in some adolescent girls in Accra, Ghana. *Ghana Medical Journal*, 46(1).

Ha Tal A., & Alam M. (2022). Menstrual hygiene management practice among adolescent girls: an urban–rural comparative study in Rajshahi division, Bangladesh. *BMC Women's Health*, 22(1), 1-15.

Habtegiorgis Y., Sisay T., Kloos H., Malede A., Yalew M., Arefaynie M. Damtie Y., Kefale B., Birhane T., Addisu E., Lingerew M., Berhanu L., Berihun G., Natnael T., Abebe M., Feleke A., Gizeyatu A., Ademas A., Fentaw Z., Matebe T., Yayeh T., Dangura F., Adane M. (2021). Menstrual hygiene practices among high school girls in urban areas in Northeastern Ethiopia: A neglected issue in water, sanitation, and hygiene research. *PLoS One*, 16(6), e0248825.

Hassan S., Ghandour R., Bakri L., Shwiki S., Safi S., Abuzaid R., Zeidan H. (2023). Menstrual health and hygiene among young Palestinian female university students in the West Bank: a cross-sectional study. *BMJ Open*, 13(3), e069222.

https://www.pcbs.gov.ps/portals/_pcbs/PressRelease/Press_En_InterPopDay2022E.pdf Accessed 18 Feb 2023

Huitt W. (2011). A holistic view of education and schooling: Guiding students to develop capacities, acquire virtues, and provide service. Paper presented at the Revision of paper presented at the 12th Annual Conference sponsored by the Athens Institute for Education and Research (ATINER), Athens, Greece.

İşgüven P., Yörük G., Çizmecioğlu, M. (2015). Educational needs of adolescents regarding normal puberty and menstrual patterns. *Journal of Clinical Research in Pediatric Endocrinology*, 7(4), 312.

Jarrah S., Kamel A. (2012). Attitudes and practices of school-aged girls towards menstruation. *International Journal of Nursing Practice*, 18(3), 308-315.

Karout N. (2016). Knowledge and beliefs regarding menstruation among Saudi nursing students. *Journal of Nursing Education and Practice*, 6(1), 23.

Kaur R., Kaur K., & Kaur R. (2018). Menstrual Hygiene, Management, and Waste Disposal: Practices and Challenges Faced by Girls/Women of Developing Countries. *J Environ Public Health,* 2018, 1730964. doi:10.1155/2018/1730964.

Khana A., Goyal U., & Bhawsar C. (2015). Menstrual practices and reproductive problems: a study of adolescent girls in rajasthan. *Journal of Health Management*. 7:91–107.

Khanal, G., Shrestha, N., Adhikari, K., & Ghimire, U. (2022). Menstruation Hygiene Management among Secondary School Students of Chitwan, Nepal-Pre-Post Study Design.

Kitesa, B., Getahun, T., & Wako, K. (2016). Assessment of knowledge and practice of adolescent in-school girls towards menstrual hygiene management and determining factors in Lucy village of Ethiopian great Rift valley. *International Journal of Immunology, 4(6), 52-63.*

Kuhlmann, A. S., Henry, K., & Wall, L. L. (2017). Menstrual hygiene management in resource-poor countries. Obstetrical & gynecological survey, 72(6), 356.

Kumari V. (2022). Menstrual Hygiene Practices, Socio-cultural Restrictions and Taboos among Indian Society and their Impact on Women Life. *International Journal of Education and Management Studies*, 12(2), 146-149.

Kurnia D., Krisnana I., Zikriani, A. (2019). Relationship between Personality Type and Family Support with Genital Hygiene Behavior in Adolescent Girl. *Indian Journal of Public Health Research & Development,* 10(8).

Kwon S., Park, S. (2019). Adaptation to transition: Meaning of menarche for female adolescents in South Korea. *The Journal of Early Adolescence*, 39(4), 520-538.

Lincoln, Yvonna S. and Egon G. Guba (1985), Naturalistic Inquiry, Beverly Hills, CA: *Sage*

Liu L., Chen H. & Peng H. (2012). Cultural Practices Relating to Menarche and Menstruation among Adolescent Girls in Taiwan Qualitative Investigation. *Journal of Pediatric and Adolescent Gynecology,* 25(1), 43-47. https://doi.org/10.1016/j.jpag.-2011.08.006

Logeswari K., Parmar J., Suryawanshi M. (2021). Socio-cultural barriers for menstrual hygiene management among adolescent school girls of southern India. *International Journal of Community Medicine and Public Health*, 8(4), 1868.

Malhotra A., Goli S., Coates S., Mosquera-Vasquez M. (2016). Factors associated with knowledge, attitudes, and hygiene practices during menstruation among adolescent girls in Uttar Pradesh. Waterlines, 277-305.

Mamilla S., Goundla S. (2019). Knowledge about menstrual hygiene, sexual health, and contraception in educated late adolescent age girls. *Journal of Family Medicine and Primary Care,* 8(2), 610.

Mansoori N., Tanweer H., Ahmed I., Noor N., Mubeen M. (2020). Assessment of Menstrual Hygiene Practices Among Adolescent School Girls in Pakistan. *Annals of Jinnah Sindh Medical University*, 6(2), 44-49.

Marván L., Alcalá-Herrera V. (2014). Age at menarche, reactions to menarche and attitudes towards menstruation among Mexican adolescent girls. *Journal of Pediatric and Adolescent Gynecology*, 27(2), 61-66. https://doi. org/10.1016/j.jpag.2013.06.021

Michael J., Iqbal Q., Haider S., Khalid A., Haque, N., Ishaq, R., Saleem F., Hassali M., Bashaar, M. (2020). Knowledge and practice of adolescent females about menstruation and menstruation hygiene visiting a public healthcare institute of Quetta, Pakistan. *BMC Women's Health*, 20(1), 1-8.

Ministry of Education and Higher Education (2021): Statistical Reading of General Education Indicators.

Ministry of Health (2017) Primary Health Care in the Gaza Strip in the year 2016. Gaza: Palestinian Health Information System. Gaza: Ministry of Health.

Mohammed Gena H. (2020). Menstrual hygiene management practices and associated factors among secondary school girls in East Hararghe Zone, Eastern Ethiopia. *Advances in Public Health.*

Mohammed S., Larsen-Reindorf E., Awal I. (2020). Menstrual hygiene management and school absenteeism among adolescents in Ghana: results from a school-based cross-sectional study in a rural community. *International Journal of Reproductive Medicine.*

Mohammed S.,Larsen-Reindorf E. (2020). Menstrual knowledge, sociocultural restrictions, and barriers to menstrual hygiene management in Ghana: Evidence from a multi-method survey among adolescent schoolgirls and schoolboys. *Plos one*, 15(10), e0241106.

Mudi K., Pradhan R., Meher T. (2023). Menstrual health and hygiene among Juang women: a particularly vulnerable tribal group in Odisha, India. *Reproductive Health*, 20(1), 55.

Mukherjee A., Lama M., Khakurel U., Jha A., Ajose F., Acharya S.,Tymes-Willbekin K., Sommer M., Jolly P., Lhaki P., Shrestha, S. (2020). Perception and practices of menstruation restrictions among urban adolescent girls and women in Nepal: a cross-sectional survey. *Reproductive Health*, *17*, 1-10.

Nash K., O'Malley, G., Geoffroy E., Schell E., Bvumbwe A., Denno M. (2019). "Our girls need to see a path to the future"perspectives on sexual and reproductive health information among adolescent girls, guardians, and initiation counselors in Mulanje district, Malawi. *Reproductive Health*, 16(1), 1-13.

Nnennaya U., Atinge S., Dogara P., & Ubandoma J. (2021). Menstrual hygiene management among adolescent school girls in Taraba State, Nigeria. *African Health Sciences*, 21(2), 842-851.

Omran A., Al Hafez G. (2006) Health education for adolescent girls. WHO Regional Office for the Eastern Mediterranean. Available from: http://www.emro.who.int/dsaf/dsa722.pdf

Palestinian Central Bureau of Statistics (PCBS) (2021). Literacy Rate of Persons (15 Years and Over) in Palestine https:/ https://www.pcbs.gov.ps/Portals/Rainbow/Documents/Education-1994-2021-11E1.html Accessed 20 July 2022

Palestinian Central Bureau of Statistics (PCBS) (2021): Literacy Rate of Persons (15 Years and Over) in Gaza Strip https://www.pcbs.gov.ps/Portals/_Rainbow/Documents/Education-1994-2021-11E3.html Accessed Feb 2, 2023

Palestinian Central Bureau of Statistics (PCBS) (2022/1). On the 74th Annual Commemoration of the Palestinian Nakba https://www.pcbs.gov.ps/post.aspx?lang=en&ItemID=4236 Accessed Feb. 17, 2023

Palestinian Central Bureau of Statistics (PCBS) (2022/2). On The Occasion Of The International Population Day 11/7/2022

Palestinian Central Bureau of Statistics (PCBS) and the United Nations Population Fund (UNFPA) (2021) https://palestine.unfpa.org/en/news/pcbs-unfpa-joint-press-release-occasion-world-population-day

Parkavi, K. (2016). Media and Women Health in India. *International Journal of Research Granthaalayah*, 4 (4), 41-44

Parle J., Khatoon Z. (2019). Knowledge, attitude, practice and perception about menstruation and menstrual hygiene among adolescent school girls in rural areas of Raigad district. *International Journal of Community Medicine and Public Health*, 6(6), 2490-7.

Rahman S., Islam H., Rodrick S., Nusrat K. (2018). The Role of Media in Creating Social Awareness about the Female Hygiene Practices during Menstruation Cycle in Bangladesh. *IOSR Journal of Business and Management*, 20(5), 4-15.

Rana G., Jami H. (2018). Knowledge/awareness and practices related to menstruation among female students: Role of mother-daughter relationship. *Pakistan Journal of Psychological Research,* 313-334.

Sacca L., Maroun C., Khoury S., Maroun V., Khoury J., & Bouery P. (2023). Period poverty in Lebanon: a call for action. *Women's Reproductive Health,* 10(2), 236-251.

Samanta M., Sarkar S. (2022). Menstrual hygiene: Knowledge and practices among the Muslim rural adolescent girls of Paschim Medinipur, West Bengal, India.

Samantaray S., Mohapatra I., Vivekanand A. (2020). Awareness of menstrual hygiene: Assessment of knowledge and practice of menstrual hygiene among adolescent college going girls of Nagunoorkarimnagar.

Samuels F., Jones N., Abu Hamad B. (2017). Psychosocial support for adolescent girls in post-conflict settings: beyond a health systems approach. *Health Policy and Planning,* 32(suppl_5), v40-v51.

Sangra S., Choudhary N., Kouser W., Faizal I. (2019). Assessment of knowledge, attitude and practice about menstruation and menstrual hygiene among adolescent girls in rural area of district Kathua, Jammu and Kashmir. *International Journal of Community Medicine and Public Health,* 6, 5215-5218.

Santina T, Wehbe N, Ziade FM, Nehme M. (2013). Assessment of beliefs and practices relating to menstrual hygiene of adolescent girls in Lebanon. *International Journal of Health Science and Research.* 3(12): 75-88.

Santra S. (2017). Assessment of knowledge regarding menstruation and practices related to maintenance of menstrual hygiene among the women of reproductive age group in a slum of Kolkata, West Bengal, India. *International Journal Community Medicine and Public Health*; 4:708-12.

Schmitt L., Clatworthy D., Ratnayake R., Klaesener-Metzner N., Roesch E., Wheeler E., & Sommer M. (2017). Understanding the menstrual hygiene management challenges facing displaced girls and women: findings from qualitative assessments in Myanmar and Lebanon. *Conflict and Health*, 11(1), 1-11.

Setia S. (2016). Methodology series module 3: Cross-sectional studies. *Indian Journal of Dermatology*, 61(3), 261.

Shah V., Nabwera M., Sosseh F., Jallow, Y., Comma, E., Keita, O., & Torondel, B. (2019). A rite of passage: a mixed methodology study about knowledge, perceptions and practices of menstrual hygiene management in rural Gambia. *BMC Public Health*, 19(1), 1-15.

Shalabi-Abbas E., Dweikat S., Al Gazawy I., Draghmah S. (2018). Knowledge and self-care practices in adolescent girls living in Nablus district during menstruation: a cross-sectional study. *The Lancet*, 391, S10

Sharma N., Shekhawat R. (2019). Association of various socio demographic factors with knowledge and practice regarding menstrual hygiene among school going adolescent girls of Jaipur city.

Sharma N., Shekhawat R., Gaur K., Meena K., Meena L., Rathore M, Verma M., Raj D., Yadav R., Kewalramani, S. (2019). Assessment of knowledge and practice regarding menstrual hygiene among school going adolescent girls of Jaipur city. *Journal of Medical Science and Clinical Research*, 7(7), 2808-15.

Shoor, P. (2017). A study of knowledge, attitude, and practices of menstrual health among adolescent school girls in urban field practice area of medical college, Tumkur. *Indian Journal of Health Sciences and Biomedical Research KLEU*, 10(3), 249-255.

Shumie S., Mengie A. (2022). Menstrual hygiene management knowledge, practice and associated factors Among School Girls, Northeast Ethiopia. *PLoS One*, 17(7), e0271275.

Siabani S., Charehjow H., Babakhani M. (2018). Knowledge, attitudes and practices (KAP) regarding menstruation among school girls in west of Iran: a population based cross-sectional study. *International Journal of Pediatrics.*

Sivakami M., van Eijk, M., Thakur H., Kakade N., Patil C., Shinde S., Surani N., Bauman A., Zulaika G., Kabir Y., Dobhal A., Singh P., Tahiliani B., Mason L., Alexander K., Thakkar M., Laserson K., Phillips-Howard P. (2019). Effect of menstruation on girls and their schooling, and facilitators of menstrual hygiene management in schools: surveys in government schools in three states in India. *Journal of Global Health, 9*(1).

Sommer M. (2010). Where the education system and women's bodies collide: The social and health impact of girls' experiences of menstruation and schooling in Tanzania. *Journal of Adolescence*; 33(4):521-9.

Sonowal, P., Talukdar, K., Saikia, H. (2021). Sociodemographic factors and their association with menstrual hygiene practices among adolescent girls in Urban slums of Dibrugarh town, Assam. *Journal of Family Medicine and Primary Care*, 10(12), 4446.

Srivastava S, Chandra M. (2017): Study on the knowledge of school girls regarding menstrual and reproductive health and their perceptions about family life education program. *International Journal Reproduction, Contraception, Obstetrics and Gynecolgy*;6:688-93.

Sultan S., Sahu S. (2017). Knowledge, attitude and practices about menstruation and related problems in adolescent girls. *International Journal Reproduction Contraception Obstetrics and Gynecology*, 6(12), 5235-5240.

Sundler, Annelie J, Lindberg, Elisabeth, Nilsson, Christina, & Palmér, Lina. (2019). Qualitative thematic analysis based on descriptive phenomenology. *Nursing Open*, 6(3), 733-739.

Thakre B., Thakre S., Reddy M., Rathi N., Pathak K., Ughade S. (2011). Menstrual hygiene: knowledge and practice among adolescent school girls of Saoner, Nagpur district. *Journal of Clinical and Diagnostic Research*, *5*(5), 1027-33.

The Palestinian Adolescent Health Coalition (PCAH) (2020): An Advocacy Brief on Adolescents' Health & COVID-19 https://palestine.unfpa.org/sites/default/files/pub-pdf/adolescent.pdf Accessed 23 July 2022.

Tork M., Al hosis, F (2015). Effects of reproductive health education on knowledge and attitudes among female adolescents in Saudi Arabia. *Journal of Nursing Research*, *23*(3), 236-242.

Torondel B., Sinha S., Mohanty R., Swain T., Sahoo P., Panda B., Nayac A., Bara M., Bilung B., Cumming O., Panigrahi P., Das P., (2018). Association between unhygienic menstrual management practices and prevalence of lower reproductive tract infections: a hospital-based cross-sectional study in Odisha, India. *BMC Infectious Diseases*, 18(1), 1-12.

Triyanto E., Iskandar A. (2015). Family support needed for adolescent puberty. *International Journal of Nursing Education Scholarship*, *7*(1), 106.

United Nations International Children's Emergency Fund (UNICEF) (2016): Water, Sanitation and Hygiene in Schools https://www.unicef.org/timorleste/media/506/file/WinS_Guidelines_Final_English_version.pdf Accessed March 2, 2023

United Nations International Children's Emergency Fund (UNICEF) (2022): WASH in schools https://data.unicef.org/topic/water-and-sanitation/wash-in-schools/ Accessed March 2, 2023

United Nations Office for the Coordination of Humanitarian Affairs (OCHA) (2017): Humanitarian Facts and Figures: the occupied Palestinian territory.

United Nations Population Fund (UNFPA) (2013): Adolescent pregnancy https://esaro.unfpa.org/en/topics/adolescent-pregnancy Accessed March 2, 2023

United Nations Population Fund (UNFPA) (2020). Menstrual Hygiene Management in Emergencies. Retrieved from Cairo, Egypt: https://arabstates.unfpa.org/en/publications/unfpa-menstrual-hygiene-management-emergencies

United Nations Relief and Work Agency for Palestine Refugees in the near east (UNRWA)(2021): Where we work https://www.unrwa.org/where-we-work/gaza-strip#block-menu-block-10 Accessed 18 June 2022

Usman Adam M., Kpeebi Y., Usman Adam B., Adams A., Sahabi S. (2022). Beyond access to adequate WASH facilities: Menstrual hygiene practices of high school adolescent girls. *Journal of Adolescence.*

Vashisht A, Pathak R, Agarwalla R, Patavegar BN, Panda M. (2018). School absenteeism during menstruation amongst adolescent girls in Delhi, *Indian Journal of Family Community Medicine*.;25(3):163-8.

VG J., Rupashree R., Somasundaram T. (2021). Empirical Analysis on Knowledge, Attitudes and Practices (KAP): Puberty and Menstrual Hygiene. *Journal of International Women's Studies*, 22(6), 113-128.

Wasan Y., Baxter B., Rizvi A., Shaheen F., Junejo Q., Abro M., Hussain A, Ahmed I., Soofi S., Bhutta, Z. A. (2022). Practices and predictors of menstrual hygiene management

material use among adolescent and young women in rural Pakistan: A cross-sectional assessment. *Journal of Global Health, 12*.

World Bank (2018). Menstrual hygiene management enables women and girls to reach their full potential. https://www.worldbank.org/en/news/feature/2018/05/25/menstrual-hygiene-management Accessed February 6, 2023.

World Bank (2022): Menstrual health and hygiene. https://www.worldbank.org/en/topic/water/brief/menstrual-health-and-hygiene Accessed March 5, 2023

World Food Program (2021): Gaza Emergency Food Security Assessment Following the Escalation of Hostilities and Unrest in the State of Palestine

World Health Organization (WHO) (2022): Education and provisions for adequate menstrual hygiene management at school can prevent adverse health consequences. Accessed March 29 2023

Yadav N., Joshi S., Poudel R., Pandeya P. (2017). Knowledge, attitude, and practice on menstrual hygiene management among school adolescents. *Journal of Nepal Health Research Council*, 15(3), 212-216.

Yaliwal G., Biradar M., Kori S., Mudanur R., Pujeri U., Shannawaz M. (2020). Menstrual morbidities, menstrual hygiene, cultural practices during menstruation, and WASH practices at schools in adolescent girls of North Karnataka, India: a cross-sectional prospective study. *Obstetrics and Gynecology International Journal.*

Yasmin S., Manna N., Mallik S., Ahmed A., & Paria B. (2013). Menstrual hygiene among adolescent school students: An in-depth cross-sectional study in an urban community of West Bengal, India. *Journal of Dental and Medical Sciences*, 5(6), 22-6.

# Annexes

## Annex 1: Time table of research activities

| Activity | 2022 | | | | | | | | 2023 | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June |
| Proposal Approval & Helsinki | | | | | | | | | | | | | | |
| Development of instruments | | | | | | | | | | | | | | |
| Experts check for validity of instrumen ts | | | | | | | | | | | | | | |
| Pilot & update instrument | | | | | | | | | | | | | | |
| Data collection | | | | | | | | | | | | | | |
| Data entry | | | | | | | | | | | | | | |
| Data Analysis | | | | | | | | | | | | | | |
| Writing report | | | | | | | | | | | | | | |

**Annex 2: Helsinki committee approval**

المجلس الفلسطيني للبحث الصحي
Palestinian Health Research Council
تعزيز النظام الصحي الفلسطيني من خلال مأسسة استخدام المعلومات البحثية في صنع القرار
Developing the Palestinian health system through institutionalizing the use of information in decision making

## Helsinki Committee
For Ethical Approval

**Date:** 2022/06/06

**Number:** PHRC/HC/1129/22

الاسم:

**Name:** Maram Saeed Alshurafa

We would like to inform you that the committee had discussed the proposal of your study about:

نفيدكم علماً بان اللجنة قد ناقشت مقترح دراستكم حول:

**Knowledge, Attitudes and Practices Regarding Menstruaion among Adolescents, Female in the Gaza Strip**

The committee has decided to approve the above mentioned research. Approval number PHRC/HC/1129/22 in its meeting on 2022/06/06

وقد قررت الموافقة على البحث المذكور عاليه بالرقم والتاريخ المذكوران عاليه

**Signature**

**Member**

**Member**

**Chairman**

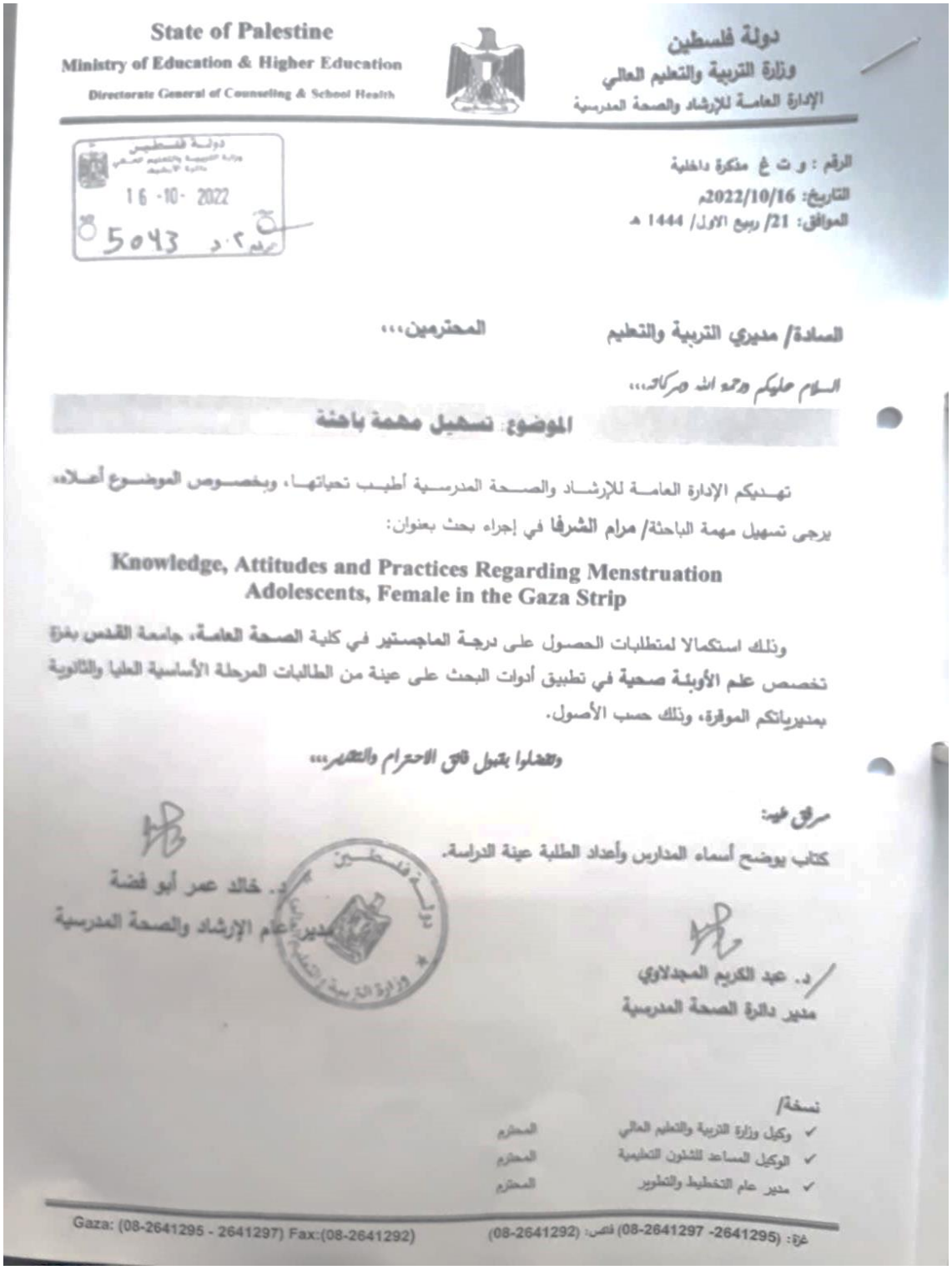
**Genral Conditions:-**

1. Valid for 2 years from the date of approval
2. It is necessary to notify the committee of any change in the approved study protocol.
3. The committee appreciates receiving a copy of your final research when completed

**Specific Conditions:-**

E-Mail:pal.phrc@gmail.com
Gaza - Palestine غزة - فلسطين
شارع النصر - مفترق العيون

**Annex (3): The MoEHE approval**



State of Palestine
Ministry of Education & Higher Education
Directorate General of Counseling & School Health

دولة فلسطين
وزارة التربية والتعليم العالي
الإدارة العامة للإرشاد والصحة المدرسية

دولة فلسطين
وزارة التربية والتعليم العالي
16 -10- 2022
5043

الرقم : و ت غ مذكرة داخلية
التاريخ: 2022/10/16م
الموافق: 21/ ربيع الاول/ 1444 هـ

السادة/ مديري التربية والتعليم المحترمين،،،

السلام عليكم ورحمة الله وبركاته،،،

الموضوع: تسهيل مهمة باحثة

تهديكم الإدارة العامة للإرشاد والصحة المدرسية أطيب تحياتها، وبخصوص الموضوع أعلاه،

يرجى تسهيل مهمة الباحثة/ مرام الشرفا في إجراء بحث بعنوان:

**Knowledge, Attitudes and Practices Regarding Menstruation Adolescents, Female in the Gaza Strip**

وذلك استكمالا لمتطلبات الحصول على درجة الماجستير في كلية الصحة العامة، جامعة القدس بغزة تخصص علم الأوبئة صحية في تطبيق أدوات البحث على عينة من الطالبات المرحلة الأساسية العليا والثانوية بمديرياتكم الموقرة، وذلك حسب الأصول.

وتفضلوا بقبول فائق الاحترام والتقدير،،،

مرفق طيه:
كتاب يوضح أسماء المدارس وأعداد الطلبة عينة الدراسة.

د. خالد عمر أبو فضة
مدير عام الإرشاد والصحة المدرسية

د. عبد الكريم المجدلاوي
مدير دائرة الصحة المدرسية

نسخة/
- ✓ وكيل وزارة التربية والتعليم العالي المحترم
- ✓ الوكيل المساعد للشئون التعليمية المحترم
- ✓ مدير عام التخطيط والتطوير المحترم

Gaza: (08-2641295 - 2641297) Fax:(08-2641292) غزة: (08-2641295 -2641297) فاكس: (08-2641292)

**Annex 4: Study sample calculation**

$$\text{Sample size} = \frac{Z(1-\alpha)/2^{\wedge}2}{P\,(1-P)\,d2}$$

Which:

Z1-α/2: is the standard normal variate at 5% type1 error (p> 0.05); it is 1.96

P: is the expected proportion in population-based on previous or pilot studies, but here as it is the first time to run this study, the researcher assures that 50% of the population has an adequate knowledge, attitude and practice about menstruation and MHM.

D: is the absolute error or precision (decided by the researcher); here it equals 0.05 Then,

$$\text{Sample size} = \frac{(1.96)2\times0.5(1-0.5)}{0.052} = 385$$

**Annex 5: Questionnaire**

## إقـرار موافقة

## (طالبات أقل من 16 سنة)

أنا الطالبة/ **مرام سعيد مصطفى الشرفا**، طالبة ماجستير في كلية الصحة العامة جامعة القدس/ مسار علم الأوبئة. أنا أعمل على أطروحة الماجستير الخاصة بي والتي تعد مطلبًا لإكمال برنامج الماجستير في الصحة العامة.

أجري بحثا علميا حول مدى معرفة طالبات المدارس بأمور الدورة الشهرية وكيفية التعامل معها. لذلك أطلب من سيادتكم الموافقة على مشاركة ابنتكم في هذا البحث. حيث أنني سأطلب منها تعبئة استبانة أسئلة حول هذا الموضوع وذلك خلال الدوام المدرسي لمرة واحدة. ولن يؤثر على حضورها للحصص المدرسية علما ان مشاركتها ستكون طوعية و بدون اظهار اسمها ولن يلحق بها أي أذى في حال رفضها للمشاركة أو انسحباها من وقت تعبئة الاستبانة.

ليس هناك أي مانع لاستقبال اي استفسار من حضرتكم وبامكانكم التواصل مع ادارة المدرسة بأي وقت.

اسم والد/ والدة الطالبة _____ التوقيع_____

اسم الباحثة_____ التوقيع_____

التاريخ_____

## اقرار موافقة

## (طالبات 16 سنة وأكثر)

أنا الباحثة/ **مرام سعيد مصطفى الشرفا** أجري بحثا علميا حول مدى معرفة طالبات المدارس بأمور الدورة الشهرية وكيفية التعامل معها. أطلب منك قراءة كل عبارة بعناية ثم قومي باختيار الاجابة التي ترتاحين اليها لذا أرجو الاجابة على جميع الأسئلة بمصداقية وعدم ترك أي منها دون الاجابة لتحقيق أهداف الدراسة.

علما أن مشاركتك طوعية و بدون اظهار اسمك ويحق لك رفض المشاركة أو الانسحاب في أي وقت.

اسم الباحثة_____ التوقيع_____

التاريخ_____

**الرقم التسلسلي : .....**

# استبانة لقياس المعرفة والاتجاه والممارسة بما يتعلق بالدورة الشهرية لدى الاناث اليافعات في قطاع غزة

| **البيانات الديموغرافية:** | | | | | |
|---|---|---|---|---|---|
| العمر | | | | | |
| الصف الدراسي | | | | | |
| اسم المدرسة | | | | | |
| منطقة السكن | شمال غزة | غزة | الوسطى | خان يونس | رفح |
| حالة الوالدين | متزوجون | مطلقون | أحدهم متوفي | | |
| مستوى تعليم الأم | أقل من الثانوية | شهادة ثانوية | شهادة جامعة | ماجستير أو دكتوراه | |
| مستوى تعليم الأب | أقل من الثانوية | شهادة ثانوية | شهادة جامعة | ماجستير أو دكتوراه | |
| عدد أخواتك البنات الأكبر منك | | | | | |
| حالة الأسرة الاقتصادية | لا يتم تلبية حاجات الأسرة دائما | | | | |
| | يتم تلبية حاجات الأسرة أحيانا | | | | |
| | يتم تلبية حاجات الأسرة ورفاهيتها دائما | | | | |
| نوع الأسرة | بسيطة | | ممتدة | | |

| مصدر معرفتي عن الدورة الشهرية (يمكنك اختيار أكتر من اجابة) | الأم | الأب | الأخوات | الأصدقاء | المدرسة | الانترنت |
|---|---|---|---|---|---|---|
| العمر عند حدوث أول دورة شهرية | | | | | | |
| شعوري عند حدوث أول دورة شهرية | الخوف | الصدمة | الخجل | عدم راحة | راحة | |

| **المعرفة حول الدورة الشهرية:** | | **نعم** | **لا** | **لا أعرف** |
|---|---|---|---|---|
| .1 | كنت أعرف بالدورة الشهرية قبل حدوثها | | | |
| .2 | العمر الطبيعي لحدوث الدورة الشهرية أن تكون الفتاة أقل من 16سنة | | | |
| .3 | تحدث الدورة الشهرية بسبب تغيرات هرمونية في الجسم | | | |

| | | | | |
|---|---|---|---|---|
| .4 | مصدر دم الدورة الشهرية هو الرحم | | | |
| .5 | المدة الطبيعية لنزول دم الدورة الشهرية من 2 الى 7 ايام | | | |
| .6 | المدة الطبيعية بين كل دورة شهرية وأخرى هو من 28 الى 31 يوم | | | |
| .7 | تنقطع الدورة الشهرية عن المرأة خلال فترة الحمل | | | |
| .8 | الاستحمام في أول يوم بالدورة الشهرية جيد ولايضر بالصحة | | | |
| .9 | يجب الابتعاد عن الأنشطة الرياضية أثناء الدورة الشهرية | | | |

| **المعرفة حول النظافة الشخصية خلال الدورة الشهرية:** | | **نعم** | **لا** | **لا أعرف** |
|---|---|---|---|---|
| .1 | النظافة خلال الدورة الشهرية تعني ان تكون منطقة الأعضاء التناسلية نظيفة وأستعمل الفوط الصحية واتخلص منها بطريقة صحيحة | | | |
| .2 | المحافظة على النظافة خلال الدورة الشهرية تحمي من العدوى وتجنب الرائحة الكريهة | | | |
| .3 | الاستحمام خلال الدورة الشهرية مضر بالصحة | | | |
| .4 | أفضل وسيلة لامتصاص دم الدورة هي الفوط الصحية التي لا يعاد استخدامها ويمكن التخلص منها | | | |
| .5 | يجب غسل المنطقة التناسلية بالماء في كل مرة يتم تغيير الفوطة فيها | | | |
| .6 | يجب تغيير الفوطة الصحية بحد اقل ثلاث مرات أو أكثر خلال اليوم | | | |

| **التوجه حول الدورة الشهرية** | | **موافق بشدة** | **موافق** | **محايد** | **غير موافق** | **غير موافق بشدة** |
|---|---|---|---|---|---|---|
| .1 | تعتبر الدورة الشهرية أمر مزعج | | | | | |
| .2 | أرى أن الشعور بالتعب أثناء الدورة هو مجرد عذر | | | | | |
| .3 | ان الدورة الشهرية تعتبر حالة من القذارة | | | | | |
| .4 | ليس مقبولا ان نتحدث عن الدورة مع الصديقات | | | | | |
| .5 | عند شراء الفوط الصحية يجب ان لا يكون رجال في المكان احد | | | | | |
| .6 | أمر محرج أن يعرف رجل في البيت ( أخ/ أب...) بدورتي الشهرية | | | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| .7 | خلال الدورة الشهرية يجب تجنب بعض الأطعمة | | | | | |
| .8 | خلال الدورة الشهرية يجب تجنب بعض الأنشطة الرياضية | | | | | |
| .9 | خلال الدورة الشهرية، تكون الفتاة غير نظيفة | | | | | |
| .10 | خلال الدورة الشهرية، الذهاب للمدرسة غير ضروري | | | | | |

| **التوجه حول النظافة الشخصية خلال الدورة الشهرية** | | **موافق بشدة** | **موافق** | **محايد** | **غير موافق** | **غير موافق بشدة** |
|---|---|---|---|---|---|---|
| .1 | أثناء الدورة الشهرية يفضل تنشيف منطقة الأعضاء التناسلية بمنشفة بعد الاستحمام أو التبول | | | | | |
| .2 | أعتقد أن غسل الأيدي بعد شطف منطقة الأعضاء التناسلية يحمي من الأمراض | | | | | |
| .3 | أعتقد أن غسل الملابس الداخلية بالماء فقط يعتبر كافي لإزالة بقع الدم | | | | | |
| .4 | أعتقد أن تنشيف الملابس الداخلية بعد غسلها داخل الغرفة يعتبر كافي | | | | | |
| .5 | يفضل وضع الفوط المستعملة داخل كيس بلاستيكي وربطه قبل التخلص منها | | | | | |

| **ممارسة النظافة الشخصية خلال الدورة الشهرية:** | | | | | |
|---|---|---|---|---|---|
| .1 | أي من الوسائل التالية تقومين باستخدامها خلال الدورة الشهرية لامتصاص دم الحيض | أ. فوطة صحية | ب. قطعة قماش جديدة | ج. أحيانا فوطة صحية وأحيانا قماش جديد | د. قطعة قماش قديمة |

| | | | | |
|---|---|---|---|---|
| اذا كنت تستعملين قطعة قماش لاكثر من مرة لامتصاص دم الحيض أجيبي عن الأسئلة في الصندوق | | | | |
| | هل تغسلين القماش قبل اعادة استخدامه؟<br>أ. نعم<br>ب. لا<br>اذا كنت تغسلين القماش، ما هي المواد التي تستعملينها للغسل؟<br>أ. الماء والصابون<br>ب. الماء فقط<br>ج. صابون ومطهر<br>ما هو المكان الذي تستخدميه لتنشيف القماش المغسول<br>أ. مكان مفتوح ومشمس<br>ب. مكان مغلق ومظلم<br>ما هو المكان الذي تستخدمية لتخزين القماش المغسول؟<br>أ. مع ملابس أخرى داخل الحمام<br>ب. أماكن مخفية داخل غرفة النوم | | | |
| .2 | عدد المرات التي تقومين بتغيير الفوطة فيها خلال اليوم: | أ. ثلاث مرات أو أكثر في اليوم | | ب. أقل من ثلاث مرات في اليوم |
| .3 | هل تقومين بغسل اعضائك التناسلية أثناء الدورة الشهرية | أ. نعم | | ب. لا |
| .4 | عدد المرات التي تقومين بها بغسل اعضائك التناسلية: | أ. أربع مرات او أكثر في اليوم | | ب. أقل من أربع مرات في اليوم |
| .5 | ما هي المواد التي تستخدمينها في غسل الاعضاء التناسلية خلال الدورة الشهرية؟ | أ. الماء والصابون | ب. الماء فقط | ج. صابون مائي ومطهر |
| .6 | هل تقومين بالاستحمام أثناء الحيض؟ | أ. نعم | | ب. لا |
| .7 | اذا كانت الاجابه نعم فما هو عدد المرات التي تقومي بها بالاستحمام أثناء الحيض: | أ. على الأقل مرة واحدة في اليوم | | ب. الاستحمام غير المنتظم أو أقل من مرة في اليوم |
| .8 | أقوم بالتخلص من الفوط بعد استعمالها عن طريق | ب. أضعها في سلة المهملات | | ج. أضعها في كرسي الحمام ثم أصب الماء عليها |

| الوصول الى الفوط الصحية | | | | | |
|---|---|---|---|---|---|
| .1 | تتوفر الفوط الصحية في منطقة سكني بشكل دائم | أ. نعم | ب. لا | ج. لا أعرف | |
| .2 | على ماذا يعتمد اختيارك لنوع وسيلة امتصاص دم الدورة الشهرية | أ. مدى الراحة التي تشعرك بها | ب. حسب سعرها | ج. حسب متوفرة أم لا | د. حسب أمنة أم لا |
| .3 | هل قمت بشراء الفوط الصحية خلال الشهرين السابقين؟ | نعم | | لا | |

| أسباب تمنعك من استعمال الفوط الصحية | | نعم | لا |
|---|---|---|---|
| .1 | يرفض والديّ شراء الفوط الصحية | | |
| .2 | اشعر بالخجل عند شراء الفوط الصحية لان البائع غالبا يكون رجل | | |
| .3 | اشعر بالخجل عند شراء الفوط الصحية في وجود رجال اخرين غير البائع | | |
| .4 | الفوط الصحية غالية الثمن | | |
| .5 | المكان الذي يتوفر فيه الفوط بعيد ولا أستطيع الوصول اليه | | |
| .6 | الفوط الصحية تسبب حساسية بالجلد | | |
| .7 | اشعر بالراحة عند استعمال قطع القماش | | |

| أي من الممارسات التالية تقومين بها خلال الدورة الشهرية | | نعم | لا |
|---|---|---|---|
| .1 | الاستحمام خلال اول أيام الدورة | | |
| .2 | تمشيط شعرك خلال الدورة الشهرية | | |
| .3 | قص اظافرك خلال الدورة الشهرية | | |
| .4 | اخبار الصديقات بمواعيد دورتك | | |
| .5 | شرب المشروبات الدافئة | | |
| .6 | دخول المطبخ اثناء الدورة الشهرية | | |
| .7 | الخروج من المنزل والزيارات خلال الدورة الشهرية | | |
| .8 | تغسل ملابسك بشكل منفصل عن ملابس باقي افراد المنزل | | |

| | كيف يتعامل والديك معك خلال الدورة الشهرية؟ | نعم | لا |
|---|---|---|---|
| .1 | يقوم والديً بتوفير الفوط الصحية بشكل دائم | | |
| .2 | يتم توفير الصابون للتنظيف بشكل دائم | | |
| .3 | تقديم مسكنات الألم او المشروبات الدافئة | | |
| .4 | يتفهمون التقلبات المزاجية والنفسية | | |
| .5 | .يعطوك الأولوية لاستعمال الحمام | | |
| .6 | يسمحون لك بالنوم والراحة عندما تريدين | | |

| | التثقيف الصحي حول الدورة الشهرية | نعم | لا |
|---|---|---|---|
| .1 | هل تلقيت اي دروس حول المفاهيم العلمية للدورة الشهرية | | |
| .2 | هل تلقيت أي دروس علمية في المدرسة حول أسس النظافة الشخصية خلال الدورة الشهرية | | |
| .3 | هل تلقيت اي معلومات علمية حول العلامات الجسدية التي تسبق حدوث الدورة الشهرية | | |
| .4 | هل تلقيت دروسا في المدرسة حول اضرار عدم الالتزام بالنظافة الشخصية خلال الدورة الشهرية | | |
| .5 | هل تلقيت اي معلومات حول اضرار استعمال وسائل أخرى لامتصاص الدم بدل من الفوط الصحية | | |

| | المرافق الصحية في المدرسة | نعم | لا | لا أعرف |
|---|---|---|---|---|
| .1 | يوجد حمامات في المدرسة | | | |
| .2 | حمام المدرسة فيه أبواب للاغلاق | | | |
| .3 | حمام المدرسة نظيف | | | |
| .4 | يوجد سلة مهملات في الحمام | | | |
| .5 | يوجد مغسلة لغسل اليدين | | | |
| .6 | الماء موجود باستمرار داخل الحمام | | | |
| .7 | الصابون موجود باستمرار في الحمام | | | |
| .8 | مناديل الحمام موجودة باستمرار | | | |
| .9 | استطيع الذهاب للحمام بسهولة | | | |
| .10 | يوجد وقت كافي في الاستراحة لدخول الحمام | | | |
| .11 | يوجد في المدرسة فوط صحية في حال جائت الدورة لفتاة بشكل مفاجئ | | | |
| .12 | يسمح لك بمغادرة الصف في حال نزف الدورة كثيرا | | | |
| .13 | عدد الحمامات مناسب لعدد الطالبات | | | |

**Annex 6: Focus group discussion questions**

(Introduce your-self and your Research activities)

| Date …….. Place ……. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Age | | | | | | | | | |
| Female sibling | | | | | | | | | |
| Parent marital status | | | | | | | | | |
| Mother education | | | | | | | | | |
| Father education | | | | | | | | | |
| Family economic status | | | | | | | | | |
| Family type | | | | | | | | | |

**المعرفة و التوجهات:**

1) ماذا تعرفين عن الدورة الشهرية ؟
2) لماذا تحدث الدورة الشهرية؟ وضحي ذلك اكثر
3) اوصفي لي كيف كانت اول دورة شهرية لك؟ كيف شعرتي؟
4) اوصفي لي التغيير في حياتك بعد الدورة؟ وضحي ذلك / مارايك في هذا التغيير
5) من وجهة نظرك ماهي العوامل التي كانت تمنع من معرفتك عن الدورة الشهريه؟
6) كيف تشعرين خلال فترة الحيض؟
7) كيف ترين أهمية دور الاهل نحو توعيتك بالدورة الشهرية و الحوار بين الوالدين عن هذه المواضيع؟ أي الأدوار اهم برايك؟
8) كيف تشعرين لو اضطررت لشراء الفوط الصحية بنفسك؟ لماذ؟ وضحي ذلك

**الممارسات:**

1) كيف تتصرفين خلال الدورة من ناحية الالتزام بتعليمات النظافة الشخصية؟( مرات التغيير/ رمي الفوطة/ من يقوم بتوفير الفوط./ الاستحمام/ تمشيط الشعر.....
2) لماذا لا تلتزمين دائما بالنظافة الشخصية خلال الدورة؟ ما هي الموانع
3) ماهي الثقافات و المعتقدات السائدة بين المجمتع حول مفهوم النظافة للدورة الشهرية ؟ ماهو اثر هذه الثقافات او الموروثات الثقافية علي ممارساتك؟
4) ما هي الممارسات التي تفضلينها خلال الدورة؟ لماذا/ طعام او شراب معين/ النوم/ جلوس بمكان معين
5) كيف كانت تجربتك عند طلب خدمة صحية او علاج او استشارة من مختص؟
6) ما هي القيود التي تواجهينها أثناء الدورة الشهرية؟ الأطعمة / المشروبات/ ملابس معينة / الاستحمام / الحضور إلى المدرسة.

**توجهاتك نحو الخدمات الصحية و التعليمية في المدرسة:**

1) احكي لي عن الدروس التثقيفية التي تلقيتها في المدرسة عن النظافة الشخصية خلال الدورة؟ما رايك فيها / مدى كفايتها
2) ما هي الصعوبات التي تواجهينها لممارسة النظافة في المدرسة؟
3) احكي لي عن تجربتك خلال الدوام المدرسي لحدوث الدورة بغير موعدها او نزف؟ كيف شعرت
4) احكي لي عن تجربتك في اللجوء الى الخدمات الصحية في المدرسة فيما يتعلق بالدورة الشهرية/
   ماهو رأيك في الخدمات الصحية المتوفرة في المدرسة
5) كيف تنظرين الى دور المدرسة و المعلمين في زيادة معرفتك نحو الدورة الشهرية؟ ما رأيك فيه

**Annex 7: Cronbach's Alpha value**

**Reliability for each domain of the questionnaire**

| No. | Domains | No. of item | Cronbach's Alpha |
|---|---|---|---|
| D1 | Knowledge Regarding Menstruation | 9 | 0.755 |
| D2 | Knowledge Regarding MHM | 6 | 0.730 |
| D3 | Attitude Regarding Menstruation | 10 | 0.802 |
| D4 | Attitude Towards MHM | 5 | 0.820 |
| D5 | Practice Towards MHM | 8 | 0.959 |
| D6 | Sociocultural Practices | 8 | 0.923 |
| D7 | Family's Role Regarding MHM | 6 | 0.745 |
| D8 | Comprehensive Menstruation Education | 5 | 0.733 |
| D9 | School facilities | 13 | 0.916 |
| **Total** | | 70 | 0.820 |

## Annex 8: Correlation coefficient

## Correlation coefficient of every question related to the total score of domains

| Items | Statistical test | | Items | Statistical test | | Items | Statistical test | | Items | Statistical test | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | r | P-value | | r | P-value | | r | P-value | | r | P-value |
| **D1: Knowledge Regarding Menstruation** | | | **D2: Knowledge Regarding MHM** | | | **D3: Attitude Regarding Menstruation** | | | **D4: Attitude Towards MHM** | | |
| Q1.1 | 0.538 | 0.002* | Q2.1 | 0.580 | 0.001* | Q3.1 | 0.691 | 0.000* | Q4.1 | 0.488 | 0.006* |
| Q1.2 | 0.517 | 0.003* | Q2.2 | 0.735 | 0.000* | Q3.2 | 0.732 | 0.000* | Q4.2 | 0.698 | 0.000* |
| Q1.3 | 0.553 | 0.002* | Q2.3 | 0.692 | 0.000* | Q3.3 | 0.768 | 0.000* | Q4.3 | 0.859 | 0.000* |
| Q1.4 | 0.547 | 0.002* | Q2.4 | 0.625 | 0.000* | Q3.4 | 0.647 | 0.000* | Q4.4 | 0.774 | 0.000* |
| Q1.5 | 0.475 | 0.008* | Q2.5 | 0.625 | 0.000* | Q3.5 | 0.560 | 0.001* | Q4.5 | 0.744 | 0.000* |
| Q1.6 | 0.575 | 0.00*1 | Q2.6 | 0.735 | 0.000* | Q3.6 | 0.636 | 0.000* | | | |
| Q1.7 | 0.604 | 0.000* | | | | Q3.7 | 0.442 | 0.014* | | | |
| Q1.8 | 0.598 | 0.000* | | | | Q3.8 | 0.518 | 0.003* | | | |
| Q1.9 | 0.544 | 0.002 | | | | Q3.9 | 0.466 | 0.010* | | | |
| | | | | | | Q.10 | 0.427 | 0.019* | | | |
| **D5: Practice Towards MHM** | | | **D6: Sociocultural Practices** | | | **D7: Family's Role Regarding MHM** | | | **D8: Comprehensive Menstruation Education** | | |
| Q5.1 | 0.923 | 0.000* | Q6.1 | 0.568 | 0.001* | Q7.1 | 0.753 | 0.000* | Q8.1 | 0.555 | 0.001* |
| Q5.2 | 0.625 | 0.000* | Q6.2 | 0.506 | 0.004* | Q7.2 | 0.766 | 0.000* | Q8.2 | 0.678 | 0.000* |
| Q5.3 | 0.970 | 0.000* | Q6.3 | 0.587 | 0.001* | Q7.3 | 0.587 | 0.001* | Q8.3 | 0.802 | 0.000* |
| Q5.4 | 0.882 | 0.000* | Q6.4 | 0.555 | 0.001* | Q7.4 | 0.495 | 0.005* | Q8.4 | 0.684 | 0.000* |
| Q5.5 | 0.790 | 0.000* | Q6.5 | 0.469 | 0.009* | Q7.5 | 0.652 | 0.000* | Q8.5 | 0.761 | 0.000* |
| Q5.6 | 0.923 | 0.000* | Q6.6 | 0.527 | 0.003* | Q7.6 | 0.634 | 0.000* | | | |
| Q5.7 | 0.697 | 0.000* | Q6.7 | 0.560 | 0.001* | | | | | | |
| Q5.8 | 0.838 | 0.000* | Q6.8 | 0.583 | 0.001* | | | | | | |
| **D10: School facilities** | | | **Total** | | | | | | | | |
| Q9.1 | 0.765 | 0.000* | D1 | 0.901 | 0.000* | | | | | | |
| Q9.2 | 0.670 | 0.000* | D2 | 0.809 | 0.000* | | | | | | |
| Q9.3 | 0.772 | 0.000* | D3 | 0.718 | 0.000* | | | | | | |
| Q9.4 | 0.694 | 0.000* | D4 | 0.693 | 0.000* | | | | | | |
| Q9.5 | 0.781 | 0.000* | D5 | 0.953 | 0.000* | | | | | | |
| Q9.6 | 0.804 | 0.000* | D6 | 0.899 | 0.000* | | | | | | |
| Q9.7 | 0.713 | 0.000* | D7 | 0.565 | 0.001* | | | | | | |
| Q9.8 | 0.536 | 0.002* | D8 | 0.369 | 0.045* | | | | | | |
| Q9.9 | 0.812 | 0.000* | D9 | 0.383 | 0.037* | | | | | | |
| Q9.10 | 0.807 | 0.000* | | | | | | | | | |
| Q9.11 | 0.779 | 0.000* | | | | | | | | | |
| Q9.12 | 0.485 | 0.007* | | | | | | | | | |
| Q9.13 | 0.388 | 0.034* | | | | | | | | | |

Significant at P≤0.001; *Significant at P≤ 0.05; P>0 05: Not significant; & **r:** Pearson correlation.

**Annex 9: List of arbitrators**

| Name | Title |
|---|---|
| Dr. Abdelkareem Majdlawi | School Health/ MoEHE |
| Dr. Areefa Al Bahri | PhD in MCH |
| Dr. Ayman Alsous | PhD in Health policy/ MOH |
| Eman Al Shawish | PhD in MCH/ Al Najah University |
| Ms. Itimad Abuward | MPH/ Palestinian National Institute of Public Health |
| Ms. Mariam Shaqura | MPH/ Women Health |
| Mariam Mohamed Ebrahim | PhD in Reproductive Health/ UAE |
| Ms. Nidal Abu Hamad | MSc in Reproductive Health |
| Riham Khresheh | PhD in MCH/ Mu'tah University |

**Annex 10: Content validity**

| | محاور الاستبانة | Rater 1 | Rater 2 | Rater 3 | Rater 4 | Rater 5 | Rater 6 | Rater 7 | Rater 8 | Rater 9 | I-CVI | pc | k | Evaluation |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | مصدر معرفتي عن الدورة الشهرية (يمكنك اختيار أكتر من إجابة) أ. الأم ب. الأب ت. الأخوات ث. الأصدقاء ج.المدرسة ح. الإنترنت | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 1 | 0.002 | 1.00 | Excellent |
| | العمر عند حدوث أول دورة شهرية | 3 | 4 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 0.78 | 0.070 | 0.76 | Excellent |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | شعوري عند حدوث أول دورة شهرية أ. الخوف ب. الصدم ة ت. الخجل ث. عدم راحة ج. راحة | 4 | 4 | 4 | 2 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 0.89 | 0.014 | 0.89 | Excellent |
| | **المعرفة حول الدورة الشهرية ( نعم , لا , لا أعرف)** | | | | | | | | | | | | | | | | | | |
| 1. | كنت اعرف بالدورة الشهرية قبل حدوثها | 4 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 1.00 | 0.002 | 1 | Excellent |
| 2. | العمر الطبيعي لحدوث الدورة الشهرية ان تكون اقل من 16 سنه | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 3 | 1.00 | 0.002 | 1 | Excellent |
| 3. | تحدث الدورة الشهرية نتيجة تغيرات فيسيولوجية في الجسم | 3 | 4 | 3 | 3 | 4 | 4 | 3 | 3 | 3 | 2 | 3 | 3 | 4 | 3 | 0.89 | 0.014 | 0.89 | Excellent |
| 4. | مصدر دم الدورة الشهرية هو الرحم | 4 | 4 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 1.00 | 0.002 | 1 | Excellent |
| 5. | المدة الطبيعية | 3 | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 4 | 4 | 4 | 4 | 3 | 1.00 | 0.002 | 1 | Excellent |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | لنزول الدورة الشهرية من 2 الى 7 ايام | | | | | | | | | | | | | | |
| 6. | المدة الطبيعية بين كل دورة شهرية وأخرى هو من 28 الى 31 يوم | 4 | 4 | 4 | 3 | 4 | 3 | 3 | 3 | 4 | 3 | 4 | 4 | 1.00 | Excellent |
| 7. | تنقطع الدورة الشهرية عن المرأة خلال فتره الحمل | 4 | 4 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 1.00 | Excellent |
| 8. | الاستحمام في أول ايام الدورة الشهرية جيد ولا يضر بالصحة | 3 | 4 | 1 | 4 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 0.78 | 0.070 | 0.76 | Excellent |
| 9. | يجب الابتعاد عن الأنشطة الرياضية أثناء الدورة الشهرية | 4 | 4 | 3 | 3 | 2 | 4 | 4 | 2 | 4 | 3 | 4 | 0.78 | 0.070 | 0.76 | Excellent |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **المعرفة بين الفتيات حول النظافة الشخصية خلال فتره الحيض: ( نعم , لا , لا أعرف)** | | | | | | | | | | | | | | | |
| 1. | النظافة خلال الدورة الشهرية تعني ان تكون منطقة المهبل نظيفة و استعمل الفوط الصحية و اتخلص منها بطريقة صحيحة | 3 | 4 | 4 | 2 | 2 | 3 | 3 | 3 | 3 | 4 | 4 | 3 | 0.78 | 0.070 | 0.76 | Excellent |
| 2. | المحافظة على النظافة خلال الدورة الشهرية تحمي من العدوى وتجنب الرائحة الكريهة | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| 3. | الاستحمام خلال الدورة الشهرية مضر بالضحة | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| 4. | افضل وسيلة لامتصاص دم الدورة هي الفوط الصحية التي لا يعاد استخدامها و يمكن أتخلص منها | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| 5. | يجب غسل المنطقة التناسلية بالماء في كل مرة يتم تغيير الفوطة فيها | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |

| | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6. | يجب تغيير الفوطة الصحية اكثر من بحد اقل ثلاث مرات يوميا | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 3 | 4 | 3 | 1 | 0.002 | 1.00 | Excellent |
| | **المحور الثاني: التوجه بين الفتيات نحو الدورة الشهرية (موافق بشدة/ موافق/ غير موافق/ غير موافق بشدة)** | | | | | | | | | | | | | | | | | | | |
| 1. | تعتبر الدورة الشهرية أمر مزعج | 3 | 4 | 3 | 2 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 3 | 4 | 3 | 1 | 0.002 | 1.00 | Excellent |
| 2. | الشعور بالتعب أثناء الدورة هو مجرد عذر | 4 | 4 | 3 | 4 | 2 | 3 | 3 | 3 | 4 | 4 | 3 | 3 | 4 | 0.89 | 0.014 | 0.89 | 0.89 | Excellent |
| 3. | ان الدورة الشهريه تعتبر حالة من القذارة | 4 | 4 | 3 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 3 | 3 | 3 | 1 | 0.002 | 1.00 | 1.00 | Excellent |
| 4. | ليس مقبولا ان نتحدث عن الدورة مع الصديقات | 4 | 4 | 4 | 4 | 2 | 3 | 3 | 3 | 4 | 4 | 3 | 3 | 3 | 0.89 | 0.014 | 0.89 | 0.89 | Excellent |
| 5. | عند شراء الفوط الصحية يجب ان لا يكون رجال في المكان | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 1 | 0.002 | 1 | 1.00 | Excellent |
| 6. | أمر محرج أن يعرف رجل في البيت (أب / أخ/....) بدورتي الشهرية | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 1 | 0.002 | 1 | 1.00 | Excellent |
| 7. | خلال الدورة الشهرية يجب تجنب بعض الأطعمة | 3 | 4 | 4 | 4 | 2 | 3 | 3 | 3 | 4 | 4 | 4 | 3 | 4 | 0.89 | 0.014 | 0.89 | 0.89 | Excellent |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| .8 | خلال الدورة الشهرية،يجب تجنب بعض الأنشطة الرياضية | 3 | 4 | 4 | 3 | 4 | 2 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 0.89 | Excellent |
| .9 | خلال الدورة الشهرية تكون الفتاة غير نظيفة | 3 | 4 | 4 | 4 | 4 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 0.89 | Excellent |
| 10 | خلال الدورة الشهرية، الذهاب للمدرسة غير ضروري | *3* | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 1.00 | Excellent |
| **التوجهات بين الفتيات حول النظافة الشخصية خلال فترة الحيض:(موافق بشدة/ موافق/ غير موافق/ غير موافق بشدة)** | | | | | | | | | | | | | | | | |
| **.1** | أثناء الدورة الشهرية يفضل تنشيف منطقة الأعضاء التناسلية بمنشفة بعد الاستحمام او التبول | *3* | 4 | 4 | *4* | 4 | 4 | 2 | 3 | 3 | 3 | 4 | 3 | 4 | 0.89 | Excellent |
| **.2** | غسل الأيدي بعد شطف منطقة أعضاء التناسلية يحمي من الامراض | *3* | 4 | 4 | *4* | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 1.00 | Excellent |
| **.3** | غسل الملابس الداخلية بالماء فقط يعتبر كافي لإزالة بقع الدم | *3* | 4 | 4 | *4* | 4 | 2 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 0.89 | Excellent |
| **.4** | تنشيف الملابس الداخلية بعد غسيلها داخل الغرفة يعتبر كافي | *3* | 4 | 4 | *4* | 4 | 2 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 0.89 | Excellent |
| **.5** | يجب ربط الفوط المستعملة داخل | *3* | 4 | 4 | *4* | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 1.00 | Excellent |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | كيس بلاستيكي قبل التخلص منها | | | | | | | | | | | | | | |
| **ممارسة النظافة الشخصية خلال فترة الدورة الشهرية** | | | | | | | | | | | | | | | |
| 1. | أي من الوسائل التالية تقومين باستخدامها خلال فترة الدورة الشهرية لامتصاص دم الحيض:<br>أ. فوطة صحية<br>ب. قطعة قماش جديدة<br>ج. استخدام الفوط الصحية والقماش الجديد بالتبادل<br>د. قماش قديم | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 1 | Excellent |
| | 1.1 اذا كنت تستخدمين قماش, هل تقومين بغسل القماش قبل إعادة استخدامه<br>أ. نعم<br>ب.لا | 3 | 4 | 4 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 0.89 | 0.89 | Excellent |
| | 1.2 اي من المنظفات التالية تستخديمنها لغسيل الملابس قبل إعادة استخدامها<br>أ. الماء والصابون<br>ب. صابون ومطهر<br>ج. ماء | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 1.00 | 0.002 | Excellent |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1.3 مكان تجفيف القماش المغسول: أ. مكان مفتوح ومشمس ب. مكان مغلق ومظلم | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| | 1.4 مكان تخزين الملابس المجففة قبل إعادة استخدامها: أ. مع ملابس أخرى داخل الحمام ب. أماكن مخفية داخل غرفة النوم | 3 | 4 | 4 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 0.89 | 0.014 | 0.89 | Excellent |
| 2. | عدد مرات تغيير الفوط الصحية في اليوم: أ. ثلاث مرات أو أكثر في اليوم ب. أقل من ثلاث مرات في اليوم | *3* | 4 | *3* | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| 3. | هل تقومين بغسل اعضائك التناسلية أثناء الحيض: أ. نعم ب. لا | *3* | 4 | *3* | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| 4. | ما هو عدد المرات التي تقومين بها بغسل اعضائك التناسلية أثناء الحيض: أ. أربع مرات أو أكثر في اليوم ب. أقل من أربع مرات في اليوم | *3* | 4 | *3* | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5. | المواد المستخدمة في غسل الأعضاء التناسلية أثناء الحيض: أ. الماء والصابون ، ب. صابون مائي ومطهر ت. ماء فقط | *3* | 4 | *3* | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 1 | 0.002 | 1.00 | Excellent |
| 6. | هل تقومين بالاستحمام أثناء الحيض: أ. نعم ب.لا | *3* | 4 | *4* | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 1 | 0.002 | 1.00 | Excellent |
| 7. | 7 .اذا كانت الاجابة نعم فما هو عدد المرات التي تقومي بها بالاستحمام أثناء الحيض: أ. على الأقل مرة واحدة في اليوم ب. الاستحمام غير المنتظم أو أقل من مرة في اليوم | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 1 | 0.002 | 1.00 | Excellent |
| 8. | اقوم بالتخلص من افوط الصحية بعد استعمالها عن طريق: أ. اضعها في سلة مهملات ب. اضعها في المرحاض ثم اقوم بصب الماء عليها | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 3 | 1 | 0.002 | 1.00 | Excellent |

| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **الوصول الى الفوط الصحية** | | | | | | | | | | | | | | | | | | |
| 1. | ما هو العامل الذي يؤثر على اختيارك لنوعية للمواد الماصة:<br>أ. الراحة<br>ب. الامان<br>ت. التكلفة<br>ث. التوفر | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| 2. | تتوفر الفوط الصحية في منطقتي بشكل دائم:<br>أ. نعم<br>ب. لا<br>ت. لا اعرف | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| 3. | قمت بشراء فوطة صحية خلال الشهرين الماضين:<br>أ. نعم<br>ب. لأ | 3 | 4 | 3 | 4 | 2 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 0.89 | 0.014 | 0.89 | Excellent |
| **معيقات الاستمرارية في استخدام الفوط الصحية ذات الاستخدام الواحد (نعم/لا):** | | | | | | | | | | | | | | | | | | |
| .1 | يرفض والدي شراء الفوط الصحية | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| .2 | أشعر بالخجل عند شراء الفوط الصحية من السوبرماركت في لان البائع غالبا يكون رجل | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| .3 | الشعور بالخجل من شراء الفوط الصحية في وجود | 3 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |

| | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | رجل / رجال غير صاحب المحل | | | | | | | | | | | | | | | |
| .4 | الفوط الصحية غالية الثمن | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 3 | 0.002 | 1.00 | Excellent |
| .5 | المكان الذي يتوفر فيه الفوط الصحية بعيد و لا استطيع الوصول اليه | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 3 | 0.002 | 1.00 | Excellent |
| .6 | الفوط الصحية تسبب حساسية بالجلد | 3 | 3 | 2 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 0.014 | 0.89 | Excellent |
| .7 | اشعر بالراحة عند استخدام الاقمشه | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 4 | 4 | 3 | 0.014 | 0.89 | Excellent |
| **الممارسات خلال الدورة الشهرية (نعم / لا)** | | | | | | | | | | | | | | | | | |
| .1 | الاستحمام خلال اول أيام الدورة | 3 | 4 | 4 | 3 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 3 | 0.002 | 1.00 | Excellent |
| .2 | تمشيط الشعر | 3 | 2 | 3 | 1 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 0.070 | 0.76 | Excellent |
| .3 | قص الأظافر | 3 | 2 | 3 | 4 | 4 | 1 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 0.070 | 0.76 | Excellent |
| .4 | شرب المشروبات الدافئة | 3 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 4 | 0.002 | 1.00 | Excellent |
| .5 | اخبار الصديقات بمواعيد الدورة | 3 | 1 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 3 | 0.014 | 0.89 | Excellent |
| .6 | دخول المطبخ | 3 | 1 | 4 | 3 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 3 | 0.014 | 0.89 | Excellent |
| .7 | الخروج والزيارات | 3 | 2 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 3 | 0.014 | 0.89 | Excellent |
| .8 | تغسل ملابسي بشكل منفصل عن ملابس باقي افراد المنزل | 3 | 2 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 3 | 0.014 | 0.89 | Excellent |
| **تعامل الأهل خلال الدورة الشهرية (نعم/لا):** | | | | | | | | | | | | | | | | | |
| **.1** | يعمل والدي على توفير الفوط الصحية دائما | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 3 | 0.002 | 1.00 | Excellent |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **2.** | يتم توفير الصابون للتنظيف بشكل دائما | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 3 | 4 | Excellent |
| **3.** | تقديم مسكنات الألم او المشروبات الدافئة | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 1 | Excellent |
| **4.** | يتفهمون التقلبات المزاجية والنفسية | 2 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 3 | 0.89 | Excellent |
| **5.** | يعطوك الأولوية لاستعمال الحمام | 2 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 0.89 | Excellent |
| **6.** | يسمحون لك بالنوم والراحة عندما تريدين | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 1 | Excellent |
| **التثقيف الصحي حول الدورة الشهرية (نعم/لا):** | | | | | | | | | | | | | | | |
| **1.** | هل تلقيتي اي دروس علمية حول المفاهيم العلمية للدورة الشهرية | *3* | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 1 | Excellent |
| **2.** | هل تلقيتي معلومات علمية حول العلامات الجسدية التي تسبق حدوث الدورة الشهرية | *3* | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 0.89 | Excellent |
| **3.** | هل تلقيتي اي معلومات أو دروس من خلال المدرسة حول مبادئ وأسس النظافة الشخصية خلال الدورة الشهريه. | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 1 | Excellent |
| **4.** | هل تلقيتي اي معلومات او دروس حلو اضرار عد | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 4 | 4 | 1 | Excellent |

| | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | الالتزام بمفاهيم النظافة خلال الدورة الشهرية | | | | | | | | | | | | | | | | |
| **5.** | هل تلقيتي اي معلومامت حول اضرار استخدام وسائل اخرى بدلا من الفوط الصحية. | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 0.002 | 1.00 | Excellent |
| **كيف تقيمين المرافق الصحية المتوفرة في المدرسة من منظورك (نعم/لا):** | | | | | | | | | | | | | | | | | |
| **1.** | يتوفر في المدرسة حمامات | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 0.002 | 1.00 | Excellent |
| **2.** | حمام المدرسة فيه أبواب يمكن اغلاقها | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 1 | 0.002 | 1.00 | Excellent |
| **3.** | حمام المدرسة نظيف | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 1 | 0.002 | 1.00 | Excellent |
| **4.** | يوجد سلة مهملات في الحمام | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| **5.** | يوجد مغسلة لغسل اليدين | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 4 | 1 | 0.002 | 1.00 | Excellent |
| **6.** | الماء موجود باستمرار داخل الحمام | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 1 | 0.002 | 1.00 | Excellent |
| **7.** | الصابون موجود باستمرار في الحمام | 4 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 4 | 3 | 1 | 0.002 | 1.00 | Excellent |
| **8.** | مناديل الحمام موجودة باستمرار | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 2 | 4 | 0.89 | 0.014 | 0.89 | Excellent |
| **9.** | استطيع الذهاب للحمام بسهولة | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 0.89 | 0.014 | 0.89 | Excellent |
| **10** | يوجد وقت كافي في الاستراحة لدخول الحمام | 3 | 4 | 4 | 4 | 4 | 3 | 3 | 3 | 3 | 3 | 3 | 4 | 1 | 0.002 | 1.00 | Excellent |

| | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **11** | يتوفر في المدرسة فوط صحية في حال جاءت الدورة الشهرية لفتاة بشكل مفاجئ | 4 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 1 | 0.002 | 1.00 | Excellent |
| **12** | يسمح لك بمغادرة الصف في حال نزف الدورة كثيرا | 3 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 1 | 0.002 | 1.00 | Excellent |
| **13** | عدد الحمامات في المدرسة مناسب لعدد الطالبات | 3 | 4 | 3 | 4 | 4 | 3 | 3 | 3 | 3 | 4 | 3 | 4 | 1 | 0.002 | 1.00 | Excellent |

**دراسة بعنوان: المعرفة التوجه والممارسة حول الدورة الشهرية لدى المراهقات في قطاع غزة**

**إعداد الباحثة: مرام سعيد مصطفى الشرفا**

**إشراف: د. سها بعلوشة**

**الملخص:**

الدورة الشهرية ظاهرة فسيولوجية تبدأ عند الإناث في سن المراهقة. ومع ذلك ، فهو معلم هام في حياتهن، لا تملك المراهقات المعرفة الكافية عن العيوب والممارسات الصحية التي يجب اتباعها أثناء الدورة الشهرية والتي قد تؤدي في بعض الأحيان إلى نتائج سلبية. هدفت هذه الدراسة إلى استكشاف المستوى الحالي للمعرفة، التوجهات وممارسات النظافة أثناء الدورة الشهرية. استخدمت هذه الدراسة نهج المنهج المختلط لفهم الظواهر قيد البحث ، وذلك باستخدام مزيج بين الكمي (الاستبيان المقابَل) والنموذج النوعي (المناقشة الجماعية المركزة مع طالبات المدارس). تم تطبيق الدراسة على 397 طالبة تتراوح أعمارهن بين 12 و 17 سنة تم اختيارهن باستخدام أسلوب أخذ العينات متعدد المراحل من المدارس الحكومية الإعدادية والثانوية الموجودة في قطاع غزة. تألفت البيانات من معرفتهم بالدورة الشهرية والنظافة خلالها، وتوجهاتهم، وممارسات النظافة أثناء الدورة الشهرية، والبيئة المنزلية والمدرسية. تم تحليل البيانات الكمية باستخدام SPSS بينما كانت البيانات النوعية باستخدام MAXQUDA. كان متوسط عمر المشاركين وعمر البلوغ (14.9 ± 1.55 سنة) و (13.11 ± 1.17 سنة) على التوالي. قبل الدورة الشهرية (59.7٪) من الفتيات كانوا على دراية بالدورة الشهرية وكانت الأم المصدر الرئيسي للمعلومات (79.1٪) لدى معظم المشاركات في الدراسة. لم تكن أكثر من ثلث الفتيات في الدراسة على دراية بمصدر النزيف. فقط (37٪) من المشاركات لديهن معرفة جيدة بالحيض بينما قلة قليلة (4.3٪) لديهن توجه جيد وحوالي نصف المشاركين (53.4٪) يبدون ممارسات جيدة لنظافة الدورة الشهرية. استخدمت غالبية المشاركات الفوط الصحية (98.5٪) ، و (85.9٪) أثناء الدورة الشهرية، علاوة على ذلك، أفادوا بأن مراحيض المدرسة ليست نظيفة مع قلة موارد مثل الصابون وورق الحمام. الفتيات الأكبر من 14 عامًا يتمتعن بمعرفة كافية مقارنة بالفتيات في سن 14 عامًا. الفتيات اللواتي يعشن في مدينة غزة لديهن معرفة وسلوك أفضل من الفتيات في خان يونس ورفح على التوالي. أظهرت النتائج أن الفتيات في الصف الحادي عشر لديهن ممارسات صحية أفضل أثناء الحيض من الفتيات في الصف العاشر. أبرزت نتائج الدراسة حاجة المراهقات إلى الحصول على معلومات دقيقة وكافية عن الدورة الشهرية. وبالتالي ، هناك حاجة إلى برنامج تدخل وطني لزيادة الوعي حول الدورة الشهرية بين الفتيات المراهقات وخاصة اللواتي يعشن في جنوب قطاع غزة.