Dysmenorrhea is pain associated with menstruation. It’s often an issue discussed in privacy yet continues to affect girls and women with great impact on their education, social activities and work. Objective: To assess the factors that influence prevalence of dysmenorrhea among university students and factors associated with it in Salam University in Mogadishu Capital city of Somalia. The study area was Salam University. A cross sectional study was used to collect data on prevalence of dysmenorrhea among university students and factors associated with it. A self-administered questionnaire non-probability sampling, especially, the purposive sampling method was utilized to for semi-structured questionnaire and interview (N=190). SPSS V.16 was used for data analysis. The prevalence of dysmenorrhea was 72.0%. Conclusion: The prevalence of dysmenorrhea was high which was influenced mainly by the number of children, no family history of dysmenorrhea and daily consumption of sugary foods. The high prevalence of dysmenorrhea among students requires health education about it, its causes, management, schools to stock analgesics in the school clinics and further research on its effect on academic life of the students.

**KEYWORDS**
Dysmenorrhea, Menstruation, Female, Prevalence, Salam, Mogadishu, Somalia, University

**1. INTRODUCTION**

Menstrual period is a natural phenomenon which occurs throughout the reproductive years of every woman. Most females experience certain degree of pain and distress during their menstruation period (Kaur et al., 2015). Dysmenorrhea is defined as painful menstruation that experienced as uterine pain or cramps in the lower abdomen, occurring just before and/or during menstruation, with variations among different females (Tangchia et al., 2004; Kiran et al., 2012). Dysmenorrhea is the most common gynecological disorder in women of reproductive age the term dysmenorrhea is derived from the Greek words Dys (difficult, painful or abnormal), meno (month) and rrhea (flow) (Adeyemi and Adekanle, 2007). It is defined as painful menses in women usually beginning during adolescence. It is characterized by campy pelvic pain beginning shortly before or at the onset of menses and lasting 1 to 3 days. Duration of the pain is usually 8 to 72 hours and is usually associated with menstruation.

Identification of dysmenorrhea and associated features like vomiting, giddiness, mood changes was done around middle of 19th century (Andersch, 1982). Dysmenorrhea is a painful/ cramping sensation in the lower abdomen often accompanied by other biological symptoms including dizziness, fatigue, sweating, backache, headache, nausea, vomiting, and diarrhea all occurring just before or during the menstruation. Dysmenorrhea may be categorized into two types as primary and secondary. Primary dysmenorrhea is defined as painful menses among females with normal pelvic anatomy, frequently beginning during adolescence. It is observed only in ovulatory cycles, frequently emerging within 6 to 12 months after menarche with no pathology or organic basis. Secondary dysmenorrhea is a menstrual pain associated with underlying pathology and its onset might be years after menarche (Sharma et al., 2014).

Due to its importance, different treatments including pharmacological and non-pharmaceutical treatment approaches such as taking non-steroidal anti-inflammatory drugs (NSAIDS), herbal, dietary therapies, yoga, meditation, and acupuncture have been used to lessen the effects of dysmenorrhea (Mahvash et al., 2012). In Somalia, menstruation is an issue that is discussed in privacy and should not be talked about in public posing a challenge for girls to manage their periods while at school (Nazi, 2014). Eleven percent of the total learning days of school are missed by girls in rural areas because of menstruation and 74% of the girls in a baseline survey in Kasese district believed that pain accompanying a period was a sign of illness (Tiklayo et al., 2009; Latthe et al., 2006). Many girls therefore choose to stay at home during their menstruation which affects their education (Latthe et al., 2006). Despite the above, menstruation disorders are issues that have been under researched in Africa as a whole.

**2. PROBLEM STATEMENT**

Students who suffer from severe dysmenorrhea report missing school so as to rest during the pain and if present in class, they are not concentrating but sleeping in class, moving in and out of class so as to gain relief.
Dysmenorrhea has been reported to affect the girls’ school activities, social life and performance (Shabnam et al., 2016). Dysmenorrhea is a cause of frequent short-term work and school absenteeism in women of reproductive age. Approximately 0-15% of females experience monthly menstrual pain. Severe enough to stop normal daily functions at work, home, or school. Even though primary dysmenorrhea is not a real threat of life but can affect the quality of females’ life and in case of severity it might lead to disability and inefficiency. Moreover, dysmenorrhea can cause mental problems in some of the females resulting in their loneliness and reduced participation in different social activities. In adolescents, moderate to severe pain that affects lifestyle and does not respond to pharmacological treatment requires professional attention and appropriate diagnosis of possible underlying pelvic disease. The exact prevalence of dysmenorrhea is difficult to determine because of variety of diagnostic criteria and the subjective feature of the symptoms. In many countries, primary dysmenorrhea is the principal cause of recurrent short-term work and school absenteeism in young girls and women (Nidhi et al., 2014). This study is aimed to find out the prevalence of dysmenorrhea among female students attending Salam University and factors associated with it.

3. METHODOLOGY

The design of the study was cross-sectional study. Self-administered questionnaire (N=190) and interview was taken the data by using semi-structured questionnaire. The questionnaire was prepared in English and translated to Somali language to ensure clarity.

4. RESULT

Age of the respondents: Mean age of the respondent was 20.83±2.08 marital status most respondents were single 73% (138), while minority were married 27 % (52). Among the respondents 75% (142) had not yet given birth to a child, while 17% (33) had <4 and 8% (15) had >4. Employment among the respondents, 31% (59) of the respondents was employed, and 69% (131) of the respondents were unemployed. Religion the respondents were Muslims 100% (190) because Somali people are hundred percent Sunni Muslims.

### Table 1: Socio-demographic Characteristics

| Variable               | Category | Frequency | Percent |
|------------------------|----------|-----------|---------|
| Mean Age of the respondents | 20.83±2.08 | 100%      |         |
| Marital status         | Single   | 138       | 73      |
|                        | Married  | 52        | 27      |
|                        | Total    | 190       | 100     |
| Number of children     | None     | 142       | 75      |
|                        | >4       | 15        | 8       |
|                        | Total    | 190       | 100     |
| Employment status      | Employed | 59        | 31      |
|                        | Unemployed | 131     | 69      |
|                        | Total    | 190       | 100     |
| Religion               | Islam    | 190       | 100     |
|                        | Total    | 190       | 100     |

Among the respondents 15% had experience their first menstrual period at age of 13, 31% of the respondents experience at age of 14, while 55% of the respondents experience at age of 15 and 1% of the respondents had experienced their first menstrual period at age of 16. Majority of the respondents 83% said yes that they experience their periods every month while 17% of the respondents said no that they don’t experience their periods every month. Among the respondents who had 1-2 days menstrual period in month were 8%, those who had 3-4 days were 33%, and those who had 5-6 days were 33%, 26% were those who had >7 days. Cycle of the menstruation period, majority of the respondents 83% had regular cycle and only 17% of the respondents had irregular cycle. Cycle duration 33% of the respondents had <21 days, while 53% of the respondents had 21 days up to 35 days and 14% had >35 days. Bleeding time: participants who had bleeding <3 days were 14%, while those who had bleeding 3 days up to 5 days were 51% and those who had >5 days were 35%. Among the respondents who their studies affected by dysmenorrhea were 64%, and those who their studies didn’t affect by Dysmenorrhea were 36%. Participants who miss class due to pain were 45%, and those who didn’t miss class due to pain were 55%.

### Table 2: Personal factors influencing the prevalence of Dysmenorrhea

| Variable                                  |Category   | Frequency | Percent |
|-------------------------------------------|-----------|-----------|---------|
| Age of experience at your first menstrual period | 13        | 30        | 15      |
|                                           | 14        | 58        | 31      |
|                                           | 15        | 100       | 53      |
|                                           | 16        | 2         | 1       |
|                                           | Total     | 190       | 100%    |
| Do you experience your periods every month? | Yes       | 157       | 83      |
|                                           | No        | 33        | 17      |
|                                           | Total     | 190       | 100%    |
| How long is your monthly menstrual period? | 1-2 days  | 15        | 8       |
|                                           | 3-4 days  | 62        | 33      |
|                                           | 5-6 days  | 63        | 33      |
|                                           | >7 days   | 50        | 26      |
|                                           | Total     | 190       | 100%    |
| Cycle                                     | Regular   | 158       | 83      |
|                                           | Irregular | 32        | 17      |
|                                           | Total     | 190       | 100%    |
| Cycle duration                            | <21days   | 64        | 33      |
|                                           | 21 days-35 days | 100  | 53      |
|                                           | >35 days  | 26        | 14      |
|                                           | Total     | 190       | 100%    |
| Bleeding time                             | <3 days   | 26        | 14      |
|                                           | 3days-5days | 98     | 51      |
|                                           | >5days    | 66        | 35      |
|                                           | Total     | 190       | 100%    |
| Do your studies get affected by dysmenorrhea? | Yes      | 121       | 64      |
|                                           | No        | 69        | 36      |
|                                           | Total     | 190       | 100%    |
| Do you miss class due to pain?            | Yes       | 86        | 45      |
|                                           | No        | 104       | 55      |
|                                           | Total     | 190       | 100%    |

Among the respondents 72% of the respondents said that they experience dysmenorrhea duration their period while 28% of the respondents said that they don’t have pain during their period. 37% of the respondents said that they experience pain before menstruation, 24% during the period and 11% after the menstruation. Symptoms of dysmenorrhea among the respondents 18% had headache, 10% had nausea, only 8% of the respondents had vomiting and 36% of the respondents had depression. 45% of the respondents feel pain lower abdomen, while 19% feel pain lower back and 8% of the respondents feel pain at different locations. 25% of the respondents use pain killers, 17% took a rest, only 6% take mineral while 16% warn the abdomen with a hot water and 8% had not use anything.

### Table 3: Prevalence of Dysmenorrhea

| Variable                                  |Category   | Frequency | Percentage |
|-------------------------------------------|-----------|-----------|------------|
| Do you experience pain during your periods? | Yes       | 137       | 72         |
|                                           | No        | 53        | 28         |
|                                           | Total     | 190       | 100%       |
| When do you experience pain              |Before the menstruation | 70     | 37         |
|                                          |During the period   | 45       | 24         |
|                                          |After the menstruation | 22     | 11         |
|                                          |Total        | 137       | 72         |
| Symptoms of dysmenorrhea                 |Depression   | 68        | 36         |
|                                          |Vomiting     | 15        | 8          |
|                                          |Nausea       | 20        | 10         |
|                                          |Headache     | 34        | 18         |
|                                          |Total        | 137       | 72         |
| Pain location                             |lower abdomen   | 90       | 45         |
|                                          |lower back    | 35        | 19         |
|                                          |pain at different locations | 12     | 8          |
|                                          |Total         | 137       | 72         |
| What do you use to relieve it             |Use pain killers | 47     | 25         |
|                                          |Rest         | 32        | 17         |
|                                          |Take mineral  | 12        | 6          |
|                                          |Warm the abdomen with hot water | 30   | 16         |
|                                          |None         | 16        | 8          |
|                                          |Total         | 137       | 72         |

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Among all life style factors, participants those who consume alcohol were 22% and those who did not consume alcohol were 78%. 61% of the respondents had services of alcohol 1-2 per week, 24% had 3-4 per week and 15% had services of alcohol >5 per week. 57% of the respondents consumed coffee while 43% did not consume coffee. And those who consume coffee 83% took 1-3 cups of coffee per day, 14% took 4-6 cups of coffee per day only 3% of the respondents took >7 cups of coffee per day. 51% of the respondents were obese, while 49 were normal. Participants who didn’t smoke cigarettes or shisha were 100%, there is no any participant who smoke cigarettes or shisha. Among the respondents who said we make exercise were 46%, while 54% of the respondents didn’t make exercise regularly.

| Table 4: life style factors associated with the prevalence of Dysmenorrhea. |
|----------------|----------------|----------------|
| Variable  | Category | Frequency | Percent |
|-----------|----------|-----------|---------|
| Do you drink alcohol? | Yes | 41 | 22 |
|            | No | 149 | 78 |
|  Total | 190 | 150 |
| How many services of alcohol do you have per week? | 1-2 | 25 | 61 |
|            | 3-4 | 10 | 24 |
|            | >5  | 6  | 15  |
| Total | 41 | 22 |
| Do you drink coffee? | Yes | 108 | 57 |
|            | No | 82 | 43 |
| Total | 190 | 100 |
| If you, how many cups of coffee do you take per day? | 1-3 | 90 | 83 |
|            | 4-6 | 15 | 14 |
|            | >7  | 3  | 3  |
| Total | 108 | 57 |
| Are you obese? | Yes | 96 | 51 |
|            | No | 94 | 49 |
| Are you smoke cigarettes or shisha? | Yes | 25 | 13 |
|            | No | 165 | 87 |
| Total | 190 | 100% |
| Do you exercise regularly? | Yes | 88 | 46 |
|            | No | 102 | 54 |
| Total | 190 | 100% |

5. Discussion

We found 72.0% of students suffering from dysmenorrhea in Salaam University. Our observation is consistent with previous studies reporting dysmenorrhea occurrence between 45 and 85% from India and other countries. It is evident from results that nearly 70% of dysmenorrhea females experienced moderate to severe dysmenorrhea. While comparing prevalence of dysmenorrhea from other countries, Ethiopia reported 70% dysmenorrhea wherein 28.5% had moderate to severe. Malaysia reported an incidence of 6.8% having moderate to severe pain and Jordan reported 53.8% of the subjects had moderate to severe pain. One of the reasons for such vast differences could be due to the scales used for assessment. We found approximately 50% of dysmenorrhea girls remained absent from school or colleges.

In several studies of young women, rates of absenteeism ranged from 24 to 50%. We found approximately 45% of dysmenorrhea girls remained absent from schools or colleges. In several studies of young women, rates of absenteeism ranged from 24 to 50%. Studies have demonstrated that menstrual pain restricts the movement and usual activity pattern of the females. It could also be argued that the perception of uneasiness and discomfort experienced during menstruation probably limits the movements more than the experience of pain. Studies in Uganda found that the average age at menarche for the respondents was 13.83 years (SD = 1.498, ranging from 9 to 19 years) with most 83.2% (292) girls’ age at menarche falling in between 12-15 years. While the present study showed among the respondents 16% had experience their first menstrual period at age of 13, 31% of the respondents experience at age of 14, while 53% of the respondents experience at age of 15 and 1% of the respondents had experienced their first menstrual period at age of 16.

A study in Uganda showed that majority 92.6% (325) of the respondents experienced their periods per month, 58.4% (205) had a relative with dysmenorrhea, 6.15% (127) of the respondents citing a sister as the person experiencing dysmenorrhea. More than half 241 (66.7%) experienced work or institutional related stress, of which 66.4 % (160) reported moderate level of stress (Sundell et al, 1990). While in my research indicates that majority of the respondents 83% said yes that they experience their periods every month, 71% had a relative with dysmenorrhea And 31% of the respondents was no any participant who smoke cigarettes or shisha. Among the respondents who said we make exercise were 46%, while 54% of the respondents didn’t make exercise regularly.

In current study shows the respondents who had 1-2 days menstrual period in month were 8%, those who had 3-4 days were 33%, and those who had 5-6 days were 33%, 26% were those who had >7 days. Our study showed among all life style factors, participants those who consume alcohol were 22% and those who did not consume alcohol were 78%. 61% of the respondents had services of alcohol 1-2 per week, 24% had 3-4 per week and 15% had services of alcohol >5 per week. And those who consume coffee 83% took 1-3 cups of coffee per day, 14% took 4-6 cups of coffee per day only 3% of the respondents took >7 cups of coffee per day. 51% of the respondents were obese, while 49 were normal.

6. Conclusion

Prevalence of the dysmenorrhea is high in our study population. So, from the study it can be concluded that dysmenorrhea is a very common problem among girls. Such high prevalence makes dysmenorrhea a significant public health problem among young students that demands some attention from policy makers. Girls almost always, silently suffer the pain by dysmenorrhea and the discomfort associated with it due to lack of knowledge about reproductive health. It is probable that this also affects their academic performance. The findings of this study thus indicate the enormity of the problem and the need for appropriate intervention through a change in lifestyle.

RECOMMENDATION

➢ Young female undergraduates should be taught premenstrual signs and how to adequately prepare themselves for menstruation to minimize the effect of menstrual disorders through informative, educative and communication (IEC) materials such as handbills which should be included as part of the package for the orientation programme for new undergraduates.

➢ Enlightenment programmes should be organized periodically by the school health nurses on the various management strategies for menstrual disorders and how to use them effectively.

➢ Adequate counseling should be provided by the school nurses to students who experience dysmenorrhea during consultation in the school clinic to avoid or reduce the rate of school absenteeism among them.

➢ Encourage female students to seek prompt medical attention to rule out or treat any underlying problem that may be responsible for dysmenorrhea or that can interfere with the reproductive health of the Female Students in later years.
➢ Nurses as health educators should consistently provide information on the benefits of non-pharmacological self-help measures through the use of appropriate teaching aids such as postals, handbills and personal contact with these students during clinic consultation for management of other health problems.

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