

## Original Research Article

# The impact of dysmenorrhea on quality of life among health care nursing staff in Abha maternity and children hospital in the year 2022

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## ABSTRACT

**Background:** Dysmenorrhea is a common health problem among women of childbearing age. It is given low priority in most parts of the world, including Saudi Arabia. Therefore, attention is needed for better prevention and management practices, and thus to improve the quality of life. This study aims to explore the impact of dysmenorrhea on the quality of life among nursing staff in Abha Maternity and Children Hospital.

**Methods:** Cross-sectional study that included 209 nurses who are in childbearing age. The questionnaire contained information about sociodemographic factors, menstrual characteristics, presence or absence of dysmenorrhea, presence or absence of other menstruation-related symptoms, and questions to assess the impact of dysmenorrhea on their quality of life.

**Results:** 79.9% of the participants reported having moderate to severe dysmenorrhea. Regarding the other menstruation-related symptoms, more than 90% of the participants reported having abdominal pain or discomfort (95.2%), fluctuation of mood (95.2%), anger (93.3%), back pain (91.9%), and fatigue (90.9%). In addition, significant associations were found between dysmenorrhea and the following quality of life variables: wanting to cry and to be alone during menstruation; menstrual problems that affects relationship with friends, performance at work, and daily activities.

**Conclusions:** The prevalence of dysmenorrhea is high among the nursing staff in Abha Maternity and Children Hospital. Its impact on quality of life is pronounced especially on the attendance and performance at work. Adverse health problems of menstrual disturbances represent a significant occupational health challenge among the nursing profession in Saudi Arabia.

**Keywords:** Dysmenorrhea, Nurse, Quality, Life

## INTRODUCTION

Dysmenorrhea is term of Greek origin which means painful monthly bleeding.<sup>1</sup> Traditionally dysmenorrhea has been classified into primary and secondary dysmenorrhea. Primary dysmenorrhea characteristically starts when adolescents commence their ovulatory cycles and is not associated with other diseases or pathological

conditions.<sup>2</sup> In contrast, secondary dysmenorrhea usually starts later on the reproductive life and is associated with other pathology inside the pelvis.<sup>3</sup> Prostaglandin F (PGF) is thought to be the main contributor to the pathogenesis of dysmenorrhea.<sup>4,5</sup> The time of the endometrial shedding after the start of menstruation is when the endometrial cells release PGF which subsequently causes vigorous uterine contractions.<sup>6</sup> On the other hand, secondary dysmenorrhea presentation is a clinical situation where menstrual pain

can be due to an underlying pathological condition, or structural abnormality either within or outside the uterine cavity.<sup>7</sup> Non-steroidal anti-inflammatory drugs (NSAIDs) are the main pharmacological therapy of choice for patients with primary dysmenorrhea.<sup>8</sup> However, most patients with primary dysmenorrhea usually do not seek medical attention, or that of other health professionals. Instead, they self-prescribe or seek alternative management options. The continued use of such self-medicines without a valid medical prescription or, at the very least, a professional assessment, can also result in secondary adverse effects.<sup>9</sup> In addition, it is worth to mention that over recent years, there has been a major demand for newer, complementary therapies which coexist alongside the traditional therapies.<sup>10</sup> There are several symptoms that present along with dysmenorrhea. These symptoms include gastrointestinal disturbances such as nausea, abdominal bloating, diarrhea and constipation, along with vomiting and indigestion. Furthermore, irritability, headache, and low back pain are common among the group of women presenting with primary dysmenorrhea. In addition, tiredness and dizziness are also associated with development of dysmenorrhea.<sup>11</sup> It is important to mention that dysmenorrhea is associated with significant impairment in quality of life of between 16% to 29% of women of reproductive age and can lead to many negative consequences.<sup>12</sup> Furthermore, 12% of the monthly work activities are lost due to absenteeism secondary to dysmenorrhea.<sup>13</sup>

Dysmenorrhea is a common health problem among all women of childbearing age regardless of their age, race, or ethnic group. It is one of the most frequently encountered cause of chronic pelvic pain among women. Globally, the prevalence of dysmenorrhea varied between 16% and 91% in women of reproductive age and the majority of studies reported a prevalence of > 50%; with severe pain observed in 2% to 29% of cases.<sup>12</sup> In surveys, 50% to 90% of reproductive-age women globally describe experiencing painful menstrual periods.<sup>14,15</sup> Most of these women are young and have primary dysmenorrhea. The prevalence of primary dysmenorrhea usually decreases with the advancing age, while secondary dysmenorrhea tends to develop and peak later on in life.<sup>16</sup> As primary dysmenorrhea affects younger women, the impact on school attendance and work performance is significant. School absenteeism rates of  $\geq 10\%$  to 20% have been reported worldwide.<sup>17,18</sup> A recent internet-based survey of over 32,000 Dutch women in reproductive age reported mean work absenteeism of 1.3 days per year due to dysmenorrhea with a mean reduction of productivity of 23.2 days each year. However, the study did not differentiate between impact of primary and secondary dysmenorrhea.<sup>19</sup> In Kingdom of Saudi Arabia, several studies explored this health issue. The reported prevalence of dysmenorrhoea across different geographical regions in the Kingdom ranged from 60.9% to 89.7%.<sup>11,20-23</sup> Although, a recent 2022 study by Bakhsh et al. reported a prevalence for dysmenorrhea as high as 95.3% which

raises a lot of concerns and calls for more exploration and interventions for this health issue among Saudi females.<sup>24</sup>

Considering the high prevalence of primary dysmenorrhea and its effects on the quality of life of Saudi women, the promotion of a healthy lifestyle should be one of the objectives of socio-sanitary care. Overall, dysmenorrhea persists underestimated and is given low priority in most parts of the world including Saudi Arabia compared with other health problems. Therefore, attention is needed for better prevention and management practices, and thus to improve the quality of life, productivity and work performance of the population. Limited studies up to date have been done to address the impact of dysmenorrhea on the quality of life of nursing staff in Saudi Arabia. Therefore, this study attempted to determine the prevalence, and the impact of dysmenorrhea among the nursing staff at Abha maternity and children hospital at Kingdom of Saudi Arabia

## METHODS

This cross-sectional analytic study was conducted during January 2021 to July 2022 at Abha Maternity and Children Hospital, which is located in Abha, Kingdom of Saudi Arabia. The inclusion criteria were constituted of the healthcare nursing staff at Abha Maternity and Children Hospital who are at childbearing age and willing to participate in the study; and we excluded those who refused to participate. Total-coverage sampling technique was utilized in recruiting study participants, and the final sample size was 209 nurses. An author designed questionnaire was used for data collection. The questionnaire contained information about sociodemographic factors (age, marital status, monthly income, BMI, health status), menstrual characteristics (age at menarche, duration and regularity of menstrual cycle, duration of menses and quantity of menses), presence or absence of dysmenorrhea, presence or absence of other menstruation-related symptoms, and questions to assess the impact of dysmenorrhea on the quality of life of the nursing staff. Data was coded, entered, and analysed using the programme of Statistical Package for Social Science (SPSS) version 23. Qualitative data were expressed in terms of number and percentages. Chi-square test of independence was used for comparison between groups. Any p-value of less than 0.05 was considered as significant statistically. The authors obtained approval from the Research Ethics Committee of King Khalid University, Saudi Arabia. Permission for data collection was obtained from Abha maternity and children hospital, and participants' anonymity was assured throughout the study by assigning each participant with a code number.

## RESULTS

A total of 209 nursing staff completed the questionnaire. Most of them (77%) were in the age group of 20 to 35 years of age; and were single (65.6%). Only 21.1% of the participant have a normal range BMI classification

according to the WHO classification, and the remaining 36.8% and 39.2% are overweight and obese respectively.

Regarding the menstrual characteristics, the commonest age at menarche was 12 to 17 years of age (80.9%).

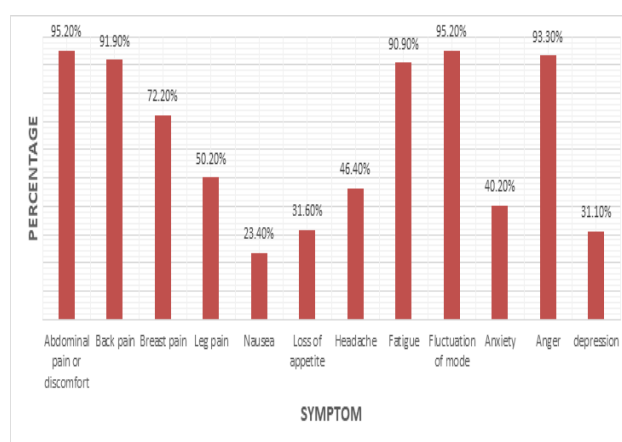
**Table 1: Characteristic of the nursing staff of Abha maternity and children hospital (n=209).**

| Characteristics                    | Category                 | N   | %    |
|------------------------------------|--------------------------|-----|------|
| Age groups (years)                 | <20                      | 8   | 3.8  |
|                                    | 20-35                    | 161 | 77.0 |
|                                    | >35                      | 40  | 19.1 |
| Marital status                     | Single                   | 54  | 25.8 |
|                                    | Married                  | 137 | 65.6 |
|                                    | Divorced                 | 18  | 8.6  |
| Monthly income (SR)                | <7,000                   | 43  | 20.6 |
|                                    | 7,000-15,000             | 139 | 66.5 |
|                                    | >15,000                  | 27  | 12.9 |
| BMI classification                 | Underweight (<18.5)      | 6   | 2.9  |
|                                    | Normal range (18.5-24.9) | 44  | 21.1 |
|                                    | Overweight (25-29.9)     | 77  | 36.8 |
|                                    | Obese ( $\geq 30$ )      | 82  | 39.2 |
| Health status                      | Healthy                  | 178 | 85.2 |
|                                    | Diabetes                 | 16  | 7.7  |
|                                    | Hypertension             | 10  | 4.8  |
|                                    | Other                    | 5   | 2.4  |
| Age at menarche (years)            | <12                      | 13  | 6.2  |
|                                    | 12-14                    | 169 | 80.9 |
|                                    | 15-17                    | 24  | 11.5 |
|                                    | >17                      | 3   | 1.4  |
| Duration of menstrual cycle (days) | <21                      | 62  | 29.7 |
|                                    | 21-25                    | 123 | 58.9 |
|                                    | >25                      | 24  | 11.5 |
| Regularity of menstrual cycle      | Regular                  | 132 | 63.2 |
|                                    | Irregular                | 77  | 36.8 |
| Duration of menses (days)          | <3                       | 12  | 5.7  |
|                                    | 3-7                      | 165 | 78.9 |
|                                    | >7                       | 32  | 15.3 |
| Menstrual blood quantity           | Small amount             | 12  | 5.7  |
|                                    | Medium amount            | 153 | 73.2 |
|                                    | High amount              | 44  | 21.1 |

The duration of the menstrual cycle was less than 21 days in 29.7% of the participants, and 21 to 25 days in 58.9% of the participants. The menstrual cycle was described as regular by 63.2% of the participants. The commonest duration of menses was 3 to 7 days (78.9%), and the amount of blood was described as moderate by 73.2% of the participants (Table 1). The (Table 2, Figure 1) present the prevalence of dysmenorrhea and other menstruation-related symptoms.

**Table 2: Prevalence of dysmenorrhea among the nursing staff of Abha maternity and children hospital (n=209).**

| Type of dysmenorrhea | N   | %    |
|----------------------|-----|------|
| Moderate             | 114 | 54.5 |
| Severe               | 53  | 25.4 |
| Total                | 167 | 79.9 |



**Figure 1: Prevalence of other menstruation-related symptoms among nursing staff of Abha maternity and children hospital (n=209).**

**Table 3: Impact of dysmenorrhea on quality of life of the nursing staff at Abha maternity and children hospital (n=209).**

| Impact of dysmenorrhea on quality of life                          | Categories | Total, N (%) | Dysmenorrhea, N (%)** |            | P value |
|--------------------------------------------------------------------|------------|--------------|-----------------------|------------|---------|
|                                                                    |            |              | No                    | Yes        |         |
| <b>Wanting to cry during menstruation</b>                          | Yes        | 173 (82.8)   | 28 (16.2)             | 145 (83.8) | 0.004   |
|                                                                    | No         | 36 (17.2)    | 14 (38.9)             | 22 (61.1)  |         |
| <b>Wanting to be alone during menstruation</b>                     | Yes        | 145 (69.4)   | 19 (13.1)             | 126 (86.9) | 0.000   |
|                                                                    | No         | 64 (30.6)    | 23 (35.9)             | 41 (64.1)  |         |
| <b>Menstrual problems affecting your family relationships</b>      | Yes        | 45 (21.6)    | 4 (8.9)               | 41 (91.1)  | 0.056   |
|                                                                    | No         | 164 (78.4)   | 38 (23.2)             | 126 (76.8) |         |
| <b>Menstrual problems affecting your relationship with friends</b> | Yes        | 44 (21.1)    | 2 (4.5)               | 42 (95.5)  | 0.007   |
|                                                                    | No         | 165 (78.9)   | 40 (24.2)             | 125 (75.8) |         |
| <b>Menstrual problems affecting your presence at work</b>          | Yes        | 71 (34)      | 1 (1.4)               | 70 (98.6)  | 0.000   |
|                                                                    | No         | 138 (66)     | 41 (29.7)             | 97 (70.3)  |         |
| <b>Menstrual problems affecting your performance at work</b>       | Yes        | 147 (70.3)   | 12 (8.2)              | 135 (91.8) | 0.000   |
|                                                                    | No         | 62 (29.7)    | 30 (48.4)             | 32 (51.6)  |         |
| <b>Menstrual problems affecting your daily activities</b>          | Yes        | 109 (52.1)   | 8 (7.3)               | 101 (92.7) | 0.000   |
|                                                                    | No         | 100 (47.9)   | 34 (34.0)             | 66 (66.0)  |         |

\*Column percent was used, \*\*Raw percent was used.

Total 79.9% of the participants reported having moderate to severe dysmenorrhea (54.5% moderate dysmenorrhea, and 25.4% severe dysmenorrhea). Regarding the other menstruation reported symptoms, more than 90% of the participants reported the following symptoms: abdominal pain or discomfort (95.2%), fluctuation of mood (95.2%), anger (93.3%), back pain (91.9%) and fatigue (90.9%). As shown in (Table 3), the most reported impacts of dysmenorrhea on quality of life were: wanting to cry during menstruation (82.8%), work performance affection (70.3%) and wanting to be alone during menstruation (69.4%). In addition, chi-square test revealed a statistically significant relationship ( $p < 0.05$ ) between dysmenorrhea and the following quality of life variables: wanting to cry and to be alone during menstruation; menstrual problems affecting relationship with friends, affecting presence and performance at work, and affecting daily activity.

## DISCUSSION

Dysmenorrhea is one of the common gynecological problems among all women in childbearing age regardless of their age and race. It is one of the most frequently encountered cause of pelvic pain in young to middle-aged females. The prevalence of dysmenorrhea and other menstrual related symptoms can vary between 16% and 91, with severe pain observed in 2% to 29%.<sup>12</sup> Agarwal et al reported that the prevalence of dysmenorrhea was 80% in adult females. Out of them, approximately 40% had severe dysmenorrhea.<sup>25</sup> In this study we explored the prevalence dysmenorrhea among nursing staff at Abha Maternity and Children Hospital at Kingdom of Saudi Arabia. We also highlighted the impact of this condition on their quality of life.

The main finding of our study is that 79.9% of the nursing staff reported having moderate to severe dysmenorrhea (54.5% moderate dysmenorrhea, and 25.4% severe dysmenorrhea). This is in line with previously reported Saudi studies in which the prevalence of dysmenorrhea ranged from 60.9% to 89.7%.<sup>11,20-23</sup> Although, a recent study by Bakhsh et al reported a prevalence for dysmenorrhea as high as 95.3%. It is worth to mention that Bakhsh et al study included a very high sample size of women of recruited from different regions from Saudi Arabia.<sup>24</sup> The possible reason for the variation in the estimates of reported dysmenorrhea in different Saudi studies may be due to the use of selected geographical groups of women, and the absence of a universally accepted definition for dysmenorrhea, and the methods of data collection. The high prevalence of dysmenorrhea in this study shows that it is still an important public health problem in Saudi Arabia and that it may have a negative impact on nurses' quality of life, social environment, work performance, and psychological status.

Globally, the reported prevalence of dysmenorrhoea varied as well, and a high prevalence for dysmenorrhea was reported in Malaysia (51.5%), Debre, Berhan, Ethiopia (66.8%), Georgia (52%), Greece (89%), India 62.5%, Spain (74.8%) and Turkey (87.7%).<sup>1,26-30</sup> Similarly, this variation can be attributed to the different ethnic groups and differences in definition for dysmenorrhea. Regarding the other menstruation-related symptoms, more than 90% of the participants in this study reported the following symptoms: abdominal pain or discomfort (95.2%), fluctuation of mood (95.2%), anger (93.3%), back pain (91.9%) and fatigue (90.9%). So, dysmenorrhea is not the only reported menstrual-related health problem, however, its impact on the quality of life is more pronounced. Furthermore, different previous studies reported similar

gastrointestinal, psychological, and other physical symptoms that were associated with dysmenorrhea.<sup>25</sup> This study also focused on the impact of dysmenorrhea on the quality of life of these nursing staff. We noticed that a significantly high number of women with dysmenorrhea suffered more from the following problems: wanting to cry and to be alone during menstruation; menstrual problems affecting relationship with friends, menstrual problems affecting presence and performance at work, and menstrual problems affecting daily activities.

A similar study which was conducted among nursing staff of Kathmandu Medical College and Teaching Hospital reported concordant findings. Most of the participant nurses in that study (75.9%) reported stress due to night shifts and 87.7% of nurses reported stress due to work which negatively impacted on their attendance and performance at work.<sup>31</sup> This finding is also in line with a study done by Lawson et al which concluded that night shifts, as well as long working hours, and physically demanding work may be the cause of menstrual disturbances among the nursing staffs.<sup>32</sup> Therefore, adverse health problems of menstrual disturbances represent a significant occupational health challenges in the nursing profession in different countries.<sup>33</sup> Considering the high prevalence of dysmenorrhea and its effect on the quality of life of nursing staff, the promotion of a healthy lifestyle and work environment for nurses should be one of the objectives of socio-sanitary care. The hospital managers should therefore embrace comprehensive interventions for the affected nurses that may benefit the quality of life of these working group.

### Limitations

This study was conducted among nursing staff of a single hospital, so, the result might not be generalized to all the health care personnel in Saudi Arabia, for which multi-center study among the nursing staff will be necessary. There may be recall bias by some participants which may lead to some inaccuracy. Finally, the absence of a universally accepted definition for dysmenorrhea may affect the generalizability of our results.

### CONCLUSION

The prevalence of dysmenorrhea is high among our nursing staff in Abha Maternity and Children Hospital at Kingdom of Saudi Arabia, which is in line with previous studies. Its impact on quality of life is pronounced especially on the attendance and performance at work. Adverse health problems of menstrual disturbances represent a significant occupational health challenge in the nursing profession in Saudi Arabia.

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