Relationship between life qualities of adolescents and dysmenorrhoea.

Fatma Deniz Sayiner¹*, Nebahat Özerdoğan¹, Yunus Aydın², Didem Aslantaş³, Hikmet Hassa³

¹Department of Midwifery, Faculties of Health Sciences, Eskisehir Osmangazi University, Eskisehir, Turkey
²Denizli Private Health Hospital, Denizli, Turkey
³Faculty of Medicine, Eskisehir Osmangazi University, Eskişehir, Turkey

Abstract

Objective: In this study, it is aimed to investigate the relationship between life qualities of adolescents who have dysmenorrhoea and do not have in the menstrual period and symptoms.

Study Design: This study is a school-based cross-sectional. The search universe consists of the adolescent students (N=1752, between the ages of 13-19 years) from two girl in schools Central Anatolia Region. The study group consists of these students (n=1462) who were at the school in February-June in the year of 2013, had menstrual cycles during last one year, accepted to participate in the study and filled the forms used in the search completely.

Method: Data were obtained with a survey form which were improved by the researchers in the result of literature investigation and had 25 questions about socio-demographic and menstrual properties, a V AS pain scale and a life quality scale.

Results: Prevalence of dysmenorrhoea was found 69.3% in the adolescents who were participated in the survey. 67.0% of the students with dysmenorrhoea said that their daily lives were affected by the pain. The average of V AS score was found higher in the students who said that they affected compared to the students who said that they did not affect (p:0.000). The average of V AS score was also found higher in the students who cannot go to school because of dysmenorrhoea compared to ones who can go to school (p:0.000). Furthermore, when the average scores were calculated in all sub-domains of SF: an average of 36 points life quality scale, the average scores of the students with dysmenorrhoea was found lower according to ones with non-dysmenorrhoea (p:0.00).

Conclusion: It is said that dysmenorrhoea in the adolescent periods more common than it was considered and it has been also negatively affected the quality of life and the continuity of social life.

Keywords: Adolescent, Dysmenorrhoea, Quality of life, Pain.

Introduction

Dysmenorrhoea is characterised by low abdominal or pelvic pain occurring before or during menstruation [1]. Dysmenorrhoea is a very common gynaecological complaint in adolescents and young adults [2]. While dysmenorrhoea is very rare in the first years following menarche, it gains increasing frequency with the ovulatory feature of the cycles [2]. Studies have reported that the prevalence can vary between 50 and 85% of adolescent girls aged 12-15 years, with different measurement methods [3-5]. The reason for the difference in the prevalence studies is due to measurement methods. There are no certain criteria defined for dysmenorrhoea. However, dysmenorrhoea is defined as a characterised syndrome which is in reproductive age, repeats during menstruation for at least three cycles, often accompanies pelvic pain and with premenstrual tenderness, depression, nausea, vomiting, diarrhoea, constipation, fatigue, headache and muscle cramps [6,7]. Dysmenorrhoea is separated into two forms by etiopathology: primary and secondary, and is divided into three groups clinically: mild, moderate and severe. Primary dysmenorrhoea is defined as the absence of a clinically detectable pathology and is generally seen <25 years; 6-12 months after menarche, pelvic pain is spasmodic. In the first menstrual period, 60% of cycles are an ovulatory or progesterone secretion is insufficient depending on corpus luteum shortness. Therefore, dysmenorrhoea complaints are seen together with cycles of sufficient ovulation after some cycles of menarche. The progesterone decrease seen at the end of the cycle after ovulation causes an increase in menstrual liquid and prostaglandin synthesis in the endometrium. Increased prostaglandins create an increase in myometrial tone and uterine contractions, making them painful by causing uterine ischemia [8,9]. Many studies have shown that there is no relationship between physical activity and dysmenorrhoea [9]. In total, 45-70% of post-pubertal girls have a primary complaint of dysmenorrhoea. For this reason, primary
Dysmenorrhea should be separated from secondary dysmenorrhea underlyng another cause. Secondary dysmenorrhea develops depending on pelvic pathologies such as reproductive or genital tract infections, pregnancy complications, endometriosis, congenital anomalies and neoplasms of genital system, and adhesions [8,10]. The pain can begin before menstruation and continues a few days after. In later years, duration and severity may increase. The character of the pain varies according to the type of pelvic pathology [11]. While the treatment for primary dysmenorrhea is psychological relaxation and analgesic, it is a major cause of secondary dysmenorrhea [12]. Dysmenorrhea is a syndrome characterized by recurrent crampy lower abdominal pain often accompanied by premenstrual tenderness, depression, nausea, vomiting, diarrhoea, constipation, fatigue during menstruation [7,13]. Dysmenorrhea is rare in menarche during the first 1-2 years and is becoming increasingly common with the winning feature of ovulatory cycles [2]. Dysmenorrhea affects 30-50% of young girls [5]. According to the etiopathogenesis, it is separated into two groups: primary and secondary dysmenorrhea is mild and moderate, while severe is divided into three groups. Primary dysmenorrhea is defined clinically as the absence of a detectable pathology and usually in the previous period of <25 years, is seen 6-12 months after menarche, pelvic pain is spasmodic. 60% of the cycles are an ovulatory in first menstrual period or secretion of progesterone is inadequate depending on the corpus luteum deficiency. Therefore, dysmenorrhea complaints are occurred after a few cycles of menarche with ovulation occurring sufficient cycles. After ovulation, at the end of the cycle reduced progesterone is leads to decreasing prostaglandin synthesis in the endometrium and menstrual fluid. Increased prostaglandins create an increase in myometrial tone and uterine contractions and can lead to pain by causing uterine ischemia [8,9,11]. Dysmenorrhea is an important health problem which is commonly seen in young girls. In many studies it is stated that dysmenorrhea is an issue causing people not to go to school, and also affects their quality of life negatively. In this study, the effects of dysmenorrhea in adolescents, who we have not yet been studied before in the literature, will be investigated.

Objectives
We aimed that at which level the daily life of 1462 adolescents affects from dysmenorrhea and if dysmenorrhea decreases the quality life or not. This study is important because it is the first to discuss the relationship between dysmenorrhea prevalence and quality of life in such a large number of adolescents.

Materials and Methods

Participants and design
This study is a school-based cross-sectional study. The search universe consists of adolescent students (N=1752, between the ages of 13-19 years) from two girl's schools in Eskişehir located in the Midwest of Turkey. The study group consists of these students (n=1462) who were at the school in February-June in the year of 2013, had menstrual cycles during the previous year, agreed to participate in the study and filled in the forms used in the search completely.

Exclusion criteria
Overall, 224 of all adolescents were not included because one year had not passed from the beginning of their menstrual cycles or they had not experienced menstrual cycles yet. Sixty-six of all individuals did not agree to participate in the study or filled in the forms incompletely.

Measures
The data were collected via two instruments: the student description form developed by the researchers and Health Survey Questionnaire.

Student description form
A form consisting of 25 questions was used to determine the students’ demographic features (age, menarche age, etc.) and other features associated with their menstruation period.

Quality of life measure
Health-related QOL was assessed with the SF-36 Health Survey Questionnaire. The validity and reliability of this instrument has been established for measuring QOL in large populations of both healthy and diseased individuals. The original questionnaire was developed by Ware and Sherbourne [13], with reliability and validity studies for the Turkish version of SF-36 performed by Kocyiğit et al. [14]. It is a self-evaluation instrument consisting of 36 items which provide assessment in 8 domains: physical functioning, role functioning, bodily pain, vitality, mental health and general health perception. In our study, we used the Turkish version of SF-36, which showed good reliability and validity in the Turkish validation study. Scores ranged from 0 to 100 for each domain separately. A higher score indicates better QOL [15].

Results
The mean age of the adolescents participating in the study was 16.01 ± 1.11 (min: 13; max: 20) and the mean menarche age was 12.86 ± 1.26 (min: 8; max: 17). In the adolescents who participated in this study, the dysmenorrhea prevalence was 69.3% (n=1013). Overall, 48.1% of these adolescents stated that they had dysmenorrhea for last three months and 51.9% of them stated that they had dysmenorrhea for longer than one year. In total, 23.0% of the adolescents (n=230) with dysmenorrhea said that they did not have this complaint during some menstrual periods and 67.0% of them (n: 683) stated that their daily lives were affected by pain. Their VAS (Visual Analogue Scale) average was higher than the average for adolescents who said that they were not affected (p: 0.000).
In Table 1, age, menarche age, VKI and family income status of adolescents who participated in the search have been reviewed. There was no difference in dysmenorrhoea according to age, VKI and menarche age when compared to that with no dysmenorrhoea (p>0.05).

<table>
<thead>
<tr>
<th>Feature</th>
<th>Dysmenorrhoea (n=1013, 69.30%)</th>
<th>No Dysmenorrhoea (n=449, 30.70%)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>16.01 ± 1.08</td>
<td>16.02 ± 1.16</td>
<td>0.98</td>
</tr>
<tr>
<td>Menarche age</td>
<td>12.85 ± 1.21</td>
<td>12.86 ± 1.36</td>
<td>0.88</td>
</tr>
<tr>
<td>VKI</td>
<td>20.16 ± 2.97</td>
<td>20.15 ± 2.80</td>
<td>0.99</td>
</tr>
</tbody>
</table>

When the distribution according to dysmenorrhoea situations of menstrual periods of adolescents participated in this study was investigated, there was no significant difference (p: 0.08). The menstrual cycles of these adolescents with dysmenorrhoea lasted longer than those with no dysmenorrhoea (p: 0.03). In this study, the correlation between menstrual irregularity and dysmenorrhoea was significant (p: 0.000). As the amount of bleeding increased, so the frequency of dysmenorrhoea increased (p: 0.000). Overall, 56% (n: 572) said that menstrual pain continued until the end of Day 1, 23% (n: 222) said that it continued up to Day 2 and 21% (n: 219) said that it continued during menstruation.

<table>
<thead>
<tr>
<th>Feature</th>
<th>VAS average</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy status of daily living activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7.02 ± 1.97</td>
<td>t: 14.71</td>
</tr>
<tr>
<td>No</td>
<td>5.12 ± 1.90</td>
<td>P&lt;0.001</td>
</tr>
<tr>
<td>Status of causing school absence</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7.31 ± 2.07</td>
<td>t: 7.37</td>
</tr>
<tr>
<td>No</td>
<td>6.15 ± 2.09</td>
<td>P&lt;0.001</td>
</tr>
</tbody>
</table>

In Table 2, 67% of adolescents with dysmenorrhoea (n: 683) stated that their daily living affected because of pain. VAS average of this group was significant compared to those who reported that theirs were not affected (p: 0.00). VAS average of the students who did not go to school because of dysmenorrhoea was higher than the average of students who go to school.

<table>
<thead>
<tr>
<th>Nutrition Change</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased the amount of sugary foods</td>
<td>198</td>
<td>73</td>
</tr>
<tr>
<td>Increased the amount of protein foods</td>
<td>147</td>
<td>54</td>
</tr>
<tr>
<td>Increased fruit and vegetable</td>
<td>223</td>
<td>82</td>
</tr>
<tr>
<td>Increased tea and coffee</td>
<td>93</td>
<td>34</td>
</tr>
<tr>
<td>Decreased smoking</td>
<td>74</td>
<td>27</td>
</tr>
<tr>
<td>Decreased salt</td>
<td>122</td>
<td>45</td>
</tr>
<tr>
<td>Decreased frequency of eating</td>
<td>116</td>
<td>43</td>
</tr>
<tr>
<td>Increased herbal tea</td>
<td>171</td>
<td>63</td>
</tr>
</tbody>
</table>

In our study group, when the average scores were calculated in all sub-domains of SF: an average of 36 points life quality scale, the average scores of the students with dysmenorrhoea was lower compared to those with non-dysmenorrhoea (p: 0.00).

**Discussion**

Many studies have been seen aimed at determining dysmenorrhoea prevalence in different societies. In these studies, example numbers are important in terms of pointing out risk factors clearly. While some of these studies investigated the risk-factors causing dysmenorrhoea, others tried to determine the risk factors causing school absence and coping methods. While our study is important in terms of the size of the sample number, it is one of the rare works also
taking on school absence and living quality of young girls (Table 5).

### Table 5. Distribution of scores of dysmenorrhea and live quality.

<table>
<thead>
<tr>
<th>Quality of life variables</th>
<th>Dysmenorrhea</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Average</td>
<td>Min-Max</td>
</tr>
<tr>
<td>Physical Activity Function</td>
<td>80</td>
<td>0-100</td>
</tr>
<tr>
<td>Physical Role Function</td>
<td>75</td>
<td>0-100</td>
</tr>
<tr>
<td>Pain</td>
<td>45</td>
<td>0-100</td>
</tr>
<tr>
<td>General Health Function</td>
<td>45</td>
<td>5-87</td>
</tr>
<tr>
<td>Vitality Function</td>
<td>47.05</td>
<td>0-94.2</td>
</tr>
<tr>
<td>Social Activity Function</td>
<td>50</td>
<td>0-100</td>
</tr>
<tr>
<td>Mental Role Function</td>
<td>66</td>
<td>0-100</td>
</tr>
<tr>
<td>Mental Health Function</td>
<td>43.47</td>
<td>0-86.90</td>
</tr>
</tbody>
</table>

The present study found a high prevalence of young girls with dysmenorrhea, who stated that their daily living was affected by pain (67.0%). VAS averages of these found higher than ones who said that their daily living was not affected (p: 0.000). At the same time, the school absence of the group whose VAS average is higher is also statistically significant (r: 7.37). In this study, it was seen that the life qualities of adolescents with dysmenorrhea were lower compared to the adolescents with no dysmenorrhea when physical activity function, physical role function, pain, general health function, vitality function, social activity function, mental role function and mental health function were analysed. It was seen that the pain in adolescents with dysmenorrhea negatively affected their life qualities. This low of the life quality in every field affects young girls going on from school and their level of success.

Lots of studies have been done in the past on the prevalence of menstrual problems in adolescent girls, yet much research has not been done on their relation with lifestyle factors. Dysmenorrhea is highly prevalent among women of reproductive age, with an estimated prevalence between 16% and 91% [16-23]. Also in this study, it was observed that dysmenorrhea prevalence (69.3%) was quite common in young girls likewise literature. Because of dysmenorrhea, school absence has come up as an important problem.

According to Gagua et al. [20], the rate of pain and dysmenorrhea symptoms is 69.7%. It is the leading cause of recurrent short-term school absenteeism in adolescent girls in the United States [24,25]. It has been reported that this ratio is 30.7% in girls with dysmenorrhea in a study done in Brazil [23]. According to Gagua et al. VAS averages of 69.1% of adolescents with dysmenorrhea complain varied between 4 and 7 [20]. In this study, VAS average of the adolescents whose daily life activity was affected because of dysmenorrhea was found to be 7.02 ± 1.97. In a study of Chauhan and Kala [21], young girls living in rural and urban areas were compared and 17% of the girls with a dysmenorrhea complaint in the middle level and live in rural areas, and 30% of girls who live in urban areas, could not go to school because of dysmenorrhea complaints. In the study by Pitangui et al., it has been reported that the rate of school absence because of dysmenorrhea was 30.71%. In this study, a school absence of 356 people (35.1%) has been determined [22].

In the literature, there are studies which found a significant relationship between VKI and dysmenorrhea prevalence. However, there are also studies which showed the opposite results. In the study of Nooh [25], the VKI of young girls with dysmenorrhea was 23.4 ± 1.2, while in our study it was 20.16 ± 2.97. It was determined that 30.9% of the students with dysmenorrhea were underweight, 63.9% were normal, 4.3% were overweight and 0.9% was morbidly obese. In the study by Vani et al., VKI of 76.5% of the students with dysmenorrhea was in the normal range [15].

When the relationship between dysmenorrhea prevalence and menarche age was looked at, the average was 12.3 ± 2.2 in a study by Strinić et al. [4], 12.58 ± 0.2 in Gagua et al. [19], 11.94 ± 0.04 in Jeon et al. [24] and 12.1 ± 1.6 in Nooh [25]. In the same way, the average menarche age was 12.85 ± 1.21 in our study [25].

When the literature was reviewed, some physical and emotional complaints were seen with dysmenorrhea. For example, in the study by Gagua et al., it was pointed out that the most common complaints were 38.4% weakness, migraine 38.4% headache, 37.3% tension, 26.0% anxiety, 23.1% vertigo, 21.0% nausea [20]. In the study by Pitangui et al. there was 61.4% breast swelling and pain, 36.2% backache, 32.7% tired legs, 27.5% vertigo, and 22.9% nausea [21]. In our study, the results were 66.0% backache, 60.0% anger, 58.0% tension, 51.0% fatigue, 51.0% nausea, and 33.0% breast tenderness.
Jeon et al. [24] investigated the methods of coping with dysmenorrhoea; they showed that 49.7% did not do anything, 38.8% slept, 58.4% used hot application on their abdomens, and 15.9% tried to concentrate on other works. In our study, we found that 11.0% said they did nothing, 68.0% said they relaxed by laying down, 51.0% reported that they used hot application on their abdomens, 34.0% said that they took a hot shower, 25.0% reported that they had a rubdown, 13.0% stated that they walked, and 19.0% said that they did exercise [25].

When the number of young girls using medicine because of dysmenorrhoea was observed, it was seen that 96% of participants used medicine in the study of Strinić et al. (2003) (4), but only 21.9% in Jeon et al. [24], 63.78% in Pitangui et al. [21], 9.82% used NSAIs and 71.78% used other painkillers and analgesics in Gagua et al. [19]. In our study, while 56% of the participants reported that they used medicine for dysmenorrhoea, 48% of this group said that they used paracetamol and 52% said that they used NSAIs.

Some women change their nutrition during their menstrual period. While some tend to consume sugary foods, others consume more liquids. In our study, 27% of adolescents with dysmenorrhoea during their menstrual period reported that they changed their nutrition. It was seen that 82% of the participants increased fruit-vegetable, 73% increased the amount of sugary foods, 54% increased the amount of protein foods, 63% increased herbal tea and 45% decreased consuming salt. When the family income status of the participants was looked at, it was determined that 68.7% of the participants had a good family income, 71.9% had a moderate income, while 9.42% was from families with a low income. In the study by Gagua et al. (2012), 85.51% of the participants with dysmenorrhoea were from families with a moderate income, while 9.42% was from families with high income [20].

In conclusion, we found that dysmenorrhoea is a health problem which is important for young girls and needs to be solved. Education programs about coping methods for young girls should be organised and consultancy should be given to reduce school absence and increase life quality. Availability of a physiological factor causing dysmenorrhoea needs to be excluded.

**Funding Support**

This study was funded and supported by Eskişehir Osmangazi university of Scientific Research Project Units; Project no: 201211008. All financial support used to data collection, analysed data and wrote the manuscript.

**Disclosure of Conflict of Interest**

None.

**Ethical Concerns**

Written permission from the ethic committee of related universities was obtained in order to do the research. The students involved in the study were informed about the purpose of the study. The participants were asked to sign consent forms and were informed that they could withdraw from the study at any time. 2012-11-008 scientifically coded is derived from the project supported by Eskişehir Osmangazi University Scientific Research Unit.

**Acknowledgment**

The author would like to thank all participant and Eskişehir Osmangazi university of Scientific Research Project Unit.

**References**


*Correspondence to*

Fatma Deniz Sayiner
Department of Midwifery
Faculty of Health Sciences
Eskisehir Osmangazi University
Eskisehir
Turkey