Comparing the Life Quality of Female Students with and without Primary Dysmenorrhea in Zahedan University of Medical Sciences in 2016

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Abstract

Background and objective: Dysmenorrhea is the most common gynecologic complaint among adolescent and young adult females that affects women's quality of life and social activities and imposes a lot of social costs on society as a whole. This study aimed to compare the life quality among female students with and without primary dysmenorrhea.

Method: This case-control study was performed on 90 female students in 3 groups of 30 subjects without dysmenorrhea, with primary dysmenorrhea with back pain, and primary dysmenorrhea without back pain at Zahedan University of Medical Sciences in 2016. The Short Form-36 (SF-36) questionnaire was used to determine the score of life quality. Measures of central tendency, dispersion and frequency distribution tables (absolute and relative) were used to describe the data, as well as statistical tests of variance analysis and linear regression for data analysis.

Results: The score of life quality in the without dysmenorrhea group was 549.38 ± 108.31, the primary dysmenorrhea group with back pain was 534.5 ± 117.52, and the primary dysmenorrheal without back pain group was 475.41 ± 103.21 and showed a significant difference in the three groups (P = 0.03).

Conclusion: The results of the study showed that life quality in people with primary dysmenorrhea was significantly lower than those without dysmenorrhea.

Key words: Life quality, Primary dysmenorrhea, without dysmenorrhea

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Introduction

Dysmenorrhea may be categorized into two distinct types: primary and secondary. Primary dysmenorrhea is defined as painful menses in women with normal pelvic anatomy, usually beginning during adolescence (1, 2). It also refers to the lower abdominal pain without any pelvic pathology caused by muscle contractions (cramping) and pain may radiate to the back of the legs or the lower back (3, 4). People with primary dysmenorrhea may develop symptoms such as pelvic pain, back pain, premenstrual sensation, irritability, depression, headache, nausea, vomiting, flatulence, constipation, diarrhea, fatigue and frequent urination during menstruation (5, 6). Primary dysmenorrhea starts 6–12 months after menarche (5). The pain appears during the first day of each menstrual cycle and usually lasts from 8 to 72 hours (7). Primary dysmenorrhea is the most common gynecologic complaint among adolescent females (5). The prevalence of dysmenorrhea varies between 45% and 95% in women of reproductive age (8, 9). Based on the prevalence age, primary dysmenorrhea starts at the age of 15 to 17 years and reaches its peak at 20 to 24 years of age (11). Primary dysmenorrhea is the most common reason for absence from school and work, and therefore interferes with daily life activities and imposes many social costs on society (9). Despite the high prevalence, dysmenorrhea is often poorly treated, and in many cultures it is just accepted as normal by women and girls – who just "put up with it". I don't think many see it as embarrassing – maybe in young girls who have just reached menarche. Quality of life represents a person's perception of his or her overall sense of daily life and is an important benchmark based on the patient's report (12, 13). Quality of life involves different aspects of health, welfare, and also physical, mental, and social comfort experienced by people (14). Pain is one of the major causes for poor life quality (12). Studies have reported that the life quality of women with dysmenorrhea has been reduced (18-15), although most of these studies did not distinguish between primary and secondary dysmenorrhea and only took into consideration the dysmenorrhea. By investigating the prevalence of dysmenorrhea and quality of life among girls aged 14 to 19, Suresh Kambahan and colleagues showed that life quality of these girls is low (19). In another study by Kenan et al. among women with primary dysmenorrhea, it was concluded that primary dysmenorrhea in women can cause disorders in terms of general health, occupational status and family-related activities. Lacquvidez et al also reported that women with dysmenorrhea had a significant reduction in the quality of life than the follicular and control group (20). According to previous studies, quality of life is significantly lower in people with dysmenorrhea. However, most studies have not examined the quality of life in the two groups of dysmenorrhea without dysmenorrhea and did not distinguish between primary and secondary dysmenorrhea. Furthermore, no study has been found to assess the quality of life score in healthy individuals and primary dysmenorrhea based on the existence and absence of back pain (3, 15, 19, 20). Therefore, the aim of this study was to compare the quality of life in female students with primary dysmenorrhea with and without back pain and without dysmenorrhea at Zahedan University of Medical Sciences.

Methods

This case-control study was performed on female students at Zahedan University of Medical Sciences in 2016. After referral and initial assessment, students entered into the study based on the inclusion criteria. The inclusion criteria included: normal menstrual cycles (21), being single, absence of secondary dysmenorrhea (1), non-use of contraceptive drugs, absence of reproductive system disease or other systemic diseases, and absence of previous gynecological interventions (21). 90 medical students participated in this study. The participants were divided into three equal groups (n = 30) with primary dysmenorrhea with low back pain and without low back pain (pain intensity of 4/10) and without dysmenorrhea (pain intensity 0-3) based on the pain intensity and symptoms (22). Demographic characteristics of participants (age, height and weight) and pain intensity were recorded in the assessment form. After informing the objectives and stages of the study, they signed a consent form. The VAS scale was used to measure pain intensity. This scale is 10cm-long horizontal line labeled "no pain" on the far left and "worst pain ever" on the far right. It asked the participants to place a mark on the line at a point representing the severity of their pain (23). Then, the questionnaire related to quality of life was given to subjects to fill out it. The SF-36 questionnaire was used to assess the quality of life. The questionnaire consists of 36 items that measure the dimensions of physical function, social function, role limitation due to emotional problems (emotional role), role limitation due to physical problems (physical role), body pain, vitality, mental health, and general health perception. The scores range from 0 to 100; higher scores indicate a better quality of life (15). Reliability and validity of this questionnaire have been confirmed by numerous previous studies (24); (α Cronbach from 0.77% to 0.90%) (correlation more than 0.40% from 0.58% to 0.95%). Data were analyzed using SPSS software version 17. Measures of central tendency, dispersion and frequency distribution tables (absolute and relative) were used to describe the data, as well as statistical tests of variance analysis and linear regression for data analysis. A significance level (α) less than 0.05 was set for statistical comparisons.

Results

The demographic characteristics of the subjects and the risk factors for dysmenorrhea are presented in Tables 1 and 2. No significant difference was observed between the two groups in terms of age, BMI, age of first menstruation, and the average consumption of fruits and vegetables. The mean pain intensity in the group without dysmenorrhea was 1.73 ±1.08, 6.86 ± 1.52 in the primary dysmenorrhea group with low back pain and 6.20 ± 1.90 in the primary dysmenorrhea without back pain, and no significant difference was observed between the two groups of primary dysmenorrhea in terms of pain intensity (P = 0.2). However, the mean pain intensity was significantly lower in the group without dysmenorrhea than in the two groups of primary dysmenorrhea with and without low back pain (P <0.05). The mean and standard deviation of the subscales of quality of life and the overall scale of quality of life are presented in Table 3. Analysis of variance showed a significant difference between the mean score of quality of life in the three groups (P = 0.03). The quality of life score in the group without dysmenorrhea was 549.38 ± 108.39, 534.5 ± 117.52 in the primary dysmenorrhea group with low back pain and 475.41 ± 103.21 in the primary dysmenorrhea group without low back pain. The pairwise comparison at a 0.05 significance level showed there was only a significant difference between the group without dysmenorrhea and primary dysmenorrhea with low back pain group (P = 0.001). The scores obtained from a number of subscales of quality of life (physical function, energy and fatigue, emotional well-being, social functioning, pain, general health) were higher in the group without dysmenorrhea than in the two groups of primary dysmenorrhea and were lowest in the primary dysmenorrhea group without low back pain (P> 0.05). Role limitation due to emotional health in the primary dysmenorrhea group with low back pain (LBP) was better than the other two groups and the lowest level was observed in the primary dysmenorrhea group without low back pain. Pain and general health scores in the group without dysmenorrhea were better than the other two groups and the lowest level was observed in the primary

dysmenorrhea group without low back pain. There was a significant difference between the two general subscales of the quality of life in the three groups (P = 0.03), which was better in the group without dysmenorrhea than in the other two groups and was lowest in the primary dysmenorrhea group without back pain. Mental health was better in the primary dysmenorrhea group with low back pain than in the other two groups and was lowest in the primary dysmenorrhea without back pain (P = 0.06). In addition, the quality of life score varied among the studied groups based on bleeding volume, familial history of dysmenorrhea and pain in lower abdominal area without menstrual periods (Table 4); the quality of life score in those with a history of dysmenorrhea showed a significant difference between the three groups (P = 0.001), so that it was better in the primary dysmenorrhea group with low back pain and with a higher percentage of familial history of dysmenorrhea and was lowest in the primary dysmenorrhea group without back pain compared to the other two groups. Furthermore, the quality of life score showed that there was a significant difference between the three groups in those with high menstrual flow (P = 0.04), that is, the quality of life score was better in the group without dysmenorrhea and it was lowest in the primary dysmenorrhea group without low back pain. Regression analysis was used to identify predictive variables. According to the results, this model is generally significant (F = 5.61, P = 0.005). However, the study group and the group with pain in lower abdominal area on non-menstrual days remained predictive in quality of life model (Table 5). Indeed, there was a negative relationship between quality of life and the study group (B = -30.41, t = -2.129, P = 0.03), so that for each unit change (class or group studied), the quality of life score declined 30 points. Lower abdominal pain without menstrual periods was another predictive variable, which showed a positive relationship with quality of life (B = 65.74, t = 2.043, P = 0.04), so that in comparison with those with lower-abdominal pain on non-menstrual days, the quality of life score for those without lower-abdominal on non-menstrual days was better (66 points).

Table 1: Demographic characteristics of the studied groups

Group	Without dysmenorrhea	Primary dysmenorrhea with low back pain	Primary dysmenorrhea without low back pain	P-value
Age	22.10 ± 3.33 [a]	21.03± 1.77	22.03 ±2.55	0.21% [b]
BMI	20.96± 2.57	21.9 ±3.13	21.98 ±3.56	0.37%
Age of first menstrual cycle	13.31 ±1.60	12.66 ±1.26	13.26 ±1.72	0.20%
Average consumption of vegetable [c]	1.03 ±0.82	1.03 ±0.65	1.13± 0.64	0.82%
Average fruit consumption [d]	1.86 ±2.73	1.06 ±0.57	1.83± 1.42	0.15%

a refers to mean and standard deviation
b refers to p <0.05: significance level
c (unit) 1 cup of raw vegetable, one-half cup of vegetables and one-half cup of vegetable juice (unit) refers to an average fruit

Table 2: Frequency distribution of characteristics related to the menstrual cycle in the subjects studied by group

Group	Without dysmenorrhea	Primary dysmenorrhea with low back pain	Primary dysmenorrhea without low back pain	P-value
Bleeding volume				
high	(10%)2	(60%) 12	(30%)6	0.024
moderate and low	(40%)28	(25%.7)18	(34%.3)24	
Lower-abdominal pain on non-menstrual days				
Yes	(7.1%) 1	(42.9%)6	(50%)7	0.07
No	(38.2%)29	(31.6%)24	(30.3%)23	
Family history				
Yes	(22.2%)10	(37.8%)17	(40%)18	0.07%
No	(44.4%)20	(28.9%)13	(26.7%)12	

* To perform a chi-square test, two groups of primary dysmenorrhea with and without back pain were combined and then analyzed. (Chi square = 5.12 and Df = 1)

Table 3: The mean and standard deviation of quality of life score in general and in terms of different dimensions in the three studied groups

Group / Variable	Without dysmenorrhea	Primary dysmenorrhea with low back pain	Primary dysmenorrhea without low back pain	P-value
Physical function	85.83 ±10.99	85.00 ±16.45	81.36± 15.51	42%**
Limitation role due to Physical Health	67.50 ±25.55	71.66 ±34.57	69.16 ±31.95	60%
Limitation role due to emotional health	45.55 ±36.60	60.00 ±46.65	31.11 ±36.02	0.04%
Energy / fatigue	62.66 ±19.94	59.16± 18.89	55.66 ±18.64	20%
Emotional well-being	69.33 ±17.80	67.33 ±19.71	63.86 ±18.80	49%
Social functioning	65.83 ±21.50	63.33 ±21.50	55.00 ±22.40	18%
Pain	78.33 ±14.46	59.50 ±25.05	58.23 ±19.71	0.001
General health	74.33 ±13.94	68.50 ±18.1	61.00 ±16.26	0.001
Physical health	306.00±44.16	284.66±67.30	269.76±53.58	0.03%
Mental health	243.38±75.71	249.83±82.91	205.64±75.6	0.06%
Quality of Life	549.38±108.31	534.50±117.52	475.41±103.21	0.03%

** P <0.05 is significant.

Table 4: Mean and standard deviation of quality of life score according to family history, bleeding volume and lower-abdominal pain on non-menstrual days in three groups

Group / Variable		Without dysmenorrhea	Primary dysmenorrhea with low back pain	Primary dysmenorrhea without low back pain	P-value
Family history	Yes	556.98 ±108.5	578.28±11.30	451.61± 79.76	0.001**
	No	545.5 ±111.04	477.24±104.35	511.11±126.22	0.24%
Bleeding volume	Very high	623.25 ±37.83	564.94±135.77	418.02±78.64	0.04%
	moderate to low	544.11± 110.06	514.20±102.68	489.75±104.94	0.19%
Lower-abdominal pain on non-menstrual days	Yes	596.50	439.44±72.40	440.54±79.15	0.19%
	No	547.76 ±109.85	558.26±115.45	486.02±108.75	0.06%

* Mean and standard deviation.   ** P <0.05 is significant.

Table 5: Factors affecting the quality of life score of the subjects

Model	Non-standard coefficient of determination		Standard coefficient of determination	T test	Significance level
	B	Sig .Error	Beta		
Group	-30.41	14.28	-0.22%	-2.1	0.03%
Lower-abdominal pain on non-menstrual days	65.74	32.17	0.21%	2.0%	0.04%

Discussion

The results of this study showed that there is a difference between the quality of life score in the three groups studied. The quality of life score in the group without primary dysmenorrhea is higher than that of the other two groups and is lower in the primary dysmenorrhea group without low back pain. These results are in line with the previous studies that compared the quality of life score in the two groups of dysmenorrhea and without dysmenorrhea, indicating that the quality of life score in the group without dysmenorrhea was significantly better than that of the dysmenorrhea group (3, 19, 25). For example, by investigating the prevalence of dysmenorrhea and quality of life among girls, Suresh Kambahan and colleagues showed that that bad dysmenorhoea reduced quality of life.. They evaluated the dysmenorrhea in general and did not distinguish between the two groups of primary and secondary dysmenorrhea, and only two groups, dysmenorrhea and without dysmenorrhea were compared. In another study by Paria Kenan et al. (2015) among women with primary dysmenorrhea, it was concluded that primary dysmenorrhea in women can cause disorders in terms of general health, occupational status and family-related activities (26). In their study, they evaluated the impact of exercise on reducing pain and improving the quality of life in women with primary dysmenorrhea and all subjects who participated in the study and no comparison was made between the groups with dysmenorrhea and without dysmenorrhea. Lacquvidez et al. (2014) also reported that women with dysmenorrhea had a significant reduction in the quality of life than those in follicular and control group (25). Sample size was lower in their study and comparison was made between the two groups of primary dysmenorrhea and non-dysmenorrhea. The scores obtained from a number of subscales of quality of life (physical function, energy and fatigue, emotional well-being, social functioning, pain, general health) were higher in the group without dysmenorrhea than those in the two groups of primary dysmenorrhea. These results are in line with the results of a study by Bernard et al. (2010). They reported that an increase in pain intensity of dysmenorrhea led to a decrease in the average score obtained from all subscales of SF36, and in general, any pain or disturbance, menstrual or non-menstrual may have made them think they had a low quality of life (15). However, there is no distinction between primary and secondary dysmenorrhea and participants with dysmenorrhea and without dysmenorrhea were evaluated. Dysmenorrhea associated with physical impairment may lead to a decrease in the quality of life in individuals. To the best of our knowledge,

no study has so far been carried out to compare the quality of life score in healthy individuals and those with primary dysmenorrhea in terms of existence and absence of low back pain with dysmenorrhea. The present study compares the quality of life and various dimensions in three groups of primary dysmenorrhea with low back pain and without back pain and primary dysmenorrhea, and also evaluated the risk factors affecting dysmenorrhea and quality of life. The comparison showed that the quality of life between the two groups of primary dysmenorrhea with back pain and without back pain is better in contrast to the quality of life in the primary dysmenorrhea group with back pain. Furthermore, according to the results of this study, the quality of life score varied among the studied groups based on bleeding volume, familial history of dysmenorrhea and pain in lower abdominal area without menstrual periods. Quality of life was better in people with a history of familial dysmenorrhea, which could be attributed to the fact that greater awareness of mother-daughter about how to deal with dysmenorrheal pain and the resulting quality of life is less affected by this disorder. In addition, the results of a study by Minalshowa Birok et al. (2017) indicated that people with medical education and health literacy were found to be more knowledgeable about the methods of coping with dysmenorrhea and those with non-medical education had not good attitudes toward dysmenorrhea (27). In addition, in a study by Palot et al., it was found that the daughters of mothers who have menstrual complaints also experience menstrual disorder because of observing and learning about menstruation from their mothers (9). The results of previous studies also have shown that there is a positive relationship between the severity of dysmenorrhea and familial history of dysmenorrhea due to modeling the behavior of girls from mothers and sisters as well as genetic factors (28). Perhaps having a family history of dysmenorrhea has led to an increasing maternal literacy in coping with dysmenorrheal problems and, consequently, the transfer of mothers' experiences to girls in how to cope with menstrual cramping, which makes their quality of life less affected. Therefore, the mean of quality of life in the primary dysmenorrhea group with low back pain and with a higher percentage of family history of dysmenorrhea may be greater than the group with primary dysmenorrhea without low back pain. In this study, the pain intensity is higher in the group with primary dysmenorrhea than in the group without back pain and a greater percentage of people have increased blood volume as well. These results are consistent with the results of a study by Habibi et al., showing that the pain intensity of dysmenorrhea is related to increased bleeding volume (29). On the other hand, the findings of a prospective study

on Chinese female students showed that dysmenorrhea is associated with severe bleeding. Additionally, the results of a cross-sectional study on Iranian women aged 16-56 suggested a positive correlation between bleeding volume and severity of menstrual pain (30). Therefore, it is likely that people with primary dysmenorrhea and low back pain have strongly followed their medical treatments and recommendations (using painkillers or analgesic) and health measures to cope with these complications, they are less likely to be affected by their daily routine. So the quality of life in this group is higher. The results also indicate that in comparison to the primary dysmenorrhea group with low back pain, a greater percentage of people in the primary dysmenorrhea group have no low back pain. The results also show that, in comparison with the primary dysmenorrhea group with low back pain, a greater percentage of participants in the primary dysmenorrhea group without low back pain experience lower abdominal pain in non-menstrual days.

Conclusion

Primary dysmenorrhea is described as common gynecologic complaint among adolescent females. The physical and mental health of the girls affected by primary dysmenorrhea and their quality of life decreases significantly resulting in disruption in their everyday life activities. Therefore, it is suggested that researchers and providers of health services consider dysmenorrhea as an important health issue in women and take some measures towards designing appropriate interventional studies to reduce the factors affecting dysmenorrhea. It is also advisable that increasing information on how to deal with this disorder is included in the education programs for the education of girls and mothers so that the disorder is less affected by the daily lives of individuals.

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