Research Journal of Medical Science

# Assessing the Severity of Dysmenorrhea in High School Female Swimmers and Non-Swimmers in Yazd 2011-2012

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**Key words:** Dysmenorrhea, menstrual period, treatment of dysmenorrheal, swim, treatment

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Page No.: 126-129
Volume: 8, Issue 5, 2014
ISSN: 1815-9346
Research Journal of Medical Sciences


**Abstract:** Dysmenorrhea is a common problem in young women. Although, dysmenorrhea is not life threatening, it can have adverse effects on quality of life. Various treatments are offered for dysmenorrheaincluding exercise and keep the body warm. This study examines dysmenorrea in female swimmers and non-swimmers. In this descriptive comparative trial, 200 female students who suffered from primary dysmenorrhea were recruited to the study at YAZD girls high school. They filled a questionnaire including demographic characteristics and the pain measurement chart (duration and severity). Then, they were divided intothree groups: low, moderate and severe dysmenorrhea groups. Data were analyzed and using t-student, chi-square and variance analysis tests in SPSS Software. The age of the students ranged 16±1.2 years old. The severity of pain was 7.3±1.3 in swimmer group and 7.8±1.5 in non swimmer group ($p<0.001$). The severity of dysmenorrhea was mild, moderate and severe, respectively in 58, 28 and 14% swimmers group and 9, 26 and 65% in non swimmer group. The mean of painful menstrual days in swimmers group 92% in first day, 5% in the first 2 days and 3% in 3 days and in non swimmers group 24% in first day, 54% in first 2 days, 15% in 3 days and 7% inall of days reported pain. Swim significantly reduces the duration and severity of pain in patients with primary dysmenorrhea is. It canbe used as an alternative treatment method in affected women.

## INTRODUCTION

Dysmenorrhea is the painful menstrual cramps which occur at the beginning or shortly before the beginning of menstruation. About 80% of women experience the levels and times of itduring their reproductive stages. Most cramps are not so severe tomake the patient hospitalized but in 10% of cases it can make her to leave her woks and activities and have social and financial losses (Juli and Jolin, 2003).

**Primary dysmenorrhea:** It usually begins before the age of 50 and almost always 6-20 months after the first menstruation. If the pain begins 3 years after the first menstruation or if the menstruation occurs without menstrual cycles, the secondary causes should be considered. Usually, pain starts a few hours before or simultaneously with menstrual bleeding and takes 2 or 3 days. Pain is more below the navel. Sometimes pain is released to the lower back, groin and thigh. Other symptoms like nausea, vomiting, anorexia, diarrhea, fatigue, irritability and sometimes headache can occur. Early menstruation may improve with the increase of age and vaginal delivery. This disease is also more common in the women whose mothers suffered this pain (Barnard *et al*., 2000). Primary dysmenorrhea causes ovulation and uterine secretion that may affect the uterus and causes contractions of the uterine wall, ischemia and pain (Speroff and Fritz, 2005).

- For the treatment of primary dysmenorrheal, severalmethods have been suggested: analgesics such as aspirin and acetaminophen
- Non-steroidal anti Anflamatvar such as ibuprofen, naproxen and mefenamic acid
- Combined ocp and cervical dilation in extreme and severe stages
- Using the IUDs with progestin
- Exercise and keeping warm the belly and lower back and using hot water bag
- Electrical stimulation of nerves in the lower back and belly
- Using the dietary supplements such as calcium, magnesium, vitamin E, C, B1 (Dawood, 2010)

Doctor “Robert Rogers”, the physiologist and manager of the Sports Lab at the University of New Mexico, believes that swimming is beneficial for everyone, especially, those who have physical limitations and are not able to do the other exercises. Doctor Robert added that: “Swimming is a sport in which all the muscles are used and patients can greatly reduce their pain. Researchers examined many of the patients with bone, joint and even muscle pains. Consequently, they made one group to do exercise one hour a day under the supervision of a sport expert and continued it for 8 months. Another group did the exercise such as stretching and aerobic exercise and then swam in the hot water for an hour a day and three times a week. Finally, the members of the second group were largely calm and their pains were soothed. It is interesting that the second group achieved health not only about this particular disease but also about the overall condition of the body. Researchers believe that patients with physical pain are better to do exercise movements to warm their body and then swim in warm water to help their health rather than using the Analgesics. The main treatment of dysmenorrhea is non-steroidal anti-inflammatory which prevents Prostaglandin synthesis in order to reduce the menstrual cramps but is not acceptable due to complications, especially, gastrointestinal side effects (Wilson *et al*., 2002). This is while swimming can improve pain without side effects. For this reason, the researcher decided to examine the severity of dysmenorrhea in female swimmers and non-swimmers.

## MATERIALS AND METHODS

This study is descriptive comparative and was conducted o evaluate and compare the severity of dysmenorrhea in high school female swimmers and non-swimmers in Yazd. The population included 200 swimmers and non-swimmers of high schools in Yazd that had the inclusion criteria. The samples were selected using the convenience sampling method and were placedin the two groups (n = 100 swimmers and n= 100 non-swimmers). Inclusion criteria in swimmers group include: having consent for participating in the study, the age between 14-18 years, having regular menstrual cycles and the lack of medical problem, avoiding the use of herbal or chemicals medicines to reduce dysmenorrhea, and swimming at least twice a week and in the non-swimmer group having consent for participating in the study, the age between 14-18 years, having regular menstrual cycle and the lack of medical problem, avoiding the use of herbal or chemicals medicines to reduce dysmenorrhea and the having no experience of swimming since the first menstruation ever. After sample selection based on the inclusion criteria, the necessary explanations for the confidentiality of information, objectives, procedures and duration of the study was given to them; then a questionnaire that included demographic characteristics and the figure of the severity and duration of pain from previous studies (...) was designed and its content validity was evaluated and given to them. They were asked to complete it during dysmenorrhea. To determine the validity of the research, a re-test was performed. Thus, 10 people similar to the study samples were given two questionnaires to fill out within a week and the correlation coefficient was determined as 094 using the statistical analysis. In this study, the participants in the study were taught to write down the painful days during each menstrual period and mark the figure of the severity of pain in the questionnaire during the period in terms of pain intensity and also mark the peak pain intensity on a ruler. Then, the status of dysmenorrhea was measured using the same

questionnaire, pain ruler, visual analog scale and verbal multidimensional scale. The score of 0-4 was considered as mild dysmenorrhea, the score of 4-7 was considered as moderate dysmenorrhea and the score of 7-10 was considered as severe dysmenorrhea.

Information obtained from questionnaires was analyzed by chi-Square and t-student tests in SPSS statistical software.

## RESULTS AND DISCUSSION

Results showed that the average age of the research sample was 16_+1/2. Mean pain intensity in swimmers was 7/3±1/3 and non-swimmers was 7/8±1/5 that showed ($p<.001$) significant difference.

Among the subjects in the swimmer group, 14% had severe dysmenorrhea, 28% had moderate dysmenorrhea and 58% had mild dysmenorrhea (Fig. 1). While in the non-swimmer group, 65% had severe dysmenorrhea, 26% had moderate dysmenorrhea and 9% had mild dysmenorrhea ($p<0.004$) (Fig. 2). In terms of the painful days, in the swimmer group 92% had pain only in the first day and 5% had pain in the first and second days and only 3% had in the first day and in days 4-7 none of the subjects reported pain. While in the non-swimmer group, 24% had pain only in the first day and 54% had pain in the first and second days, 15% had pain in the first 3 days and 7% reported pain in all the days of their period (Table 1).

The findings of this study showed that 14% of subjects in the swimmer group and 68% of subjects in the non-swimmer group reported severe dysmenorrhea. In terms of the painful days, in the swimmer group only 8% reported pain for more than a day, while in non-swimmer group 76% reported pain more than one day in their menstrual cycle. In general, there are many treatments for dysmenorrhea such as pharmacological methods including oral contraceptives and nonsteroidal antiinflammatory drugs; non-pharmacological methods including exercise, keeping warm the belly and lower back with hot water bag, electrical stimulation of the nerves in back and belly and lower back, dietary supplements including the use of calcium and magnesium, herbs, vitamin C, vitamin B, vitamin E and the inhibitors of prostaglandin production (Dawood, 2006). Synthetic drugs have side effects, especially in long-term prescriptions. Nausea, stomach irritation, peptic ulcers, renal papillary necrosis, and decreased blood flow are the side effects of the inhibitors of prostaglandin production. On the other hand, the young girls do not often tend to use hormonal factors to reduce pain (Ryan *et al*., 2007). Today, due to the side effects of chemical drugs, it seems that doing exercises like swimming can be effective in improving this pain.

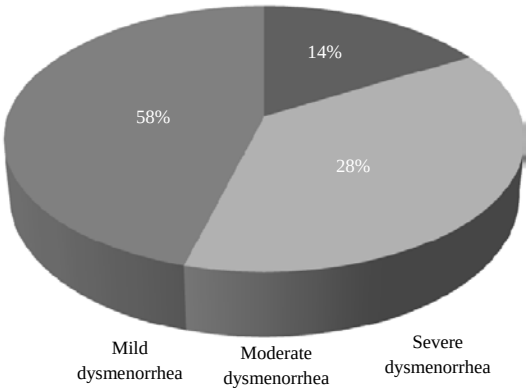


Fig. 1: Comparing the mean and standard deviation of primary dysmenorrhea in the swimmer group

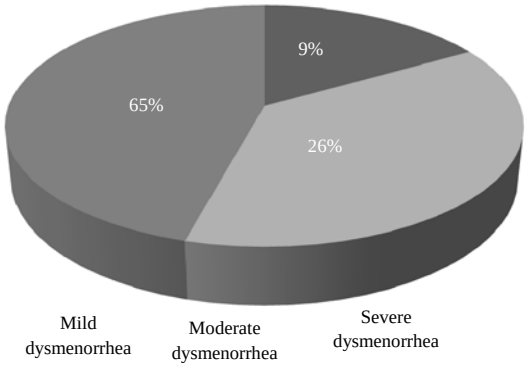


Fig. 2: Comparing the mean and standard deviation of primary dysmenorrhea in the non-swimmer group

Table 1: Frequency distribution of the number of painful days due to dysmenorrhea among the two groups of female swimmers and non-swimmers

| | Swimmer group | | Non-swimmer group | |
|---|---|---|---|---|
| Time | Number | Percentage | Number | Percentage |
| **Frequency the number of painful days** | | | | |
| First day | 92 | 92 | 24 | 24 |
| First and second days | 5 | 5 | 54 | 54 |
| First, second and third days | 3 | 3 | 15 | 15 |
| All days of the menstrual cycle | 0 | 0 | 7 | 7 |
| Total | 100 | 100 | 100 | 100 |

## CONCLUSION

Unfortunately, no research has been done on the effect of swimming in improving the menstrual pain, thus the researcher cannot compare this study to other studies. It is hoped that the present study will be a start for the other studies in this regard.

## ACKNOWLEDGEMENT

Hereby, I would like to thank all those who helped the researcher to perform this research.

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