The effect of self-management intervention on the quality of life among women with endometriosis

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Abstract---Background: Endometriosis is a painful, chronic, and inflammatory disease that is characterized by the growth of endometrial-like tissue outside uterus that affects approximately 190 million women in the world. Aim of the study to evaluate the effect of self-management interventions on the quality of life among women with endometriosis. Design: Quasi experimental design was used to achieve the aim of the study (pre-post test). Setting: The current study was conducted at the outpatient clinic for obstetrics and gynecology at El Mansoura Health Insurance Hospital, Dakahlia Governorate, Egypt. Sample: A convenience sample composed of 40 women suffering from endometriosis was included in the study. Tools: four tools for data collection Tool I: A structured interviewing questionnaire included two parts (socio-demographic characteristics – obstetric and gynecological history) Tool II; Numerical rating scale (NRS), to measure the severity of pain symptoms associated with endometriosis. Tool III; Endometriosis Health Profile Questionnaire, to determine wellbeing quality of life of endometriosis female. Tool IV; Self-management interventions, include: (physical activity - sleep -exercise -mood -dietary choices -medication). Results: The majority of the studied women with endometriosis had severe pain at pre intervention in compares to one fifth of studied women post intervention. The result showed that higher mean of quality of life in post intervention comparing with pre intervention. Conclusion: Self-management interventions had highly positive significant effect with a remarkable improvement in the quality of life of women with endometriosis and a decrease in the pain level. Positive correlation
between the total quality of life score of the studied women and self-management intervention at pre and post intervention (P< 0.001) study supported of the researcher hypothesis. Recommendations: Raising awareness for women diagnosed with endometriosis through applied self-management intervention for large sample another population of women to improve quality of life and reduce pain.

**Keywords**---self-management interventions, quality of life, endometriosis.

**Introduction**

Endometriosis is an enigmatic disease that affects about 10% of women in reproductive age. Endometriosis is strongly associated with significant impairment of quality of life in all aspects, including sexual function, work and social relationships. (Della Corte Letal.,2020). Causes of endometriosis include: menstrual cycle factors as early onset of menstruation, heavy or painful periods, short menstrual cycles (less than 27 days) and long periods (more than one week), also allergies – such as food, family history of endometriosis, moreover exposure to toxins & environmental pollutants which contribute to the development of endometriosis (Seckin, 2020). Self-management is an effective technique given to counselees who are learning to practice new skills, so they can manage themselves, reduce dependence on outsiders and teach counselees to become managers for themselves. Self-management techniques are techniques that have emerged as effective approaches to improve good behavior. (Diana et al., 2020).

**Significant of the study**

Endometriosis affects 7.0 and 15.0% of women of childbearing age, including between 30.0% and 50.0% of infertile women and almost 50.0% of women with chronic pelvic pain syndrome because a clear diagnosis can only be made after a laparoscopy (Soliman et al., 2021).

**Subject and method**

This study aimed to evaluate the effect of self-management Interventions on the quality of Life among women with Endometriosis through the following objectives;

1) Assess quality of life and severity of pelvic pain for woman.
2) Apply self-management intervention by design booklet.
3) Evaluate the effect of self-management intervention.

**Research Hypothesis**

Application of self-management interventions will improve the quality of life among women with Endometriosis.
Research Design

- A quasi-experimental research design was used in the current study. Is an empirical study used to estimate the casual impact of an intervention on its target population without random assignment.

Setting

- The study was conducted at the obstetrics and gynaecological outpatient clinic at El Mansoura Health Insurance Hospital, Dakahlia Governorate, Egypt.

Subjects

Type of sample

A convenience sample was used to conduct this study.

Sample Size

A sample composed of 40 women suffering from endometriosis

Tools of data collection

Four tools were used as the following:

- Tool I: A structured interviewing questionnaire:
  A structured interview questionnaire sheet was developed by the researcher after reviewing, the related literature (Taylor et al, 2017), and was written in simple Arabic language, to suit the level of understanding of the studied women and served to assess the following:
  Part one: Socio-demographic characteristics of the studied women included age, level of education, place of residence, job and marital status.
  Part Two: Obstetrics and gynecological history: as gravidity and parity, menstrual history, number of abortion (As age of menarche and cycle length and gynecological history (as abnormal uterine Bleeding, ovarian cysts, history of ovarian cystectomy and uterine fibroid).

- Tool II: Numerical rating scale (NRS): the scale is adopted from (Posadzka et al., 2015) to measure the severity of pain symptoms associated with endometriosis. Women requested to describe the severity of current pain symptoms of endometriosis were, show no pain and indicate the worst possible pain. The scale composed of (5) items (chronic pelvic pain, dyspareunia, dysuria, types of endometriosis, and stages of endometriosis) have translated to Arabic language. First3 item was scored by one for a «Yes» answer, two for a «No» answer, item number 3contain tow point and the fifth item contain three points.

- Tool III: Endometriosis Health Profile Questionnaire (Quality of Life) adopted from "Jones et al., 2001" Endometriosis Health Profile -the researcher has translated it to Arabic language to determine wellbeing quality of life of endometriosis female over last 4 weeks. The Core EHP-30 items apply to women suffering from endometriosis, which includes 30 items in five
dimensions; pain (11 items)such as avoid social event ,difficult to sitting ,walking, and exercising , control and powerlessness (6 items)such as generally unwell ,symptoms no better , social support (4 items)such as unable to tell people feeling ,people don’t understand , emotional well-being (6 items)such as felt depressed ,felt weepy ,had mood swing , and self-image (3 items)such as unable to wear clothes of choice, appearance has been affected ,lacked confidence .

- Tool IV: Self-management interventions: it is adapted from (Armour et al., 2019) Tool consists of 6items (physical activity ,sleep ,exercise ,mood, dietary choices-medication). The domains were translated to Arabic language first item about usual activity have 4-point such as have problem in doing usual activity (work, study, house work), second domain for mood have 3-point such as( bad ,swing, good), and other domain about sleep, exercise, medication have 2point. The intervention tool consisted of 13 questions such as (usual activity, dietary status, mood, sleep regulatory, make exercise, take medication).

Validity

The revision of the tools was done by a panel of three experts in filled Maternity and Newborn Health Nursing from Helwan University to measure the content validity of the tools and the necessary modification were made according to the panel judgment to ensure sentences clarity and content appropriateness

Reliability

Testing reliability of proposed tools was done by Cronbach’s alpha test through SPSS computer program.it was 0.86 for tool I "structure interview and questionnaire sheet ",0.82 for tools II "numerical rating scale ",0.87 for tool III "endometriosis health profile questionnaire (quality of life),0.79 for tools IV "self-management intervention ". Which indicate that the four tools were reliable to detect the objectives of the study.

Pilot study

- A pilot study was carried out on 10 % of the study subject (4 women) to test clarity, applicability of data collection tools. The subjects in the pilot study were included from the study. Regarding reliability, the study tool was tested by Cronbach’s Alpha which was 0.98 for Quality-of-life questionnaire and 0.96 for Self-Management questionnaire.

Result

Table (1): Distribution of studied sample with endometriosis regarding socio-demographic characteristics (no=40)

<table>
<thead>
<tr>
<th>Variables</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age years:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 : 30</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td>31 : 40</td>
<td>23</td>
<td>57.5</td>
</tr>
</tbody>
</table>
Table (1) reveals that, more than half (57.5%) of the studied women with endometriosis aged between 30 : 40 with Mean ± SD = 33.75 ± 6.83. The majority (85%) of them were married and about half (52.5%) of them married from ten to twenty years with Mean ± SD = 12.87 ± 6.33, while only (2.5%) of them were divorced. In addition, less than half (45%) of them had secondary education level. Regarding their occupation, more than two thirds (67.5%) of them were housewives and half (50%) of them demonstrated that their income just meet life expenses.

Table (2): Distribution of studied women with endometriosis regarding menstrual history (no=40)

<table>
<thead>
<tr>
<th>Menstrual history</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age of menarche:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 12</td>
<td>16</td>
<td>40</td>
</tr>
<tr>
<td>12 – 14</td>
<td>14</td>
<td>35</td>
</tr>
<tr>
<td>&gt; 14</td>
<td>10</td>
<td>25</td>
</tr>
<tr>
<td><strong>Mean ± SD</strong></td>
<td></td>
<td><strong>11.35 ± 0.48</strong></td>
</tr>
<tr>
<td>Menstrual cycle interval:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 &lt; 28 days apart</td>
<td>4</td>
<td>10</td>
</tr>
<tr>
<td>28 &lt; 35 days part</td>
<td>31</td>
<td>77.5</td>
</tr>
</tbody>
</table>
Regarding menstrual history of the studied women with endometriosis. Table (2) portrays that, more than two thirds 65% of the women their age of menarche started between 11 ≤ 12 years with mean 11.35 and SD 0.48 and more than two thirds (77.5%) of them had menstrual cycle interval ranging from 28 < 35 days part as well less than two thirds (62.5%) of them revealed that it lasts from ≥ 3 < 7 days. Regarding symptoms associated with menstruation, less than half (45%) of the studied women with endometriosis reported that they suffer from pain and anxiety together as well as about (25%) of them suffer from pain, anxiety and vomiting together.

![Figure (1): Distribution of total score of the studied woman with endometriosis regarding pain pre and post intervention (no = 40).](image-url)
Figure (2): Distribution of characteristics of the problems during doing usual activities pre and post intervention (no = 40).

Table (3): Distribution of total mean quality of life for studied women pre and post intervention (no = 40)

<table>
<thead>
<tr>
<th>Z</th>
<th>Items</th>
<th>Pre</th>
<th>Post</th>
<th>T-Test</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Pain</td>
<td>10</td>
<td>11</td>
<td>8.909</td>
<td>0.000*</td>
</tr>
<tr>
<td>2</td>
<td>Control and powerlessness</td>
<td>5</td>
<td>6</td>
<td>7.034</td>
<td>0.000*</td>
</tr>
<tr>
<td>3</td>
<td>Social support</td>
<td>2</td>
<td>4</td>
<td>8.016</td>
<td>0.000*</td>
</tr>
<tr>
<td>4</td>
<td>Emotion</td>
<td>5</td>
<td>6</td>
<td>6.550</td>
<td>0.000*</td>
</tr>
<tr>
<td>5</td>
<td>Self-image</td>
<td>2</td>
<td>3</td>
<td>6.553</td>
<td>0.000*</td>
</tr>
<tr>
<td></td>
<td>Total Quality of life</td>
<td>24</td>
<td>30</td>
<td>7.948</td>
<td>0.000*</td>
</tr>
</tbody>
</table>

*Significant (P<0.05)

Regarding the total mean quality of life pre and post intervention. Table (3): showed that the Mean ± SD of total quality of life for women with endometriosis pre-intervention was (39.17±12.33) while, post-intervention it was (53.52±9.97) in addition there were a statistical significance regarding all domains of quality of life (pain, control and powerlessness, social support, emotion and self-image) at P-value (0.000*).

Table (4): Mean total self-management intervention among studied women pre and post intervention (no = 40)

<table>
<thead>
<tr>
<th>Items</th>
<th>No. of items (Score)</th>
<th>Pre</th>
<th>Post</th>
<th>T-Test</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical activity</td>
<td>5 (1-10)</td>
<td>5</td>
<td>8</td>
<td>3.365</td>
<td>0.002</td>
</tr>
<tr>
<td>Sleep</td>
<td>1 (1-2)</td>
<td>1</td>
<td>2</td>
<td>5.469</td>
<td>0.000*</td>
</tr>
<tr>
<td>Exercise</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>4.837</td>
<td>0.000*</td>
</tr>
</tbody>
</table>
Table (5): showed that there is statistically significant relation between total self-management intervention among studied women with endometriosis pre and post intervention at p-value (0.000*).

Table (6): Correlation between total quality of life score and total self-management intervention pre and post intervention (no = 40)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Total quality of life score of the studied subjects pre and post-intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pre (R)</td>
</tr>
<tr>
<td>Self-Management Intervention</td>
<td>0.214</td>
</tr>
</tbody>
</table>

*Significant (P<0.05)

Table (14): portrays that there is statistically significant relation between the total quality of life score of the studied women and self-management intervention at pre and post-intervention at P-value (0.000*). The results revealed that there is a positive correlation between studied variables among studied women post-intervention. There is a positive correlation between the total quality of life score of the studied women and self-management intervention at post-intervention (p = 0.000*).

**Discussion**

Endometriosis is an estrogen dependent gynecological disorder that affects at least 10% of women of reproductive age. Endometriosis causes long-term chronic pelvic pain, dysmenorrhea, severe dyspareunia, infertility and pelvic-organ dysfunction. Endometriosis profoundly impairs the quality of life of the women with a negative impact on social and family life (Méar et al., 2020). Regarding demographic characteristics the findings of the current study revealed that nearly two third of the studied women aged between 31: 40 years. The present study findings were partially agreement with Abd El- Kader et al., (2019) who conduct study on the impact of adhesions associated with endometriosis on quality of life among infertile women, conducted at Zizag University Hospitals, in Egypt and
reported that mean age of cases was more two third . This similarity could be justified by both studies carried out at the same community.

The result of the current study disagreed with (Sayed et al., 2018) who studied "effect of an educational intervention on quality of life in women with Endometriosis, in Benha, Egypt" indicated that the mean age of the study and control groups was nearly two third of studied is (27:41) years respectively. This finding might be due to the delay in the diagnosis in young women as a result a large proportion of women with the disease may be asymptomatic, which may lead to an underestimation in the number of cases, the diagnosis can be definitively made only by direct visualization during laparoscopy or laparotomy and culturally, the pain symptoms related to periods are usually considered natural where women are often taught to view severe pain during menses as normal so that they do not seek the medical care.

As regards education, less than half of the studied women were secondary educated. This finding agree with (Sayed et al., 2018) indicated that the mean age of the study and control groups was less than two third of both group have secondary education. This finding is partially disagreed with Armour et al., (2020) who studied “Endometriosis and chronic pelvic pain have similar impact on women” in Australia, but time to diagnosis is decreasing: an Australian survey.” The researcher point of view that the majority of the study participants had secondary education.

The results of the present study showed that the more than half of the study women were married and housewives. This results was in accordance with Metwally & Desoky, (2018) who studied “Improving the quality of life among women with endometriosis: an intervention study” in Egypt and reported that more than three-quarters of the studied sample were married and more than half of them were housewives. This similarity could be justified as this study and the study of Metwally & Desoky, (2018) were carried out in the same community. This may be attributed to the nature of rural sanitation and it was shameful to discuss the issues related to their reproductive organ among them.

The results of the present study showed that half of studied women that had income just meet life expenses. This disagree with (Sayed et al., 2018) indicated that more than three quarters of both groups had no enough income monthly. From the researcher opinion, the difference between the study related to difference of financial of each community. As regarding menstrual history of studied women for age of menarche, the result of current study showed that less than 12 years act more than one third of the studied women while, nearly one third were between 12-14 year and the least age were more than 14 years. This is not following the statement of Wei et al., (2020) that conducted study on length of menstrual cycle and risk of endometriosis, in (United States) where women with menarche at an early age, will first receive hormonal changes that can increase the risk of endometriosis. From the researcher opinion, the difference between studied related to difference community that lead to change of body builds that effect on time of start of menstruation.
The current study showed that the mean score of total Endometriosis Health Profile (EHP) showed impaired the quality of life regarding the physical aspects before the implementation of the self-management interventions between among studied women with a statistically significant difference in terms of (pain, control and powerlessness, social support, emotion and self-image). This may be rationalized as women with endometriosis suffer painful symptoms that impact their quality of life. This was in congruence with De Graaff et al. (2019) who conducted a study in London entitled "The significant effect of endometriosis on physical, mental and social wellbeing: results from an international cross-sectional survey". report that chronic pain and dyspareunia had a negative effect on both the physical and mental aspects of quality of life.

Also, Fonseca et al. (2018) investigated "Interrelationships among endometriosis related pain symptoms and their effects on health-related quality of life: a cross-sectional observational study" in Brazil and they indicated that the existence of symptomatic endometriosis affects the women physically, psychologically, and adversely affects the quality of life in relation to health. Researcher opinion that the symptoms of endometriosis effect on life and need assist to professional person.

The mean total score of endometriosis health profile EHP was significantly relation among the studied women after intervention compared to before, which indicates better quality of life post intervention. This was supported by Moradi et al. (2018) who conducted a study in Australia and pointed out that the impact of endometriosis is worsened due to a lack of understanding of the disease. A better understanding of the long term and wide-ranging impact of endometriosis on women’s lives at different life stages could benefit in reducing the negative impact of endometriosis and improving the women’s life experiences. Regarding usual activist pre and post intervention the result of the current study demonstrated that, the majority of studied women had problem during doing usual activates. This problem improved and decreased to nearly two third post intervention.

According to (Mirzaee and Ahmadi(2021) conducted in "Overview of the Effect of complementary Medicine on Treating or Mitigating the Risk of Endometriosis" in Iran Steady physical activity reduces insulin resistance and hyper insulinemia may increase the concentration of estrogens by lowering the concentration of SHBG and increasing the concentration of insulin-like growth factor-1 (IGF-1), which can stimulate endometrial cell proliferation by lowering the concentration of insulin-like growth factor-1 binding protein 1 (IGFBP-1). They added that Regular physical exercise seems to protect against inflammatory processes and oxidative stress, since it increases systemic anti-inflammatory cytokine levels.

That similar as (E.Ricci et al., 2020) "Physical activity and endometriosis risk in women with infertility or pain. Systematic review and meta-analysis" pointed that is possible that the protective effect of exercise in patients with endometriosis result from the fact that women who suffer from endometriosis do not feel well enough to practice exercise. The opinion of research that women wanted to be healthier by change life style from diet exercise. Regarding self-management intervention the current study showed that there is statistically significant
relation between sleep regulatory, make exercise, take medication and intervention among studied women with endometriosis pre and post intervention.

Previous findings also, supported with (EL Sayed & Aboud, 2018) which included non-pharmacological management strategies for relieving endometriosis-related pain symptoms such as frequent rest periods, application of heat to the lower abdominal, massage, regular physical exercise by walking three times per week for 15-30 minutes, and healthy diet for endometriosis. This result was consistent with (Moradi et al. (2018) who conducted a study in Australia entitled “Impact of endometriosis on women’s lives: a qualitative study” and pointed out that lifestyle changes such as exercise, diet, and sleep are used for the management of endometriosis-related pain symptoms lead to improvement of majority of sample and pain could be controlled.

**Conclusion**

Based on the finding of the current study that assessed the effect of self-management intervention on the quality of life among women with endometriosis. Self-management interventions had a highly positive significant effect with a remarkable improvement in the quality of life of women with endometriosis and a decrease in the pain level.

**Recommendations**

Based on the finding of the current study, the following recommendations were suggested

- Women with endometriosis should be given instructional booklets in order to raise understanding of self-management interventions
- Offer health education services to raise awareness among undiagnosed women about the signs of endometriosis in order to ensure early diagnosis of the disease.

**Recommended for further**

- Raising awareness for women diagnosed with endometriosis through applied self-management intervention for large sample on other population to improve quality of life and reduce pain.

**References**


