

Emotional Intelligence and Quality of Life Among Women with Polycystic Ovary Syndrome: An Educational Program

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ABSTRACT

Background: Nurses are at the forefront of health care, who play a vital role in the care of women with polycystic ovary syndrome, providing education, support, and guidance to help them manage their condition and improve their quality of life. Women with Polycystic Ovary Syndrome (PCOS) often face challenges, such as infertility and sexual dysfunction, which can strain marital relationships and further reduce quality of life. **Objectives:** Find out the impact of emotional intelligence educational program on quality of life among women with polycystic ovary syndrome. **Methods:** A randomized control trial (R.C.T). was applied. Total sample of 102 married women at the reproductive age (18-45) years old diagnosed with PCOs. For data collection, using three tools, a structure Interview questionnaire, quality of life tool and emotional Intelligence tool. First assessed and reevaluated after 6 and 12 months of providing the educational program to studied women which covering the theoretical and practical information. **Results:** The mean age in the study group was (30.61 ± 4.98) years old and control group was (32.06 ± 4.34) years old majority of women in both group have irregular menstruation (70.6%, 80.4%), there was highly statistically significance difference between control and study group in post-test and follow up (p -value =0.031, 0.001) respectively following program implementation, and there was positive correlation between quality of life and emotional intelligence. The quality of life of women is statistically significantly impacted by irregular menstruation and infertility pre, post and following program implementation. **Conclusion:** It was concluded that educational programs about emotional intelligence effectively improve the negative effect of PCO on women's quality of life and have helpful influence in adverse domain of quality of life. Upgrading women's knowledge toward lifestyle modification and enhancing service training program in the field of emotional intelligence for women and nurses.

Keywords: Educational Program; Emotional Intelligence; Polycystic Ovary Syndrome; Quality of Life

INTRODUCTION

Nursing care for patients with PCOS involves a comprehensive approach to address both the physical and psychological aspects of the condition. Nurses play a pivotal role in assessing symptoms such as irregular menstruation, hirsutism, and acne while simultaneously evaluating the psychological impacts, including anxiety and depression, which are commonly associated with PCOS (Hakami *et al.*, 2024).

PCOS is a common endocrine disorder in reproductive age women affecting 20% of the women population globally (Rushinaidu *et al.*, 2023). And is a reproductive, metabolic, and psychological condition with impacts across the lifespan (Joham *et al.*, 2022; Zheng *et al.*, 2025). The fundamental hallmark of the syndrome is polycystic ovarian morphology, and clinical features related with it include hirsutism, oligo- or anovulation, and hyperandrogenism. Based on genetic studies, obesity is a cause of PCOS (Zhao *et al.*, 2020).

Cardiovascular illness, type 2 diabetes, and infertility are comorbidities linked to PCOS (Singh *et al.*, 2023). Dissatisfaction with one's own appearance, low self-esteem, and a sense of sexual unattractiveness generate prolonged psychological distress, mood disorders, and problems in the connection with a partner (Castelo & Naumova, 2020), with a significant impact on several domains of quality of life (Dapas & Dunaif,

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2022). Raising awareness about PCOS is an essential component of nursing responsibilities, aimed at empowering patients and educating the broader community (Hakami *et al.*, 2024).

Quality of life (QoL) for people with chronic diseases encompasses physical state, psychological health, level of independence, social ties, personal views, and their relationship to major characteristics of their environment (Marafioti *et al.*, 2024). Married women with PCOS often report lower QoL compared to unmarried women, particularly in domains such as emotional well-being and sexual satisfaction. This may be attributed to the added pressures of marital life, including infertility and sexual dysfunction, which are common among women with PCOS (Hamed & Abbas, 2024).

PCOS has a negative impact on an individual's quality of life since it causes physical, psychological, and metabolic disorders. These women are 50 percent more likely to develop psychiatric problems such as bulimia, schizophrenia, and bipolar disorder (Istiqomah *et al.*, 2023). In 2018 and 2020, according to worldwide recommendations released psychological comorbidities such as depression, anxiety, and poor quality of life should be evaluated and included in PCOS management, especially when obesity or overweight is present (Simon *et al.*, 2023). Weight loss through lifestyle modifications has a positive effect on reproductive function regarding menstrual regularity and hormonal results (Mansour *et al.*, 2023).

Emotional intelligence (EI) is often utilized to facilitate the best thinking about feelings and thoughts, as well as to settle and integrate conflict (da Silva, 2025). Emotional intelligence is a concept that has emerged as a result of the intentional combination of emotion and the thought that effective emotional self-regulation can aid in the management of psychological suffering. Emotional intelligence training can help people develop the abilities they need to be more resilient and achieve positive life changes (Andres, 2025).

Effective emotional self-regulation and counseling may be beneficial for women with PCOS which can help in manage psychological distress, their mental health and overall quality of life. Studies indicate that the women with PCOS may exhibit higher character strengths like hope and judgment, they also face challenges in emotional regulation and coping strategies (Ghazeeri *et al.*, 2022; Al Maghaireh *et al.*, 2025). Nurses play a vital role in educating women with PCOS, empowering them to manage their condition effectively. Through nurse-led health education, support groups, and advocacy for early diagnosis and prevention, nurses can significantly improve the quality of life for women with PCOS (Duhan *et al.*, 2024).

Significance of the Study

PCOS prevalence is increasing rapidly worldwide and affecting approximately 2.2% to 26% of women. The high prevalence was attributed to PCOS association with obesity, sedentary lifestyle, and genetic predisposing factors (Rassie *et al.*, 2023). In Egypt, the prevalence of PCOS is approximately estimates ranging from 16 % to 37.5% (Al Anwar *et al.*, 2022). Polycystic ovary syndrome has a negative effect on quality of life that affect physiological domain as obesity and facial hair, psychological domain as dilemma, anxiety and can cause psychological morbidity, social domain including deterioration in the women's self-esteem and self-image (Eyupoglu *et al.*, 2022).

The relationship between EI and quality of life is consistently positive, indicating that higher emotional intelligence correlates with improved life satisfaction and well-being. A meta-analysis of 25 studies revealed a significant positive correlation between EI and quality of life, suggesting that individuals with higher EI tend to report better life satisfaction (Rahmadi *et al.*, 2024). Its significance lies in the ability to understand and manage emotions, which improves patient interactions, fostering empathy and effective communication, which strengthens the therapeutic alliance (Kulibaba & Kobylanskyi, 2024). So, the researcher conducts the study which directly link psychological resource of emotional intelligence were testing an actionable, non-pharmacological intervention to QoL experienced by women with PCO.

Aim of the Study

The aim is to study the impact of intelligence educational program on quality of life among women with polycystic ovary syndrome

Research Hypothesis

H1: Participation in an emotional intelligence educational program will significantly improve the quality of life among women with polycystic ovary syndrome compared to women who do not receive the program.

METHODOLOGY

Design: This study utilized A randomized control trial (R.C.T) to confirm or reject the Research hypothesis.

Setting: The study was conducted in the gynecological outpatient clinic and ART unit at Women's Health Hospital, Assiut University, Assiut city, Egypt.

Sample: The study included 102 women diagnosed with PCOS (51 in the study group and 51 in the control group). The sample size was calculated using G*Power software based on an assumed power of 0.80 ($1-\beta$) and a significance level (α) of 0.05

Randomization procedure: The participating women were randomly assigned in a 1:1 ratio to either group using a basic randomization technique that involved flipping a coin with two groups (control and study). Each woman's assignment was determined by the side of the coin (heads for control, tails for study).

Inclusion Criteria: Women at the reproductive age (18-45) and diagnosed with PCOS on the other hand exclude the women who refused to participate in the study.

Tools:

Tool I: A structure Interview Questionnaire

This tool was designed by the researcher after reviewing related literature and adapted from Goli *et al.*, (2021) and Orbetzova, (2020). It consisted of

- Personal data of the studied women included (code, age, residence, level of education, occupation, telephone number and family history). As well as anthropometric measurement involved body mass index.
- Gynecological and menstrual history: menstrual regularity and suffer from infertility.

Tool II: Polycystic Ovary Syndrome Quality of Life Questionnaire (PCOSQ)

The scale, adopted from (Abdelaziz *et al.*, 2023) composed of 55 questions with a three-point Likert scale. which covered the following 4 domains:

1. Domain (1): Physical functioning domain (21 questions)
2. Domain (2): Psychological functioning domain (17 questions)
3. Domain (3): Social functioning and personal relationships domain (12 questions)
4. Domain (4): Sexual functioning domain (5 questions)

Scoring System

The response of each question on PCOSQ was recorded on a 3-point scale in which score (1) represents no problem/none of the time "best function", score (2) represents some problems/some of the time, and score (3) represents severe problems /all of the time "poorest function". The total score of PCOSQ was classified into three levels as the following according to (Elsaied *et al.*, 2020):

Low score (< 50%) indicated a little impact of PCOS on women's QOL and was considered good QOL. **Moderate score (50% - < 75%)** indicated a moderate impact of PCOS on women's QOL and was considered average QOL. **High score ($\geq 75\%$)** indicated a severe impact of PCOS on women's QOL and was considered poor QOL.

Tool Validity and Reliability

The tool was evaluated for its content validity with a content validity index (0.8). Tool reliability was assessed by the researcher for testing the internal consistency of the instrument by measuring the related

Cronbach's alpha and its value was (0.924).

Tool III: Emotional Intelligence Questionnaire

Schutte Emotional Intelligence Test (SSEIT): The scale was developed by Schutte *et al.* (2009). It consisted of 33-items rated on a five-point Likert-type scale. There are six primary sections to the scale: Appraisal of others' emotions (7 items), Appraisal of own emotions (5 items), Regulation of emotions (5 items), Social Skills (5 items), Utilization of emotions (7 items) and Optimism (4 items).

Questions number 5, 28 and 33 were scored reversely. EI was regarded as high if the score was $\geq 75\%$ and Low if the score $< 75\%$

Tool Validity and Reliability: Five professors from Assiut University, Egypt's nursing and medical faculties evaluated the tool to ensure its face validity. After two weeks interval, the internal consistency and test-retest reliability of this scale have Cronbach alphas (α) of 0.90 and 0.78, respectively.

Pilot Study

The feasibility and usability of the study instruments were tested on 10 women, or 10% of the sample in a pilot study that was successfully finished in February 2024. The pilot study's sample was included in the main study after the collected data was examined. The information was largely assessed to lay the groundwork for the program sessions.

Procedure

1st Stage: Preparatory phase

Before beginning of the study, an official permission was allowed from the director of Woman Health Hospital prior to initiation of the pilot study and main research.

2nd Stage: The Planning Phase

Setting up the instruments for gathering data was carried out by researchers after extensive review of related literature. The educational program related to emotional intelligence was developed in form of booklet with using simple and clear Arabic language with clear illustration and figures based on demand and known requirements of women in the pilot study and the review of the updated national and international literature using the available resources. The educational program was revised by the panel of three experts, and the final modifications were made.

3rd Stage: Implementation phase

The researcher starts to collect the sample in March 2024. The researcher presented herself through face-to-face communication to the participated women and discussed the goals and nature of the study then got informed consent from them. The samples were divided into study and control groups where the data collected from them for three days weekly based on the randomization procedure, began at 9:00 am and ended at 1:00 pm in accordance with the outpatient clinic's timetable at the study setting until the sample size reached the target number.

Concerning the EI educational program, the researcher delivered the program to studied women in four sessions, one per week: by using different instructional strategies as group discussion, brainstorming, problem solving and critical thinking to suit the women's different needs and to achieve the intended objectives. Also copy of educational booklet was given to each woman as a supportive material. On the other hand, the women in control group were received routine treatment (care).

The following were the sessions:

1st session (45-60 minutes): The researcher obtained the personal data form each participated women such as age, their education, occupation and family history of PCOs also obtain the gynecological and menstrual history. Furthermore, the researcher took anthropometric measurements in family planning clinic at Women's Health Hospital. The pretest was conducted using the study questionnaire to assess their emotional intelligence and quality of life in the pre intervention. The researcher gave introduction to the program and its objectives, number of sessions and the duration of each session.

2nd session (20-25 minutes): The researcher discussed the definition of emotional intelligence, the importance of emotional intelligence, Reason for success: mental intelligence or emotional and the traits of a person with high emotional intelligence,

3rd session (20-25 minutes): Following a revision of the previous session, the researcher completed discussion about the components and skills of emotional intelligence, how to enhance emotional intelligence skills, how to become emotionally smart, and rules for developing emotional intelligence.

4th session: (15-20 minutes): After six months since the last sessions, the researcher conducts a posttest and offers a brief linguistic review of the material covered in the previous sessions, reinforcing the women's weak points to help them achieve the program's goals.

4th Stage: Evaluation Phase

Following program implementation, the researcher used the same questionnaire via phone and what's up messages or follow-up appointments at the outpatient clinic to conduct a reassessment (posttest) for all women after six and twelve months of sessions.

Data Analysis

The data were analyzed, categorized, and coded using SPSS software, version 26. Descriptive statistics were used to present the data, with frequencies and percentages for qualitative variables, and means and standard deviations for quantitative variables. Chi-square tests were performed to determine the significance between numerical variables. A p -value greater than 0.05 ($p > 0.05$) indicates no significance, while a p -value less than 0.05 ($p < 0.05$) indicates statistical significance.

Ethical Consideration

This study received ethical clearance from the Ethical Committee of Faculty of Nursing at Assiut University, Egypt with the reference number 1120230680 on 22nd October 2023.

RESULTS

Table 1 shows the personal data of the studied women reflects that the mean age in the study group was 30.61 ± 4.98 years old and the control group was (32.06 ± 4.34) years old. As regards to education, 37.3% of the women in study group had a bachelor's degree while in control group had secondary education. The highest percentage of women has family history of PCO in control group 39.2%. No significant difference in the study and control group ($p > 0.05$).

Table 1: Distribution of the Studied Women According to their Personal Data (n= 102)

Personal data	Study (n= 51)		Control (n= 51)		p-value
	No.	%	No.	%	
Age (years)					
Mean \pm SD	30.61 \pm 4.98		32.06 \pm 4.34		0.120
Residence					
Rural	22	43.1%	30	58.8%	0.113
Urban	29	56.9%	21	41.2%	
Educational level					
Basic education or less	14	27.4%	17	33.3%	0.081
Secondary education	18	35.3%	19	37.3%	
Bachelor's degree	19	37.3%	15	29.4%	
Occupation					
Working	22	43.1%	19	37.3%	0.545
Housewife	29	56.9%	32	62.7%	
Body mass index (BMI)					
Mean \pm SD	27.64 \pm 4.47		28.69 \pm 5.32		0.064
Family history of polycystic ovary					
Yes	14	27.5%	20	39.2%	0.208
No	37	72.5%	31	60.8%	

Statistically significant difference p value < 0.05

Table 2 revealed that the majority of women in both groups have irregular menstruation (70.6%, 80.4%). As regards infertility, the highest percentage of women has primary infertility in the study and control groups (52.9%, 47.1%) respectively.

Table 2: Distribution of the Studied Women According to their Gynecological and Menstrual History (n= 102)

Gynecological and menstrual history	Study (n= 51)		Control (n= 51)		p-value
	No.	%	No.	%	
Menstrual regularity:					
Regular	15	29.4%	10	19.6%	0.250
Irregular	36	70.6%	41	80.4%	
Infertility:					
No infertility	8	15.7%	5	9.8%	0.262
Primary	27	52.9%	24	47.1%	
Secondary	16	31.4%	22	43.1%	

Statistically significant difference p value<0.05

Figure 1 shows that 86.3% of the studied women have low level of emotional intelligence pre-test while in post-test high level in study group (31.4%) and improvement of emotional intelligence level in follow up (94.1%) after implementation of educational program.

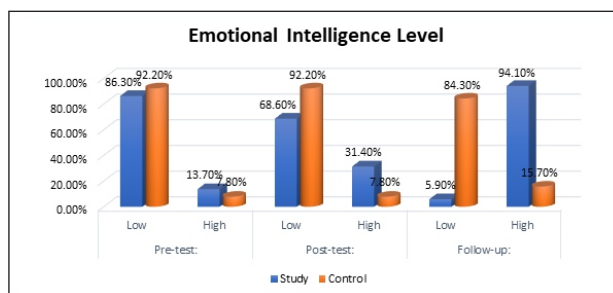


Figure 1: Distribution of the Studied Women According to Emotional Intelligence Levels (n= 102)

Table 3 shows a highly statistically significant difference between women in the study and control groups in post-test and follow up (p -value¹=0.031; 0.001) respectively and demonstrated that statistically significant difference among the study group in pretest and post-test (p -value²=0.001). Also show that highly statistically significant difference among study groups in pretest and follow up (p -value³ = 0.001) after implementation of the educational program.

Table 3: Relation of the QOL Levels between Women in the Study and Control Groups

QOL level	Study (n= 51)		Control (n= 51)		p-value
	No.	%	No.	%	
Pre-test					
Good	2	3.9%	1	2.0%	0.360
Average	22	43.1%	29	56.9%	
Poor	27	52.9%	21	41.2%	
Post-test					
Good	3	5.9%	1	2.0%	0.031*
Average	41	80.4%	32	62.7%	
Poor	7	13.7%	18	35.3%	
P-value2	0.001**		0.828		
Follow-up					
Good	14	27.5%	1	2.0%	0.001**
Average	36	70.6%	45	88.2%	
Poor	1	2.0%	5	9.8%	
P-value3	0.001**		0.001**		

Chi-square test; **Highly statistically significant difference p value≤0.001; *Statistically significant difference p value≤0.05

Table 4 regard correlation demonstrates statistically positive correlation between quality of life and

emotional intelligence after implementation of educational program.

Table 4: Correlation of the Study and Control Groups Based on QoL and Emotional Intelligence (n= 102)

			Study	Control
			EI score	EI score
Pre-test	QOL score	r-value	-0.293	-0.263
		p-value	0.037*	0.062
Post-test		r-value	-0.432	-0.244
		p-value	0.002*	0.084
Follow-up		r-value	-0.394	-0.379
		p-value	0.004*	0.006*

*Statistically significant difference

Table 5 reported that the quality of life of women is statistically significantly impacted by irregular menstruation and infertility pre, post and following program implementation.

Table 5: Relation between QOL Score and Studied Women's Gynecological and Menstrual History (n = 102)

Gynecological and menstrual history	QOL score		
	Pre-test	Post-test	Follow-up
	Mean ± SD	Mean ± SD	Mean ± SD
Menstrual regularity:			
Yes	2.15 ± 0.25	1.84 ± 0.25	1.50 ± 0.22
No	2.28 ± 0.31	2.05 ± 0.25	1.66 ± 0.24
p-value	0.047*	0.009*	0.037*
Infertility:			
No infertility	2.03 ± 0.39	1.77 ± 0.30	1.44 ± 0.25
Primary	2.28 ± 0.22	2.02 ± 0.20	1.68 ± 0.25
Secondary	2.36 ± 0.21	2.14 ± 0.19	1.65 ± 0.14
p-value	0.007*	0.001**	0.009*

*Highly statistically significant difference; **Statistically significant difference

DISCUSSION

The nurse plays a vital role in the identification, evaluation, management and follows up when caring for women with PCOS (Ee *et al.*, 2020). EI plays a significant role in the psychological well-being of women with PCOs (Barberis *et al.*, 2023). The current study illustrated that positive correlation between emotional intelligence and quality of life in women with PCOs. Thus, the hypothesis that Women with polycystic ovary syndrome, who will receive emotional intelligence educational program, will have a better quality of life than those who don't is accepted.

This result was supported by Abobaker *et al.* (2021), who implemented their study in KSA on 110 women with PCO, who reported that the total quality of life scores of women is highly positively correlated. Also, the study of Mohamed and Moustfa, (2019) confirmed that the women with PCOs are experiencing an improvement in their quality of life as a result of an educational intervention guideline. Nearly to present study, the study of Anjum and Swathi, (2017), shows positive correlation between emotional intelligence and quality of life. Also Ebeid *et al.* (2021), the results of their study demonstrate that there was a high positive correlation between the emotional intelligence of mothers and their quality of life. Could the similarity be revealed to highlight the importance of emotional intelligence and its positive effect on each domain of quality of life.

Concerning the QOL level, the study revealed that there is highly statistically significance difference between control and study group in post-test and follow up (p -value =0.031, 0.001) respectively after implementation of educational program. This result in the same harmony with studies of Yalcin *et al.* (2008) and Shahnavaizi *et al.* (2018), they demonstrated that there were no differences in the study and control groups' quality of life, well-being, or emotional intelligence levels prior to program implementation ($p > 0.05$). After the program, study group patients had higher levels of quality of life, well-being, and emotional intelligence compared to the control group ($p < 0.001$), which remained at the 3- and 6-month follow-ups. On the same line, Mohamed and Moustfa (2019), who applied their study in Egypt, revealed that the two phases differ statistically significantly in the post-intervention phase, which has an impact on the improvement of the quality

of life of the women under study.

Furthermore, the present study shows that, prior to the program's adoption, less than half of the women under study had an average quality of life, while more than half had a poor one. On the other hand, the findings of the current study disagree with the findings of Abdelaziz *et al.* (2023), who affirm that more than one half of women had an average quality of life. Also, the results of other studies like Bielecka *et al.* (2021) and Wright *et al.* (2021), demonstrated that women with PCOS are experiencing a reduced quality of life. This may be due to differences in residence of the studied women.

Nearly to present study, Shahnavazi *et al.* (2018) and Masià-Plana *et al.* (2024), who applied their study on different samples (hemodialysis patients) which is a chronic disease like PCOS, illustrated that the emotional intelligence educational program can significantly increase the mean total score of quality of life of hemodialysis patients. Appropriate education strategies help to create positive changes in patients' quality of life (Parvan *et al.*, 2015). In contrast to the present study, Ligocka *et al.* (2024), demonstrated that the majority of PCOS-afflicted women say they have a good or very good quality of life. Maybe this difference results from different cultures and traditions.

It has been found that the mean age of the women 30.61 ± 4.98 . The findings supported by Elaziz *et al.* (2023), who carried out their study on 231 women in Egypt, illustrated that the mean age of the studied women was MeanSD: 28.917.35. In contrast with findings of the present study, Ullah (2022) indicated that more than half of the women were diagnosed at a very young age of about 15-25 years old. The difference could be due to a change of setting of the study.

Concerning body mass index (BMI), the study represents that mean \pm SD: 27.64 ± 4.47 . It was consistent with Kabiri *et al.* (2024), who reported that the BMI mean \pm SD was 29.06. On the same line, Panda *et al.* (2024) and Toosy *et al.* (2018), confirmed that visceral fat is higher than subcutaneous fat in women with PCOS. Compared to normal women matched for BMI, women with lean PCOS have higher intra-abdominal, peritoneal, and visceral fat, a higher waist-hip ratio, and a higher percentage of body fat.

In contrast with findings of the present study, Abobaker *et al.* (2021), demonstrated that less than half of women were overweight and obese in the pre-intervention phase of the program. The difference could be due to the culture and country of the women of the study. The study illustrates that less than three quarter of the studied women had irregular menstruation and less than one half of them had primary infertility. Congruent with previous results, Abdelaziz *et al.* (2023) revealed that less than one half of women had primary infertility and Elaziz *et al.* (2023), who approved that less than three quarter of the studied women had the lowest quality of life domain were irregular menstruation. Also, the current findings supported by the findings of the study done by Morshedi *et al.* (2021), who found that the majority of women had experienced hirsutism, irregular menstruation, painful menstruation, and were obese. In addition, Fatemeh *et al.* (2021), found that menstrual problem was the most affected area in worsened HRQOL than obesity. In contrast to the present study, Khomami *et al.* (2015), illustrated that the QOL of Iranian women towards PCOS seems to be more affected by hirsutism's severity compared to other PCOS symptoms. This difference might be due to physical differences between Eastern and Western populations.

Limitations

The study was carried out with a relatively small number of women in a single location. Furthermore, there are other demographic and clinical characteristics, such as the income and presence of comorbidities, that, according to the literature, might affect the quality of life of patients, which were not taken into account.

CONCLUSION

Considering the findings of our study, it was concluded that the educational program about emotional intelligence has a positive impact on the quality of life among women with PCOs, effectively improving the negative effect of PCO on women's quality of life and have helpful influence in each domain of quality of life. So, nurses ought to support and educate women and raise their awareness toward PCO management, lifestyle modification and emotional intelligence and further exploring the factors that mediate the relationship such as coping strategies and illness uncertainty. Future research develops standardizing nursing protocol that

incorporates emotional intelligence education as a primary part of PCO management and assesses the long-term sustainability of improvement over the years.

Recommendations

The current study recommended upgrading women's knowledge of lifestyle modification. Enhancing service training program in the field of emotional intelligence for women and nurses. Investigating the role of the woman's EI and QoL on the emotional wellbeing of her partner and the dynamics within the family.

Conflict of Interest

The authors declare they have no conflict of interest.

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