

Effect of Coping Strategies Education on Pregnant Women's Knowledge and Anxiety with Detected Fetal Anomalies

Heba Ahmed Osman Mohamed ⁽¹⁾, Madiha Mohamed Tosson ⁽²⁾, Nawal Kamal Abd Elkhalek ⁽³⁾,
Wafaa Hamed Kamal Elshafie ⁽⁴⁾, Nagia I. Hassan ⁽⁵⁾, ElSayed Hamdy Nasr Abdelhalim ⁽⁶⁾

(1) Obstetric and Gynecological Department, Faculty of Nursing, Assiut University

(2) Obstetrics and Gynecology Nursing, Faculty of Nursing, Assiut University, Egypt

(3) Obstetrics and Gynecological Nursing, Faculty of Nursing, South Valley University

(4) Community Health Nursing Department, Faculty of Nursing, Mansoura University

(5) Department of Psychiatric Nursing and Mental Health, Faculty of Nursing, Damanhour University, Damanhour
Egypt. email: nagia.gomaa@yahoo.com, Orcide ID: 0000-0003-2625-1708

(6) Maternity, Obstetrics, and Gynecology Nursing, Faculty of Nursing, Port Said University

Abstract

Background: The detection of fetal anomalies during pregnancy can affect woman's social, physical, psychological, and emotional well-being. **The study** aimed to evaluate the effect of coping strategies education on pregnant women's knowledge and anxiety with detected fetal anomalies. **Subjects and Methods: Design:** A quasi-experimental design was used to achieve the aim of this study. **Setting:** This study was conducted at the antenatal clinic at General Qena Hospital and South-Vally University Hospital. **Sample:** A total of 100 pregnant women with a prenatal diagnosis of fetal anomalies. **Four tools were used to collect data:** (1) A structured interviewing questionnaire, (2) Pregnant women's knowledge assessment form, (3) an Anxiety Rating Scale, and (4) Parental Coping Strategies Inventory (PCSI). **Results:** The results of the current study revealed that after the coping strategies education, the pregnant women's knowledge and coping level regarding fetal anomalies improved and their anxiety reduced ($p < 0.05$). A statistically significant improvement was found between the knowledge, coping level and anxiety-reducing among the pregnant women as pre/ post one month of coping strategies education ($p < 0.05$). **Conclusion:** The study concluded that implementation of coping strategies education for pregnant women regarding fetal anomalies had a statistically significant positive effect on improving their knowledge, coping level and reducing their anxiety. **Recommendations:** Coping strategies education should be included in pregnant women's educational and counseling programs.

Keywords: Anxiety, Coping strategies, Fetal anomalies, Knowledge, Pregnant women.

Introduction:

The process of detecting fetal abnormalities based on ultrasound and prenatal screening can cause significant social, physical, psychological, and emotional stress in pregnant women (Kamranpour et al., 2019).

Congenital abnormalities are a public health problem because they lead to an increase in disability and deaths. They are a primary cause of stillbirth and spontaneous abortion. Children with congenital abnormalities have a higher risk of experiencing cognitive, physical, and social issues later in life. Congenital malformations affect 2-4 percent of all births worldwide, and Arab countries have a higher rate of congenital anomalies than non-Arab countries (Rasmussen et al., 2019).

Although the actual causes of congenital malformations are unclear in nearly half of the

cases, genetic, maternal, dietary, ecologic, economic, and environmental risk factors have been proposed. Congenital malformations have been linked to consanguineous marriages, which may explain why Arab and Muslim countries have higher rates of congenital defects (Irani et al., 2018).

Understanding the many forms and etiologies of congenital anomalies is critical for prevention program, and early detection of congenital anomalies is critical for rehabilitation program efficacy. Furthermore, having a good understanding of the many types of congenital malformations and the risk factors that causes them in pregnant women can assist reduce perinatal morbidity and mortality. Pregnant women may experience severe social, physical, psychological, and emotional stress as a result of ultrasound-based fetal abnormality detection and prenatal screening. As a result,

recognizing effective coping methods can assist pregnant women to improve their health by allowing them to pick coping strategies based on the context (**Mosher et al., 2019**).

The difficulty of this process often requires coping strategies to adapt to the situation. Coping has been defined as a behavioral and cognitive effort to “manage specific external and/or internal demands that are appraised as taxing or exceeding the resources of a person”. Previous studies show that patients with an ineffective coping style illustrated inappropriate management of their disease. They reported that coping style affected mental health and health behaviors of the patients, which could affect mortality and morbidity due to the disease. When health providers know effective coping strategies, they can better help patients to cope with this difficult situation (**Smith et al., 2017**).

A review of the studies conducted on this subject shows that the most common coping strategies that patients reported as effective in coping with their disease included comparing one's situation with something worse, religiousness and spirituality, acceptance of the situation, seeking information, and optimism and positive thinking. Previous studies have reported that receiving social support after the detection of a disease can reduce depression, psychosocial morbidity, and post-traumatic stress and anxiety disorder symptoms (**Schafer et al., 2017**).

In addition, progressing technology has increased the detection of fetal anomalies in pregnancy; thus, this can cause significant social, physical, psychological, and emotional stress in pregnant women. Therefore, identifying and training effective coping strategies can lead to improved maternal health and can help women choose coping strategies in accordance with the contextual factors (**McCann & Lubman, 2018**).

Coping strategies aid mothers in limiting negative behavior and thoughts (e.g., obsessive thinking such as spending practically all of their time with the child, etc.) and focusing on other aspects of their lives such as their relationship, hobbies, friends, or employment. When a child's handicap is diagnosed, the family must be able to choose this form of

assistance. They may rely on support organizations to help families meet their needs and rationally grasp the events that have occurred (**Collins et al. 2017**).

Nurses play an important role in assisting and educating mothers who have children with congenital anomalies to help them cope with the physical and psychological issues that arise as a result of the anomalies, and informed mothers can work more effectively with the nurses to establish a strong bond with their children (**Adams et al., 2018**).

Significance of the study:

Although congenital anomalies occur in up to 4% of births and Arab communities show higher rates, little is known about the knowledge of pregnant women in Egypt about congenital anomalies and their anxiety about these disorders. Knowledgeable mothers would help in screening and protection. There is an urgent need for coping strategies education for pregnant women in similar stressful situations who are unable to suitably cope. By gaining control over the stressful factors and determining suitable coping strategies, the anxiety level of these mothers can be reduced (**Ahmed et al., 2019**).

Aim of the study:

This study aimed to evaluate the effect of coping strategies education on pregnant women's knowledge and anxiety with detected fetal anomalies **through:**

- Assessing the pregnant women's knowledge regarding fetal anomalies
- Assessing the pregnant women's anxiety regarding fetal anomalies.
- Assessing the pregnant women's coping level regarding fetal anomalies
- Implementing coping strategies for pregnant women regarding fetal anomalies
- Determining the effect of coping strategies education on pregnant women's knowledge, coping level and anxiety with detected fetal anomalies.

Hypothesis:

H1: The pregnant women who received coping strategies education would had improved knowledge regarding fetal anomalies post-test compared to pre-test.

H2: The pregnant women who received coping strategies education would have reduced anxiety regarding fetal anomalies post-test compared to pre-test.

H3: The pregnant women who received coping strategies education would had higher coping level regarding fetal anomalies post-test compared to pre-test.

Subjects and Method

Research design:

A quasi-experimental design was used to achieve the aim of this study. This design is important to the nature of the study issue, having one or more group subjects observed on pre and post manipulations (Creswell, 2012).

Setting:

This study was conducted at the antenatal clinic at General Qena Hospital and South-Vally University Hospital. Antenatal Outpatient Clinics located on the ground floor of the outpatient building. They consisted of two rooms for sonar, antenatal examination, gynecological examination, and nursing staff. Also, there was a waiting area for women and a lecture room which involved an adequate number of seats, and data show where the researchers interviewed the recruited pregnant women to conduct this study. The antenatal outpatients' clinics provided diagnostic and therapeutic services for pregnant women from Saturday to Wednesday, from 9 a.m. to 1 p.m. These settings were selected due to higher women's attendance rate; serving the biggest region of the population from rural and urban regions in Qena city and also, providing free services to women who are resident in Qena city.

Subjects:

Sample size calculation:

The sample size was A total of (100) pregnant women were selected according to the following statistical formula $n = Z^2p(1-p) / d^2$, where z = level of confidence according to the standard normal distribution (for a level of confidence of 95%, $z = 1.96$). p = estimated proportion of the population that presented the characteristic (when unknown we use $p = 0.5$), d = (d is considered 0.05).

It included 100 antenatal pregnant women with a prenatal diagnosis of fetal anomalies who were selected from previous settings based on non-probability purposive sampling who met the inclusion criteria within six months and received education from the previously mentioned setting. The inclusion criteria were pregnant women whose ages ranged from 18-40 years old. They were available at the previously mentioned setting at the time of the study, and agreed to participate in this study. Exclusion criteria included antenatal pregnant women who were suffering from physiological problems and did not agree to participate in the study.

Sample type:

Non-probability purposive sampling was used.

Tools of data collection:

Four tools were used for data collection.

Tool I: A structured interviewing questionnaire this tool was developed by the researchers after reviewing related literature (Ahmed et al., 2019; Irani et al., 2019; McCann & Lubman, 2018; and Schafer et al., 2017) and included two parts:

Part (1): This tool included information about demographic characteristics of pregnant women (age, residence, education, and occupation)

Part (2): This tool included information about family and obstetrical history included gestational week, consanguineous marriage, history of abortion, previous anomalous baby, gravidity, and parity.

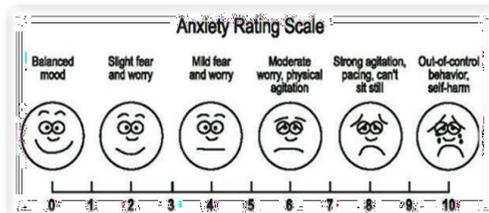
Tool 2: Pregnant women's knowledge assessment form is used to assess pregnant women's knowledge about the congenital anomalies. It included 16 items related to the definition, types, causes, and prevention.

Scoring system:

It included 3 open-ended questions asking about the congenital anomalies, while the model answers were given to the interviewer. Women were given a score from 0 to 6 in each question according to their answers. One point was given to every correct answer, so women who could detect 6 types of congenital anomalies were given 6, those who could name 6 risk factors were given 6, and women who

could mention 6 preventive precautions were given 6. The total score of knowledge was 18, the highest possible score was 18 and the lowest score was 0. Scores $\geq 60\%$ of the total score were considered satisfactory knowledge and scores less than 60% were considered unsatisfactory.

Tool III- Anxiety Rating Scale: This was developed by Bloch, (2009) to assess the anxiety level experienced by a woman with a prenatal diagnosis of fetal anomalies. It is a straight line, the ends of which defined as the extreme limits of the sensation to be measured from 0 (balanced mood) to 10 (out of control). The anxiety rating scale scoring was divided into six main parts: the first part graded 0 which indicated balanced mood, the second part from 1-2 reflecting slight fear and worry, the third part from 3-to 4 indicating mild fear, the fourth part graded 5 indicating moderate fear, the fifth part from 6-7 reflecting strong agitation and the six-part from 8-10 indicating out of control behavior.



Tool IV: Parental Coping Strategy Inventory (PCSI) was adapted from Yeh, (2001) and used for assessing the coping strategy used by women, consisting of a total of 68 items divided among the 12 subscales. These 12 subscales included learning scale, struggling scale, interaction with patient scale, interaction with the spouse, interaction with a healthy sibling, emotion support, information support, actual support, maintaining stability, maintaining an optimistic state of mind, searching for spiritual meaning, increasing religious activities.

Scoring system:

The items composed of (5) point Likert scale with response options were: strongly disagree (1), disagree (2), neutral (3), agree (4), and strongly agree (5). A higher score meant greater use of particular coping strategies. The scores of the items were summed up and the

total divided by the number of items, given a mean score for the part. These scores were converted into a percent score.

Operational Design

This design involved the details of the preparatory phase of the study, tools Validity and Reliability, the pilot study, ethical consideration, and the fieldwork.

Preparatory phase:

The researcher reviewed the literature and prepared the data collection tools including the socio-demographic, family and obstetrical history, knowledge as well as the anxiety level among pregnant women with a prenatal diagnosis of fetal anomalies and coping strategies

Validity of the study:

Face and content validity of the tools for clarity, comprehensiveness, appropriateness, and relevance by a board of five experts professors, one professor in community health nursing, two professors in obstetric and gynecological nursing, and two professors in psychiatry health nursing with more than ten years of experience in the fields were assessed; the board ascertained the face and content validity of the tools.

Reliability of the study:

The Cronbach's test was performed to determine tool I reliability, which was 0.88, tool II reliability was 0.87, tool III reliability was 0.85, and tool IV reliability was 0.83.

Pilot study

A pilot study was carried out on 10% of pregnant women (10 women) to test the feasibility, applicability, and clarity to estimate time required for data collection tools. No modifications were done to the tools; pregnant women in the pilot study were excluded from the sample of the study.

Ethical Considerations

The study was approved by the ethical scientific research committee at the Faculty of Nursing, South Vally University, and data for each participant were collected only after obtaining verbal consent. Then explaining the aim of the study was done simply and clearly to

be understood by common people. Data were considered confidential and not be used outside this study.

Fieldwork:

Data were collected from the beginning of March 2021 and the end of June 2021. The researchers attained predetermine setting 3 days per week from 9 am to 1 pm. The study was conducted through assessment, planning, implementation, and evaluation phases. In the assessment phase, the researchers asked pregnant women and record their answers in an Arabic-language questionnaire. Then, the knowledge and anxiety levels of the pregnant women were assessed by the researchers using the study tools.

I- The assessment phase, the researcher met the pregnant women who had been recruited for the study at the antenatal clinics in the previously chosen locations and acquired oral consent from each study participant after explaining the study's purpose and benefits in each setting. Then she introduced herself and explained the research's goal. Using a standardized interviewing schedule, all pregnant women were interviewed individually to obtain data on their socio-demographic status, current obstetrical history, and history of previous pregnancies and births. To collect the baseline data related to pregnant women's knowledge, coping level, and anxiety levels by using the Anxiety Rating Scale before the intervention. The interview took around 30 minutes to be completed for each interview.

II-Implementation phase: The researchers met pregnant women individually at waiting area present at previously selected settings and explain the aim of the study after introducing themselves to pregnant women. The researchers used face- to -face interview and they read the questions and possible answers to the pregnant women to help them filled their response in the tools.

The simplified booklet was used as a supportive material and given to pregnant women in the Arabic language to cover all items regarding the knowledge and practice regarding fetal anomalies after reviewing the related literature based on the assessment of the

actual needs of the studied pregnant women. Different teaching methods such as lectures, educational films, PowerPoint presentation, discussion, pictures, and posters were used.

The program designed by the investigators, included 3 sessions, 30 minutes each. The first session focused on explaining the different types of congenital disorders, the second session discussed the risk factors associated with the development of fetal anomalies by providing different coping strategies to pregnant women to help them to cope with the situation, while the third session was about the prevention and screening for anomalies. At the same time, the three sessions aimed at reducing the anxiety level of pregnant women towards fetal anomalies. Brochures and leaflets, supported by illustrated figures and graphs, have been distributed. Anxiety level was assessed after coping strategies education and recording the results.

III- Evaluation phase: all pregnant women were assessed again over their knowledge, coping level, and anxiety levels using the same pre-test tools (II, III, and IV) and the scoring system was similar to that of the baseline assessment after one month of implementation.

Statistical analysis:

Data entry, verification, and validation were carried out using standard computer software. Data were analyzed using the software, Statistical Package for Social Science (SPSS Inc. Released 2009, PASW Statistics for Windows, version 20.0: SPSS), then processed and tabulated. Frequency distribution with its percentage and descriptive statistics with mean and standard deviation were calculated. Chi-square, t-test, and correlations were done whenever needed. P values of less than 0.05 were considered significant.

Results:

Table (1): Illustrates that 79% of the pregnant women their age ranged between 18 < and 30 years with a mean \pm SD 24.58 ± 5.42 , (49%) of them had secondary education. Concerning occupation, it is pointed out that 63% of the pregnant mothers were housewives.

Figure (1): Demonstrates that (74%) of the pregnant women were living in rural areas and 26% of them were from urban areas.

Table 2 reveals that 62% of the studied pregnant women were between 28<32 gestational weeks, 36% of them reported that they were consanguineous marriage, (7%) of them had a history of abortion, and only 2% had a previous baby anomaly. Concerning gravidity 78% of the studied pregnant women were multigravida. As regards parity, it was observed that 56% of the studied pregnant women were having two children or less.

Table (3) Demonstrates mean differences between the studied pregnant women's knowledge regarding fetal anomalies, it was noticed that there was an improvement with a highly statistically significant difference between pregnant women's knowledge regarding fetal anomalies pre and post-coping strategies education ($P<0.001$).

Table (4): Portrays that (93%) of the pregnant women had satisfactory knowledge regarding fetal anomalies post coping strategies education compared to 19% pre coping strategies education with a statistically significant difference.

Figure (2): Illustrates that 83% of the studied pregnant women reported that their main source of information regarding fetal anomalies was the doctor.

Figure (3): indicates the coping strategies used by the studied pregnant women before

coping strategies education, it is obvious that religious activities were the most frequent strategy used (90%), followed by spiritual (81%) and information support (76%).

Table (5): This table lists the coping strategies adopted by pregnant women who had been diagnosed with fetal abnormalities prenatally. In the post-coping strategies education, there was a significant improvement in all items of the Coping Strategies Inventory compared to the pre-coping strategies education.

Figure (4): Reveals the coping level among the studied pregnant women who detected fetal anomalies pre and post coping strategies education, it was obvious that there was an improvement in the coping level among them and 69% of them had an poor coping level pre-coping strategies education compared to 60% of them had an average coping level post-coping strategies education.

Figure (5) shows that (50%) of the studied pregnant women who detected fetal anomalies had severe anxiety pre-coping strategies education compared to 14% post-coping strategies education.

Table (6): Illustrates that there was a significant correlation between the knowledge and Coping Strategies Inventory of the studied pregnant women, and a significant correlation between anxiety and Coping Strategies Inventory of the studied pregnant women pre and post-coping strategies education ($p<0.05$).

Table (1): Frequency and percentage distribution of the studied pregnant women regarding their demographic characteristics (n=100)

Demographic characteristics	No.	%
Age in years		
18 < 30	79	79.0
30 – 40	21	21.0
Mean ±Stander deviation	24.58 ± 5.42	
Educational level		
- Read and write	16	16.0
-Secondary education	49	49.0
-University education	35	35.0
Occupation		
- Working	37	37.0
- Housewives	63	63.0

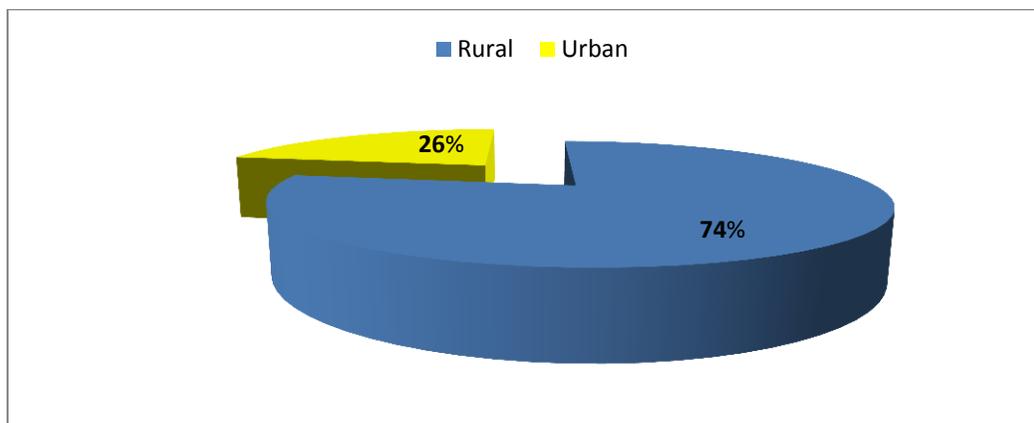


Figure (1): Percentage distribution of the studied pregnant women according to their residence (n=100)

Table (2): Frequency and percentage distribution of the studied pregnant women regarding their medical, family history, and obstetrical history (n=100)

Medical obstetrical history	No.	%
Gestational weeks		
- 28<32	62	62.0
- 32-36	38	38.0
Consanguineous marriage		
- Yes	36	36.0
- No	64	64.0
History of abortion		
- Yes	7	7.0
- No	93	93.0
Previous anomalous baby		
- Yes	2	2.0
- No	98	98.0
Gravidity		
- Primi	22	22.0
- Multi	78	78.0
Parity		
- ≤2	56	56.0
- >2	44	44.0

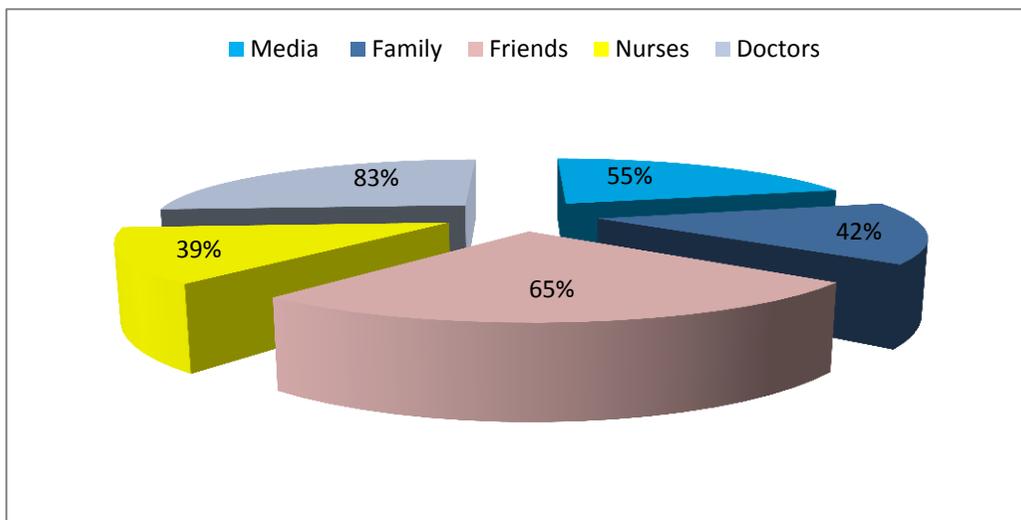


Figure (2): Percentage distribution of the studied pregnant women according to their source of knowledge regarding fetal anomalies (n=100)

Table (3): Mean differences between the studied pregnant women's knowledge regarding fetal anomalies pre and post coping strategies education

Pregnant women's knowledge	Pre coping strategies education	Post coping strategies education	t-test	P-value
Definition	1.62±1.43	3.63±1.75	18.182	<0.001*
Causes	1.41±1.42	3.61±1.67	17.535	<0.001*
Types	1.46±1.39	3.47±1.63	19.624	<0.001*
Risk factors	1.52±1.46	3.64±1.72	24.133	<0.001*
Prevention	1.88±1.54	3.69±1.52	23.137	<0.001*

(**) highly statistical significance at p < 0.001

Table (4): Total knowledge level score of the studied pregnant women regarding fetal anomalies pre and post coping strategies education

Total knowledge	Pre coping strategies education		Post coping strategies education		T	P-value
	No	%	No	%		
Satisfactory	19	19.0	93	93.0	5.023	<0.001*
Unsatisfactory	81	81.0	7	7.0		

(**) highly statistical significance at p < 0.001

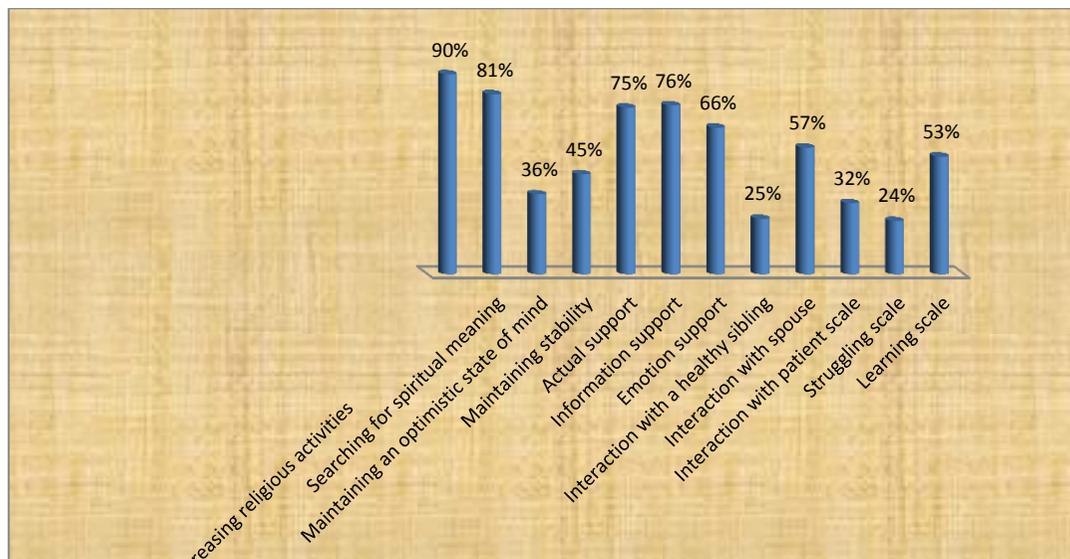


Figure (3): Percentage distribution regarding coping strategies used by the studied pregnant woman who detects fetal anomalies pre-coping strategies education

Table 5: Mean differences regarding Coping Strategies Inventory among the studied pregnant woman who detect fetal anomalies pre and post-coping strategies education.

Coping Strategies Inventory items (CSI)	Pre coping strategies education	Post coping strategies education	t-test	P-value
Learning scale	5.52 ±2.23	9.26± 2.23	7.033	0.000
Struggling scale	2.24± 0.66	4.54± 0.44	11.012	0.000
Interaction with patient scale	2.83± 0.82	5.73± 0.43	3.499	0.000
Interaction with spouse	3.56± 0.28	6.26± 0.33	6.763	0.000
Interaction with a healthy sibling	1.37± 0.35	3.55± 1.33	7.033	0.000
Emotion support	1.26± 0.68	3.73± 0.23	11.012	0.000
Information support	2.68± 0.02	4.03 ±0.24	3.499	0.000
Actual support	1.23± 0.23	3.08 ±0.44	6.763	0.000
Maintaining stability	3.88± 1.22	6.33± 0.55	7.033	0.000
Maintaining an optimistic state of mind	2.36 ±0.50	4.72± 1.47	11.012	0.000
Searching for spiritual meaning	1.36± 0.25	3.06 ±0.36	3.499	0.000
Increasing religious activities	1.25± 0.40	3.13 ±0.24	6.763	0.000

(**) highly statistical significance at $p < 0.001$

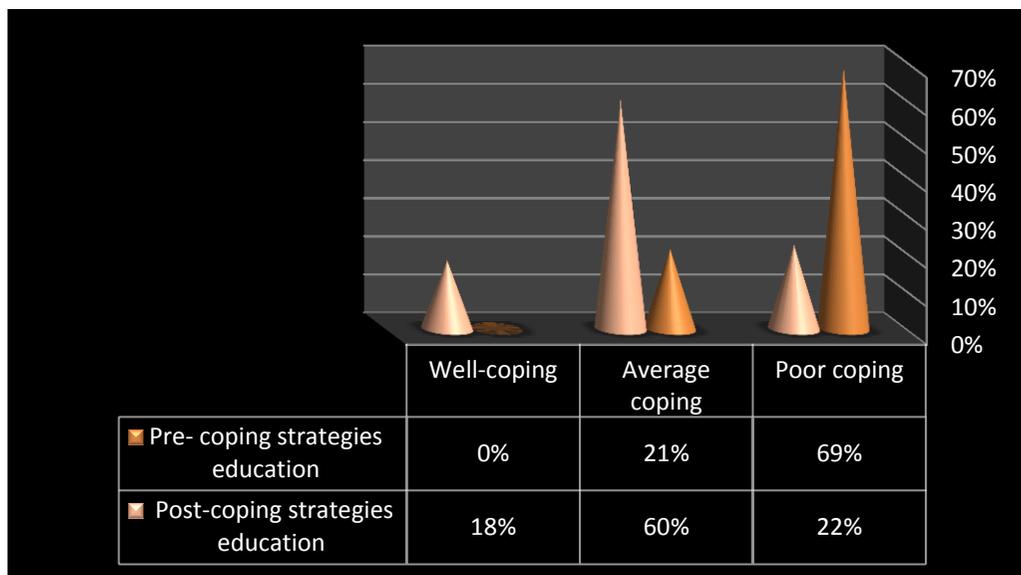


Figure (4): Coping Level among the studied pregnant women who detected fetal anomalies pre and post coping strategies education (n=100)

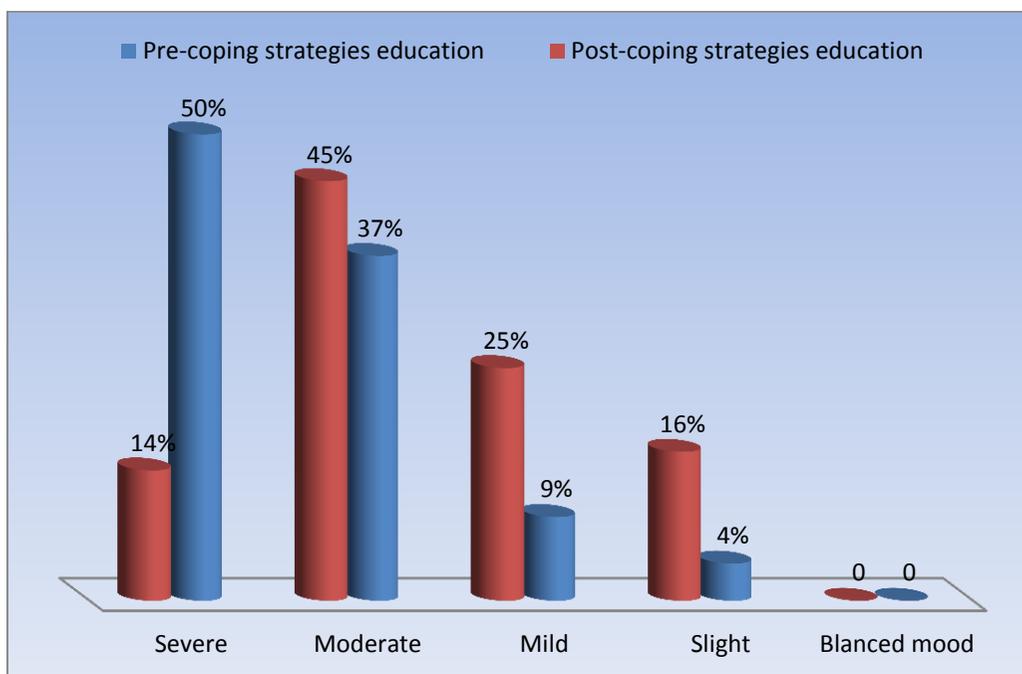


Figure (5): Anxiety Level among the studied pregnant women who detected fetal anomalies pre and post coping strategies education (n=100)

Table (6): Correlation between Knowledge, anxiety, and Coping Strategies Inventory of the studied pregnant women pre and post coping strategies education

Variables	Coping Strategies Inventory			
	Pre coping strategies education		Post coping strategies education	
	R	P	R	P
Knowledge	0.85	<0.05*	0.52	<0.05*
Anxiety	0.94	<0.05*	0.91	<0.05*

(**) Correlation significance at $p < 0.001$

Discussion:

The present study illustrated the coping strategies used by pregnant women following the prenatal diagnosis of fetal anomalies. Also, the study reflected the positive effect of coping strategies education on improving pregnant women's knowledge, coping level, and reducing their anxiety.

The results of the present study indicated that less than three-quarters of the pregnant women were living in rural areas. This may be attributed to knowledge deficit and resources in rural areas. From the researchers' point of view, this may be the cause of a lack of awareness and knowledge deficit regarding the research topic.

The results of the present study indicated that there was an improvement with a highly statistically significant difference between pregnant women's knowledge regarding fetal anomalies pre and post-coping strategies education. From the researchers' point of view, this reflects the importance and effectiveness of coping strategies education that is commonly associated with improving knowledge and a better understanding among the studied pregnant women regarding fetal anomalies.

Concerning total knowledge among the pregnant women, results of the present study indicated that revealed that the majority of them had satisfactory knowledge regarding fetal anomalies post coping strategies education compared to less than one-fifth pre coping strategies education with a statistically significant difference. The good effect of coping strategies education may be shown in the improvement in knowledge about the research topic. Knowledge deficit pre-coping strategies education can be attributed to the fact that fetal anomalies are new advanced trends for them, as well as their low level of knowledge about how to cope and reduce

their anxiety before the coping strategies education regarding fetal anomalies.

This finding contradicts **Mohammed et al., (2019)**, who studied and found that over the majority of Egyptian women and 51 percent of Saudi women had enough awareness about congenital malformations in their study of over 100 Egyptian women and 100 Saudi women.

These current study findings do not agree with **Lawal et al., (2019)** who studied " Knowledge of birth defects among nursing mothers in a developing country "and discovered that more than half of the mothers in a cross-sectional survey of over 714 Nigerian moms who were registered for antenatal care were aware of the congenital defects. **Masmouh et al., (2019)** did a study on 150 pregnant mothers in Iran entitled " Knowledge of pregnant women about congenital anomalies "and found that the majority of the participants had moderate to high knowledge about congenital abnormalities. **Bello et al., (2018)** conducted a study on "Knowledge of pregnant women about birth defects "and reported that less than half of the pregnant women in Ghana had adequate awareness of congenital abnormalities in a sample of 443 women.

In addition, in Singapore, a study conducted by **Tan et al., (2018)** about "Pregnancy and birth rates of live infants after in vitro fertilization in women with and without previous in vitro fertilization pregnancies" and found that majority of postnatal and prenatal women, respectively, discovered Down syndrome risk factors.

The current study's findings also revealed that the pregnant women surveyed said their primary source of knowledge for fetal anomalies as their doctors. The presence of a spouse boosted the sense of connection with others, which may have an impact on individual health and performance, as well as increased pleasure during the diagnosis

process. The encouraging encouragement of peers and doctors instilled hope in the women and boosted their spirits. Other studies have found that social support can help people adapt to new situations such as illnesses (Jouybari et al., 2016).

The study findings illustrated that there was an improvement in the coping level among majority of them and they had a poor coping level pre-coping strategies education compared to 60% of them had an average coping level post-coping strategies education. From the researchers' point of view, this confirmed the positive effect of coping strategies education that is commonly associated with improving their coping level.

The study findings showed that half of the studied pregnant women who detected fetal anomalies had severe anxiety pre-coping strategies education decreased to less than one-fifth post-coping strategies education. Similar findings were done by **Antshel et al., (2019)** and **Pinquart, (2018)** and pointed to the need for psychosocial interventions for both mothers and their children who had congenital anomalies. However, regardless of their risk factors or incidence in births, every congenital anomaly is a disturbing experience for women, and having a child with a congenital anomaly has a profound negative effect on them. The religious aspect has to be put in mind while handling this problem in Arab communities since many women believe that the congenital anomalies affecting children are simply God's will and they had nothing to do with it (**Fadel, 2018**).

The results of the present study indicated that religious activities were the most frequent strategy used, followed by spiritual, and information support. This indicated that religion is regarded as an effective way to cope with problems because of its significant impact on people's lives in terms of improving religious attitudes and mental health (**Rodriguez & Henderson, 2015**). Expecting God's help in difficult and stressful life situations, as well as utilizing spiritual support, are all methods by which religious people can be less damaged while dealing with stressful life events (**Asayesh et al., 2019**). This result is supported by the study conducted by **Asayesh**

et al., (2019) in Iranian titled spiritual well-being and religious coping strategies among hemodialysis patients and found that using spiritual coping strategies play an important role in the coping process in pregnant women with fetal abnormalities.

This finding is consistent with **Germei & Schulz's (2020)** study, "Information seeking and avoidance throughout the cancer patient," which found that avoiding situations and receiving negative information were two strategies used by women to reduce the amount of threatening risks to fetal health during pregnancy. The avoidance technique, according to the researchers, controlled patients' feelings and had immediate favorable benefits following stressful events, but it did not produce good long-term results. **Similary, Singh, et al., (2019)** reported low means in the problem-solving sub-scale of the Coping Strategies Inventory scale before the intervention, indicating lower coping capacity, which increased after the program and was higher at the follow-up.

The results of the present study indicated that there was a significant correlation between the knowledge and SCI of the studied pregnant women, and a significant correlation between the anxiety and SCI of the studied pregnant women pre and post-coping strategies education ($p < 0.05$). This indicated the importance of allowing coping strategies education to pregnant women with detected fetal anomalies. The effectiveness of coping strategies education in altering and increasing knowledge, coping level, and reducing worry among pregnant women who discovered a fetus with congenital abnormalities. Because coping methods education aids pregnant women in learning, comprehending, and raising their knowledge, it may aid in psychological acceptance. It also reflects pregnant women's demand for knowledge regarding their diagnoses and requests for health-improvement plans.

The findings of present study are supported by **Iida et al., (2018)**, who discovered that a change in SCI positively connected with a change in STAI "trait anxiety," and that a decrease in stress-coping style "escape-avoidance" correlated with a

decrease in trait anxiety. **Guevara and González (2018)** suggested that the family intervention could help pregnant women avoid feeling overwhelmed by the situation. To do this, the intervention should include educating how to take control of situations by lowering negative behaviors and ideas while also enhancing other elements of life such as partner connections, friendships, and interests.

The results of the current study convey the success of the coping strategies education for pregnant women which met their needs in terms of enhancing, improving their knowledge, coping level, and reducing their anxiety resulting in acceptance of the research hypothesis and objectives. The coping strategies education that had been implemented in this study achieved a statistically significant positive impact on improving the knowledge, coping level, and anxiety level of women towards fetal anomalies.

Conclusion:

Based on the findings of the current study, it was concluded that pregnant women had unsatisfactory knowledge, low coping level and severe anxiety levels regarding fetal anomalies pre coping strategies education. Implementation of coping strategies education for pregnant women regarding fetal anomalies had a statistically significant positive effect on improving their knowledge, coping level, and reducing their anxiety.

Recommendations:

Based on the findings of the present study, the following recommendations were suggested:

- Coping strategies education should be included in pregnant women's educational and counseling programs.
- Provide emotional and social support for pregnant women with a prenatal diagnosis of fetal anomalies from the moment of diagnosis to reduce their anxiety.
- Further studies about the effect of detected fetal anomalies on a mother's quality of life pre and post coping strategies education.

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