

# Impact of counseling based on PLISSIT model on women's knowledge regarding modern educational information about abortion

## Abstract

**Background:** Abortion incidence saw an increase across most states and all four regions, with pharmaceutical abortions rising by 45% to 492,210. While the national number of abortion facilities remained stable, the Midwest and West experienced increases, counterbalanced by decreases in the Northeast and South. The PLISSIT model, applied to post-abortion and reproductive health counseling, has proven effective in mitigating complications and improving patient understanding.

**Aim:** The current study was conducted to evaluate the impact of counseling based on PLISSIT model on women's knowledge regarding modern educational information about abortion.

**Subjects and methods design:** A quasi-experimental (pre- and post-test) research design was used.

**Subjects & settings:** A convenient sample of 92 women who had abortions affiliated obstetrics & gynecology unit at Beni-Suef University Hospital.

**Tools:** (1) structured interview questionnaire. (2) women's knowledge regarding abortion and management. (3) Information technology.

**Results:** most of the studied women (81.5%) were not working, 58.7% from rural areas, 76.1 had insufficient monthly income and 58.7% had extended family, 15.2% had satisfactory knowledge regarding modern educational information on abortion pretest which improved posttest to 80.4%, 72.8% of studied women who hadn't working had unsatisfactory answer knowledge before the counseling which improved to 14.1% unsatisfactory answer post implementation of counseling sessions.

**Conclusion:** Based on the results of the current study, it was observed that there was a statistically significant improvement among the studied women regarding modern educational information on abortion posttest. There was no statistically significant relation between the studied women' total knowledge level and their job.

**Recommendations:** creating an educational program to increase women's understanding of social media usage, maximizing its benefits, exposing them to the most reliable and authentic social media platforms, and demonstrating how to use these tools to enhance their post-abortion lifestyles.

**Keywords:** counseling, plissit model, knowledge, modern educational information, abortion

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## Introduction

The year 2020 recorded 930,160 abortions, marking an 8% increase compared to 2017. The incidence of abortion rose in most states and across all four regions of the nation between 2017 and 2020. While the number of facilities offering abortion services remained constant nationwide, a rise was observed in the Midwest and the West, whereas a decline occurred in the Northeast and South. In 2020, there were 492,210 pharmaceutical abortions, representing a 45% increase compared to 2017.<sup>1</sup>

Counseling about post abortion period and other reproductive health issues requires a set of specific skills designed to facilitate informed decision-making.<sup>2-8</sup>

Based on PLISSIT model to counseling, the PLISSIT (permission, limited information, specific suggestions, intensive therapy), this model has been shown to document effectiveness in post-abortion

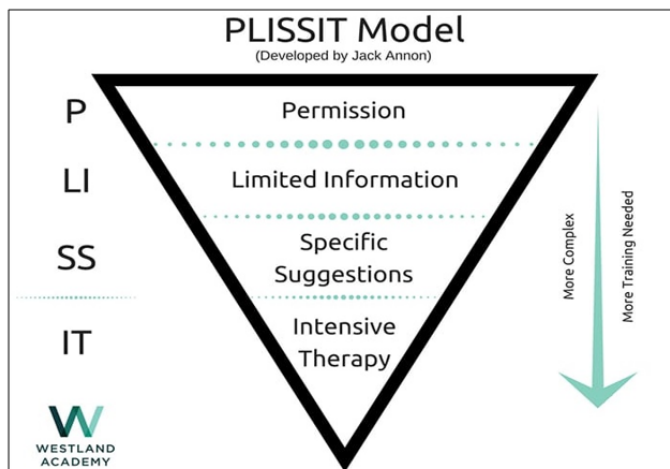
programs, reducing complications and increasing women's knowledge about abortion.<sup>9-11</sup>

Systematic reviews and meta-analyses on the effectiveness of the PLISSIT model in the literature indicate that the PLISSIT model for post-abortion counseling is an effective, simple, useful, and cost-effective method. The meta-analysis showed that psychological interventions, including the PLISSIT model, significantly improved the post-abortion lifestyle of women.<sup>12-13</sup>

The PLISSIT model was first developed by Annon (1976). The model includes four levels of intervention (Permission-Limited Information-Specific Suggestions-Intensive Therapy) of intervention. Each level suggests approaches for responding to abortion concerns (Figure 1).<sup>14</sup>

**Permission (P):** giving permission to women to discuss issues of concern and encouraging the discussion of problems.

**Limited Information (LI):** offering limited information about the physical and physiological aspects after abortion and providing correct details about the expected treatment, without going into exhaustive detail.



**Figure 1** Conceptual framework of PLISSIT model<sup>15</sup>

**Specific Suggestions (SS):** giving specific suggestions for managing common problems that may arise during treatment.<sup>16</sup>

**Intensive Therapy (IT):** In a few cases where there are complex underlying causes for abortion, intensive therapy will be required when women's issues cannot be resolved in the first three steps, such as intrapersonal conflicts or psychological problems. The initial step in addressing post-abortion issues involves the evaluation process of women and their partners, to discuss abortion and assess women's knowledge about abortion and the post-abortion period.<sup>17</sup>

In the second level, information is provided about the effect of counseling on abortion and how treatment can affect women's lifestyle. It is emphasized that informing women about the treatments following abortion and counseling is an essential part of nursing interventions.<sup>6, 7, 9, 14</sup>

The third level includes specialized suggestions and information for the individual or their partner to improve the woman's lifestyle after abortion. The fourth level involves intensive therapy and requires referral to a specialist in gynecological and obstetric rehabilitation.<sup>17</sup>

A nursing care plan for post-abortion counseling can be derived from the PLISSIT model, which offers a comprehensive framework, addressing post-abortion issues individually. In this model, women are allowed to discuss freely about their post-abortion troubles, limited information is provided based on the women's needs, and specific guidance is offered to solve their post-abortion problems and enhance their lifestyle.<sup>18</sup>

Finally, special therapy is provided for those who require further intervention. The PLISSIT acronym consists of four intervention levels, ranging from basic to complex: P-Permission, LI-Limited Information, SS-Specific Suggestions, and IT-Intensive Therapy. By applying the first three stages of this model, 80 to 90% of post-abortion problems can be resolved.<sup>19</sup>

One of the most widely used interventions in evaluating and managing post-abortion issues is the PLISSIT model. This model includes four steps: Permission, Limited Information, Specific Suggestions, and Intensive Therapy. It provides a framework for healthcare providers to apply effective strategies to address post-

abortion concerns. Healthcare providers play a crucial role in educating and providing psychological support to women affected by post-abortion conditions.<sup>20</sup>

## Aim of the study

The current study was conducted to evaluate the impact of counseling based on PLISSIT model on women's knowledge regarding modern educational information about abortion.

## Research hypothesis

Women's modern educational information about abortion will be improved after implementation of the counseling sessions Based on the PLISSIT model.

## Subject and method

### Technical design

The technical item includes research design, setting, subject, and tools for data collection.

### Research design

A quasi-experimental (pre- and post-test) research design was used in this study.

### Setting

The current study was conducted at the post-natal unit, which is affiliated with the department of obstetrics and gynecology at Beni-Suef University Hospital.

## Subjects

### Sample type

A convenient sample of 92 women who had abortions in the previously mentioned setting.

### Tools of data collection

**A Structured interview questionnaire:** This questionnaire was designed by the researcher based on reviewing related literature, and it was written in simple Arabic. It was concerned with demographic characteristics of the studied women after abortion, which included type family and occupation, family income, and area of residence.

### Women's knowledge regarding abortion and management

This tool was adapted from *Foster et al.*, it was used to assess women's knowledge regarding abortion after being translated into Arabic by the researcher.<sup>21</sup>

It consists of (15) questions and reflects modern educational information on abortion as normal weight gain during pregnancy, the responsible person for guidance and advice after abortion, and the guidelines for the crisis after abortion (**15 items with 15 points**).

### Scoring system

Total global score of 15 questions with 15 points, formed of multiple choice (incorrect = zero and correct = 1). These points were summed and converted into a percent score. It was classified into two categories according to the following:

Ø Unsatisfactory knowledge if total score < 60%, which means < 9 points.

Ø Satisfactory knowledge if the total score is  $\geq 60\%$ , which means  $\geq 9$  points.

### Information technology

This tool was developed by the researcher after reviewing the related literature review and was used to assess the impact of social networking sites on women after abortion.<sup>22-23</sup> It consists of ten (10) items:

### Scoring system

The total global score of 10 questions with 20 points was rated on a three-point Likert scale as (always = 0, sometimes = 1, and never = 2). These scores were summed and converted into a percent score. It was classified into three categories according to the following:

Ø Poor if total score  $< 50\%$ , which means  $< 10$  points.

Ø Moderate if total score is  $50\% - < 70\%$ , which means  $10 - < 14$  points.

Ø Good if total score is  $\geq 70\%$ , which means  $\geq 14$  points.

### Tool validity and Reliability

Face and content validity were established by a five-expert panel from Beni-Suef University's nursing and medicine faculties. Following expert evaluation and minor modifications for clarity, relevance, comprehensiveness, simplicity, and applicability, the reliability of women's information technology was confirmed with a Cronbach's alpha coefficient of 0.732.

### Operational design

The operational design includes a preparatory phase, supportive material, tools validity and reliability, a pilot study, and fieldwork.

The study involved a preparatory phase for literature review and tool development based on the PLISSIT model, securing approval from the Faculty of Nursing dean and Beni-Suef University Hospital manager. Supportive material included an Arabic booklet designed to inform women about abortion and enhance their post-abortion recovery. A pilot study on 9 women confirmed the tools' applicability, with these participants included in the main sample. Fieldwork commenced after obtaining necessary approvals, with the researcher interviewing post-abortion women in the post-natal unit, obtaining oral consent, and collecting data over six months (mid-February to mid-August 2024) by visiting the hospital three days a week during morning and afternoon shifts. In evaluation Phase, conducted four months post-intervention, the researcher assessed the impact of post-abortion counseling, guided by the PLISSIT model, on women's lifestyles. This one-month evaluation phase utilized the same assessment tools as the initial phase, delivered through video calls (Zoom) or home visits, with a reiterated structured format to quantify the counseling's effect.

### Data collection included 4 phases as follows

The study outlines a three-phase approach to post-abortion counseling. Phase I (Assessment) involved collecting socio-demographic and obstetrical/gynecological history, assessing baseline knowledge about abortion, understanding women's lifestyles post-abortion, and gathering information for pre-counseling using the PLISSIT model. Phase II (Planning) focused on scheduling counseling sessions based on individual assessments and planning session objectives, learning content, setting, methodology, media, and evaluation tools. Phase III (Implementation) involved one-on-one interactive counseling sessions, each lasting 45 minutes to an hour,

conducted in the post-natal unit waiting area.

The summarization task involved a study conducted using the PLISSIT model, focusing on post-abortion support for women.

Permission (P) The study began with obtaining verbal consent in a private setting, explaining the study's purpose and voluntary nature. Rapport was built through open-ended questions, active listening, and discussions about abortion knowledge and lifestyle changes.

Limited Information (LI) Accurate information on abortion, its causes, complications, and healthy post-abortion practices was provided verbally and through a booklet. Misconceptions were corrected, and emphasis was placed on healthy habits, nutrition, physical activity, hygiene, social relationships, and spiritual connection, along with guidance on resuming sexual activity.

Specific Suggestions (SS) Individualized advice was offered, including promoting a balanced, iron-rich diet, reducing or quitting smoking, recommending stress management techniques, and addressing fears related to future pregnancies and sexual relations. The goal was to support women in adopting healthy lifestyles post-abortion, with practical, realistic, and tailored suggestions.

Intensive Therapy (IT) Women exhibiting signs of severe emotional or psychological distress were referred to specialized mental health services. The provided advice included stopping smoking, using natural sources for uterine cleaning post-abortion, prioritizing sleep, seeking social support, adopting healthy habits like exercise and diet, using vaginal lubricants, and utilizing tools to enhance lifestyle. The study utilized supportive materials like pictures, a laptop, and videos to facilitate understanding of the post-abortion counseling booklet. No cases required referral to a sex therapist, social worker, or medical/psychological specialist. This phase took 4 months.

### Ethical considerations

Research approval was obtained from the Beni-Suef Scientific Ethical Committee of the Faculty of Medicine (Approval number: FMBSUREC/03102023). Participants were informed about the study's goals, guaranteed anonymity and confidentiality, and advised of their right to withdraw.

### Statistical design

Descriptive statistics, including means and standard deviations, summarized data presented in tables. Statistical analysis was conducted using SPSS version 26. Qualitative data were quantified as percentages and compared using the chi-square test. The student's t-test was used for quantitative data, especially with large cell sizes. Significance was set at  $P < 0.05$ , with  $P < 0.001$  denoting high significance (\*). Pearson correlation assessed relationships between variables.

### Results

Table 1 shows that, most of the studied women (81.5%) were not working, more than half (58.7%) of them were from rural areas, more than three-quarters (76.1%) of them had insufficient monthly income and more than half (58.7%) of them had extended family type.

Table 2 illustrates that, less than one-half (45.7%) of the studied women had correct knowledge regarding the responsible person for guidance and advice after abortion which improved posttest to 65.2%. There was a statistically significant improvement among the studied women regarding modern educational information on abortion posttest at ( $p$  value  $\leq 0.05$ ).

**Table 1** Percentage distribution of the studied women regarding to their socio-demographic characteristics

Items	No.	%
<b>Job</b>		
Working	17	18.5
Housewife	75	81.5
<b>Residence</b>		
Rural	54	58.7
Urban	38	41.3
<b>Monthly income</b>		
Sufficient	22	23.9
Insufficient	70	76.1
<b>Family type</b>		
Nuclear	38	41.3
Extended	54	58.7

**Table 2** Percentage distribution of the studied women regarding to their knowledge about modern educational information on abortion

	Pretest				Posttest					
Modern educational information on abortion	Correct		Incorrect		Correct		Incorrect		X <sup>2</sup>	p value
	No.	%	No.	%	No.	%	No.	%		
Normal weight gain during pregnancy	36	39.1	56	60.9	55	59.8	37	40.2	7.042	0.008**
Responsible person for guidance after abortion	42	45.7	50	54.3	60	65.2	32	34.8	10.114	0.001**
Guidelines for the crisis after abortion	31	33.7	61	66.3	56	60.9	36	39.1	4.03	0.045*
Duration of rest after abortion	37	40.2	55	59.8	61	66.3	31	33.7	8.717	0.003**
Time that woman return to normal after abortion	39	42.4	53	57.6	63	68.5	29	31.5	10.886	0.001**
Time starting of ovulation begin after abortion	32	34.8	60	65.2	56	60.9	36	39.1	7.053	0.008**
Take a shower after abortion	34	37	58	63	64	69.6	28	30.4	4.544	0.033*
Period to uterus return to normal after abortion	29	31.5	63	68.5	62	67.4	30	32.6	5.297	0.021*
Time of sexual relationship begin after abortion	35	38	57	62	67	72.8	25	27.2	7.684	0.006**
Contraceptive method after abortion	40	43.5	52	56.5	65	70.7	27	29.3	4.687	0.030*
Environmental factor improving women's condition	30	32.6	62	67.4	69	75	23	25	9.286	0.002**
Effective life style to reduce incidence of abortion	38	41.3	54	58.7	66	71.7	26	28.3	4.576	0.032*
Nutritional factors help reduce risk of abortion	34	37	58	63	70	76.1	22	23.9	6.587	0.010**
Recommendation regarding physical activity to reduce incidence of abortion	30	32.6	62	67.4	74	80.4	18	19.6	11.822	0.000**
Basic recommendation regarding alcohol consumption to reduce risk of abortion	33	35.9	59	64.1	69	75	23	25	7.684	0.006**

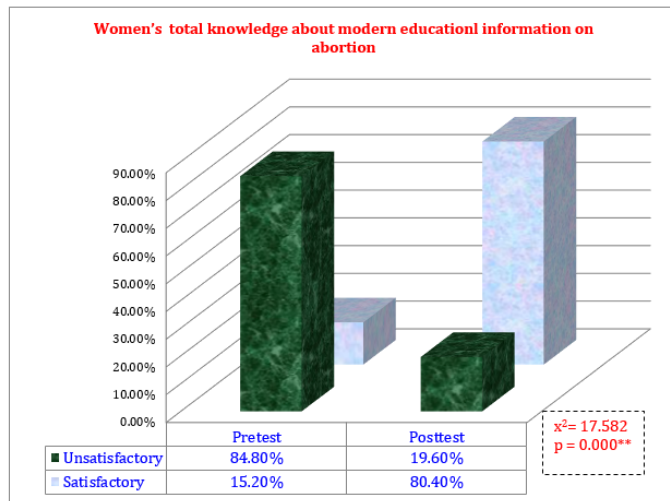
\* Statistically significant at  $p \leq 0.05$

\*\* High statistical significant at  $p \leq 0.01$

Figure 2 illustrates that, less than one fifth (15.2%) of the studied women had satisfactory knowledge regarding modern educational information on abortion pretest which improved posttest to 80.4%.

There was a statistically significant improvement among the studied women regarding knowledge about modern educational information on abortion posttest at  $p$  value  $\leq 0.01$ .



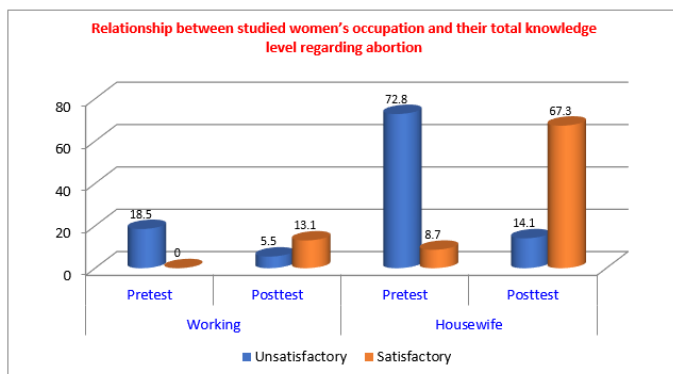


\* Statistically significant at  $p \leq 0.05$

\*\* High statistically significant at  $p \leq 0.01$

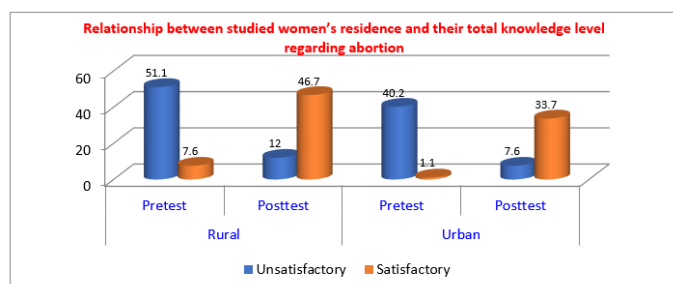
**Figure 2** Percentage distribution of the studied women regarding to their knowledge level about modern educational information on abortion

Figure 3 summarizes the relation between women's occupation and their knowledge post abortion during pre and post counseling. There was no statistically significant relation between the studied women' total knowledge level and their job. It reveals that 72.8% of studied women who hadn't working had unsatisfactory answer knowledge before the counseling which improved to 14.1% unsatisfactory answer post implementation of counseling sessions.



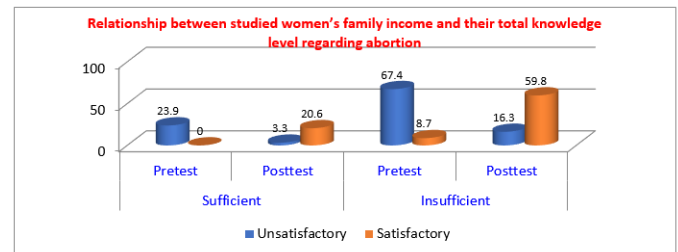
**Figure 3** Relationship between studied women's occupation and their total knowledge level regarding abortion

Figure 4 shows the relation between women's place of residence and their knowledge post abortion during pre and post counseling. Additionally, it reveals that 51.1% of studied women who lived in rural had unsatisfactory answer knowledge before the counseling which improved to 12% unsatisfactory answer post implementation of counseling sessions.



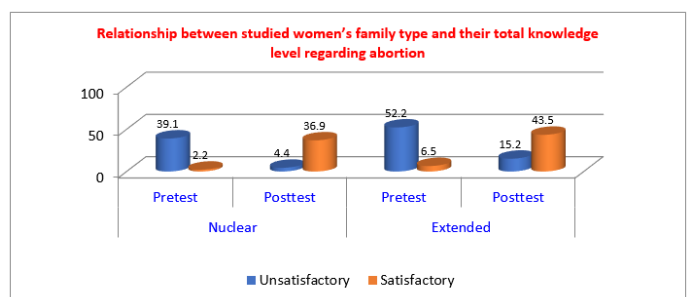
**Figure 4** Relationship between studied women's residence and their total knowledge level regarding abortion

Figure 5 portrays the relation between women's monthly income and their knowledge post abortion during pre and post counseling. It reveals that 67.4% of studied women had insufficient income had unsatisfactory answer knowledge before the counseling which improved to 16.3% unsatisfactory answer post implementation of counseling sessions.



**Figure 5** Relationship between studied women's family income and their total knowledge level regarding abortion

Figure 6 illustrates the relation between women's family type and their knowledge post abortion during pre and post counseling. It reveals that 52.2% of studied women had extended family type had unsatisfactory answer knowledge before the counseling which improved to 15.2% unsatisfactory answer post implementation of counseling sessions.



**Figure 6** Relationship between studied women's family type and their total knowledge level regarding abortion

## Discussion

Several definitions of miscarriage are found in the literature, but it is widely accepted according to the World Health Organization (WHO), which defines miscarriage as the involuntary loss of a fetus weighing less than 500 g before the 20th gestational week (GW). Meanwhile, the Chinese Medical Association Obstetrics and Gynecology (CMAOG) define miscarriage as the involuntary loss of a fetus weighing less than 1,000 g before the 28th GW.<sup>24</sup>

The current study was conducted to evaluate the impact of counseling based on PLISSIT model on women's knowledge regarding modern educational information about abortion. Regarding knowledge of the sub-items of modern educational information on abortion, the present study reported that more than two-fifths of the studied women had correct knowledge about the responsible person for guidance and advice after abortion, which improved to around two-thirds post-counseling. There was a statistically significant improvement among the studied women in all items of modern educational information on abortion following counseling. From the researcher's point of view, the improvement in women's knowledge was due to the use of an Arabic booklet containing attractive images and simple, clear information.

Maternity nurses play a vital role in improving antenatal and postnatal care by providing education and support to pregnant

and postpartum women. Their services include health promotion, psychosocial support, and counseling.<sup>25-38</sup>

After implementing counseling sessions, women who had experienced abortions displayed better knowledge about the sub-items of modern educational information on abortion, aided by various teaching methods and the use of Arabic booklets that enhance understanding. These booklets, featuring visual elements, facilitate knowledge retention, aligning with Edgar Dale's NTL's Pyramid of Learning, which indicates that retention is higher with audiovisual aids and discussions.<sup>39-49</sup>

This finding is in accordance with McMahon et al. (2024), who conducted a recent study entitled "My Health in My Hands: Improving Medication Abortion Knowledge and Closing Disparities with a Community-Led Media Intervention." They found that overall, the intervention appeared effective in improving participants' knowledge regarding abortion.<sup>50</sup>

This study is also in line with Cleverley et al. (2024), who conducted a recent study entitled "Aya Contigo: Evaluation of a Digital Intervention to Support Self-Managed Medication Abortion in Venezuela." They revealed that there was a statistically significant improvement in the participants' knowledge about abortion following the digital intervention.<sup>51</sup>

Regarding relation between socio-demographic characteristics of the studied women and their total knowledge about abortion during pre and post counseling, the present results revealed that, there was no statistically significant relation between the studied women' total knowledge level and their socio-demographic characteristics during pre and post counseling.

For women's occupation, however, there was no statistically significant relationship between the studied women' total knowledge level and their job, but there was improvement in knowledge among non-working women post implementation of counseling sessions. This may be attributed to the fact that experiencing abortion often represents a profound physical and emotional event that prompts women to actively seek information regarding women's lifestyle, recovery, and future fertility, especially for non-working women, who may have more available time.<sup>52-57</sup>

This is partially supported by the study of Salem & Nour, which found no significant link between employment and reproductive health knowledge. Additionally, for women's residence, there was improvement in knowledge among women living in rural areas post implementation of counseling sessions. The researcher attributes this to better access to healthcare facilities and media awareness in urban settings.<sup>58</sup> This corresponds with a study conducted by Gabr & Youssef, which suggested better access to information in urban areas.<sup>59</sup>

With respect to monthly income, women with sufficient income showed a slight improvement compared to those with insufficient income. This finding is consistent with a study by Farouk et al., who emphasized that financial stability plays a role in health-seeking behavior.<sup>60</sup> The researcher believes that income enables women to access supplementary sources of information.

Finally, regarding family type, nuclear families showed more noticeable knowledge improvement than extended one's post implementation of counseling sessions. This matches the observations of Tawfik & Salem (2020), who noted that women in nuclear families tend to make more independent health decisions. The researcher believes that decision-making autonomy in nuclear settings supports better engagement with counseling.<sup>61</sup>

## Conclusion

Based on the current study results, a statistically significant improvement in modern educational information on abortion was observed among the women posttest. However, no significant relationship was found between their total knowledge level and their job.

## Recommendation

Creating an educational program to increase women's understanding of social media usage, maximizing its benefits, exposing them to the most reliable and authentic social media platforms, and demonstrating how to use these tools to enhance their post-abortion lifestyles.

## Acknowledgments

None.

## Conflict of interest

The author declares that there is no conflicts of interest.

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