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Application of FOCUS-PDCA in Management of Patients after Induced Abortion

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Abstract: *Objective To explore the effect of FOCUS-PDCA applied in the management of patients after induced abortion. Methods A total of 2930 patients undergoing induced abortion in Shaanxi Provincial People's Hospital from January 2019 to December 2020 were enrolled in the study, who were divided into control group and observation group in chronological order. The control group was given routine preoperative education and postoperative management, while the observation group introduced the FOCUS-PDCA program on the basis of the conventional process. The contraceptive knowledge level, PAC related knowledge (including the precautions of nursing after induced abortion and the harm of induced abortion to female reproductive health), recovery rate of sexual life and repeated abortion rate were observed and compared between two groups. Results The familiarities of contraceptive knowledge and PAC related knowledge in observation group were significantly improved compared with that before intervention ($P < 0.05$), the recovery rate of sexual life within 1 month after surgery decreased ($P<0.05$), and repeated abortion within 1 year of follow-up also decreased ($P<0.05$). Conclusion FOCUS-PDCA can significantly improve the quality of long-term management of induced abortion patients, which is worthy of promotion in clinic.*

Keywords: *FOCUS-PDCA, Induced abortion, Patient management*

1. Introduction

As a public health and social problem, induced abortion has attracted worldwide attention. According to the Abortion Worldwide 2017, the global annual number of abortions in 2010-2014 was about 55.9 million[1], and the number of induced abortions in China is about 9 million per year in recent years [2], of which nearly half are repeated abortions [3, 4]. At present, the total number of induced abortions in China is declining, while the proportion of abortions among adolescents, unmarried and floating population has increased, especially with the change of moral values, the phenomena of premarital sex and unmarried pregnancies have increased [5], and the abortion shows an increasing trend year by year.

Although the overall safety factor of induced abortion is high, it is a traumatic operation after all. Due to some patients' lack of awareness of surgical hazards and postoperative care, improper management after induced abortion may lead to complications and side effects such as pelvic inflammatory disease, intrauterine adhesions, abnormal menstruation, and secondary infertility. In particular, repeated abortion and adolescent abortion can cause serious irreversible damage to reproductive health, even death [6-9] and varying degrees of psychological trauma [10-12]. Therefore, the FOCUS-PDCA quality management tool was introduced in this study, through the analysis of the focus problems, understands the defects in each link and solves them accordingly, so as to continuously improve the quality of patient management after induced abortion.

2. Materials and Methods

2.1. Clinical Data

A total of 2930 women undergoing induced abortion in Shaanxi Provincial People's Hospital from January 2019 to December 2020 were selected as the subjects. The patients were divided into control group (January - December 2019) and observation group (January - December 2020) in chronological order. The basic data of the two groups (including age, menopause days, childbearing history, unexpected

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pregnancy (yes, no), reasons for contraceptive failure, and fertility plan in two years (yes, no)) were compared. The results showed that there was no statistically significant difference in the data before management between the two groups (P > 0.05), as shown in Table 1. This study was approved by the Ethics Committee of Shaanxi Provincial People's Hospital, and all patients gave informed consent. Inclusion criteria: those who diagnosed as intrauterine pregnancy by B ultrasound, and unwanted pregnancy within 10 weeks of gestational age.

Table 1: Comparison of basic data of two groups

Item	Observation group (n=1496)	Control group (n=1434)	T/χ^2 value	P value
Age (year, $\bar{x} \pm s$)	29.06±6.056	28.75±6.039	1.374	0.170
Menopause days (day, $\bar{x} \pm s$)	48.85±7.321	48.81±7.399	0.165	0.869
Marriage (number, %)			0.235	0.889
Married	868 (58.0)	837 (58.4)		
Unmarried	625 (41.8)	593 (41.4)		
Divorce / widowhood	3 (0.2)	4 (0.3)		
Childbearing (number, %)			1.428	0.223
yes	754 (50.4)	755 (52.6)		
no	742 (49.6)	679 (47.4)		
Unexpected pregnancy (number, %)			0.007	0.934
yes	1401 (93.6)	1344 (93.7)		
no	95 (6.4)	90 (6.3)		
Reasons for contraceptive failure (number, %)			2.754	0.839
Safety period	33 (2.2)	28 (2.0)		
Condoms	1047 (70.0)	1016 (70.9)		
Contraceptives	1 (0.1)	3 (0.2)		
Fertility device	3 (0.2)	3 (0.2)		
Emergency contraceptives	48 (3.2)	50 (3.5)		
In vitro ejaculation	38 (2.5)	28 (2.0)		
Not contraception	326 (21.8)	306 (21.3)		
Fertility plan in two years (number, %)			0.095	0.758
yes	140 (9.4)	139 (9.7)		
no	1356 (90.6)	1295 (90.3)		

2.2. Methods

2.2.1. Grouping Methods

The control group was given routine preoperative education and postoperative management of induced abortion. While the observation group introduced the FOCUS-PDCA program on the basis of the conventional process, which was divided into five steps of FOCUS and four cycles of PDCA. And it was composed of nine steps: find (F), organize (O), clarify (C), understand (U), select (S), plan (P), do (D), check (C) and act (A).

2.2.2. Implementation Process

(1) Find (F)

Through retrospective analysis, it was found that there were several problems in patients undergoing induced abortion in the past outpatient department: the knowledge of contraception was not firmly grasped, the nursing precautions after induced abortion were not clear, and the harm of induced abortion to female reproductive health was not understood.

(2) Organize (O)

A continuous quality improvement working group led by outpatient leading official for the long-term management of induced abortion patients was established, and its responsibility was to coordinate personnel and materials in quality improvement.

(3) Clarify (C)

Through the survey analysis of outpatient PAC, it is found that the preoperative education of abortion in our hospital is not in place, and the knowledge of contraception, postoperative precautions and surgical hazards need to be further strengthened.

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(4) Understand (U)

By organizing department meetings to brainstorm, the current problems in the long-term management of induced abortion patients in our hospital were summarized into three aspects: 1) The receiving doctors do not have enough time to popularize the knowledge of induced abortion and contraception to the patients and their families for the large number of outpatients. 2) The staffing is relatively insufficient for the heavy business of department, while there are many patients and the related data is complicated, which requires a special person to be responsible for the management. 3) Due to the differences in age, knowledge level, understanding ability and personality of outpatient abortion patients, the learning time and mastery degree are different in the same education content, , and one-to-one individual education is required.

(5) Select (S)

For the above reasons, some improvement measures were proposed: 1) the number of outpatient doctors in the same period was expanded, and the appointment system was implemented to effectively control the number of daily visits. 2) A special post was set up and a consultant was responsible for preoperative education and one-to-one PAC service of patients. PAC-related knowledge was explained in detail for patients, including precautions for nursing after induced abortion, harm of induced abortion surgery to female reproductive health, oral contraceptives after induced abortion, use and specific operations of intrauterine contraceptive rings, condoms and other contraceptive methods. And the following information was recorded in detail, such as causes of this induced abortion, recent fertility plan, whether contraceptive measures will be used after abortion and how to contraception, previous abortion, postoperative review record.

(6) Plan (P)

According to the improvement measures, the improvement objectives were determined as follows: apply to the hospital to expand the clinic and arrange doctors, arrange special posts and train relevant personnel, and produce PAC related knowledge brochures and record popular science videos, distribute on-site and publicize on fixed network platforms.

(7) Do (D)

The receiving doctor completes the medical history inquiry and conducts the first visit and education, including basic contraceptive knowledge, surgical hazards and postoperative precautions, etc. The full-time doctors conduct preoperative education and one-to-one PAC service, distribute paper brochures and teach patients to use network platform to learn the popular science video. The liaison personnel timely records the existing problems and communicates with the improvement team leader, doctors and nurses on times to ensure that the quality of long-term management of induced abortion patients was improved.

(8) Check (C)

The leader of the long-term management continuous quality improvement team checks the implementation of the improvement measures from time to time. And the PAC-related knowledge of patients after improvement, repeated abortion rate, recovery rate of sexual life within 1 month after operation were collected, summarized and analyzed to detect the effect of quality improvement.

(9) Act (A)

Through the implementation of FOCUS-PDCA program, the optimized long-term management of induced abortion patients is promoted in the department. We will enrich the staff of outpatient special posts, reduce the impact of staff changes on work, and enter the next FOCUS-PDCA procedure cycle to further optimize the long-term management of abortion patients in our hospital.

2.2.3. Evaluation Method

Evaluation index mainly includes: 1) patient contraceptive knowledge level, whether the score is improved, 2) whether the awareness of PAC related knowledge such as the precautions of nursing after induced abortion and the harm of induced abortion to female reproductive health is improved, 3) whether the recovery rate of sexual life within 1 month after surgery is reduced, 4) whether the repeated abortion rate is decreased.

2.2.4. Statistical Method

All data were analyzed by SPSS software, measurement data were expressed as $\overline{x} \pm s$, and t-test was used for the comparison. The enumeration data were expressed as percentages, and the χ^2 test was used

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for the comparison between the two groups. P<0.05 indicated that the difference was statistically significant.

3. Results

3.1. Comparison of Contraceptive Knowledge

Before intervention, there was no significant difference in contraceptive knowledge between observation group and control group (P > 0.05). While after intervention, the familiarity of contraceptive knowledge in the observation group was significantly improved compared with that before intervention (P < 0.05). Within 1 year of follow-up, the proportion of patients without repeated abortion in observation group was significantly higher than that in control group (P<0.05), as shown in Table 2.

Table 2: Comparative result of contraceptive knowledge

Group		Number	$\bar{x}$ ±s	P value
Observation group before intervention		1434	32.30±14.726	0.498
Control group before intervention		1496	31.93±14.489	
Observation group before intervention		1434	32.30±14.726	0.000
Observation group after intervention		1434	47.60±14.810	
Repeated abortion (number, %)				P value
Observation group	yes	48 (3.3)		0.037
	no	1386 (96.7)		
Control group	yes	73 (4.9)		
	no	1423 (95.1)		

3.2. Comparison of PAC related Knowledge Familiarity

Before intervention, there was no significant difference in familiarity with PAC related knowledge between two groups (P > 0.05). After intervention, the familiarity of observation group with PAC-related knowledge was improved compared with that before intervention (P < 0.05). And there was also significant difference in the recovery rate of sexual life between two groups within 1 month after the operation (P < 0.05), as shown in Table 3.

Table 3: Comparative result of PAC related knowledge

Group		Number	$\bar{x}$ ±s	P value
Observation group before intervention		1434	37.43±15.347	0.538
Control group before intervention		1496	37.10±13.764	
Observation group before intervention		1434	37.43±15.347	0.000
Observation group after intervention		1434	59.01±15.542	
Recovery rate of sexual life within 1 month after operation (number, %)				P value
Observation group	yes	171 (11.9)		0.010
	no	1263 (88.1)		
Control group	yes	227 (15.2)		
	no	1269 (84.8)		

4. Discussion

As a remedy for contraceptive failure, induced abortion threatens women's reproductive health and physical and mental health to varying degrees. In clinical work, we found that the abortion population is very large every year, and many of them are young women. The causes of accidental pregnancy are mostly contraceptive failure, non-standard use or non-use of contraceptive measures. At the same time, these patients have insufficient understanding of induced abortion and its hazards， and some patients even have serious misunderstandings. More patients, especially young patients, do not have a good understanding of the nursing precautions after induced abortion, which leads to the recovery of sexual life in short term after the operation, and it causes pelvic inflammation or re-pregnancy on occasion, which seriously endangers the reproductive health of patients.

According to the previous clinical work experience, it is found that the routine preoperative education

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and postoperative management of induced abortion did not fully meet the needs of patients, especially for some patients with low educational level, poor acceptance and lack of knowledge. This requires us to find more suitable methods for these groups to improve the quality of postoperative management. FOCUS-PDCA model is a continuous quality improvement model established by Hospital Corporation of America (HCA) in the 1990s. Based on the PDCA cycle, the FOCUS process is introduced, and the preparatory stage is divided into five steps. The work of each step is concretized, which improves the accuracy of quality improvement. The implementation process is mainly led by the improvement group, which is carried out step by step according to the improvement process formulated in advance, and the operation is simple.

After 2 years rectification, the evaluation results in December 2021 showed that the patient's knowledge of contraception was significantly improved, and the answer accuracy of PAC related knowledge such as precautions for nursing after induced abortion and harm of induced abortion to women's reproductive health is significantly improved. Besides, the recovery rate of sexual life within 1 month after surgery decreased, and the rate of repeated abortion within 1 year of follow-up also decreased. It can be seen that the quality of long-term management of induced abortion patients has been effectively improved. In addition, we strictly follow the steps in the process of project implementation. And the paper brochures and network publicity materials are designed, which not only increases the team cohesion, but also enhances the team cooperation ability.

Authors' Contributions

Jialan Chen contributed to the data collection and manuscript writing. Fan Wang, Lihong Chen and Qinfeng Liu contributed to the data collection. Xin Shen helped perform the data analysis. All authors have read and approved the manuscript.

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