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EFFECTS OF GROUP COUNSELLING ON KNOWLEDGE, ATTITUDE AND PREFERENCE FOR DELIVERY METHOD IN WOMEN REFERRED TO COMPREHENSIVE HEALTH CENTRES OF HAMADAN FOR PRE-PREGNANCY CARE

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ABSTRACT

Objective: To investigate the effects of group counseling on knowledge, attitude and preference for birth method in women who received pre-pregnancy care.

Methodology: This randomized clinical trial (IRCT20120215009014N239) study with two-group was conducted at Hamadan Comprehensive Health Centers from November 1, 2018 to March 20, 2019. A total of 240 women with pre-pregnancy records were randomly selected and then 90 eligible women were analyzed after being classified into intervention and control groups using the sequential allocation. The intervention group participated in four group counseling sessions. Data collection tool was a questionnaire containing demographic information, knowledge, attitude and preference for birth method. Data was analyzed using SPSS 20; descriptive and analytical tests were applied, where needed.

Results: The mean age in two groups (Intervention & Control) was (26.73±4.02, 27.20±4.36) years respectively. Mean scores of knowledge and attitude (23.61±7.44 vs 23.78±6.17 & 67.68±12.68 vs 70.62±11.92 respectively) with preference for birth method had no significant difference between the two groups before the intervention, but the mean score of knowledge, and attitude was significantly higher in the intervention group after the intervention than the control group (43.88±4.85 vs 22.09±4.79 & 85.06±7.49 vs 66.87±7.41 respectively) ($p < 0.001$). In delivery type preference, vaginal delivery preference was remarkably increased from 61.4% to 95.5% with p -value < 0.001 .

Conclusion: Group counseling affected the women's knowledge, positive attitude towards vaginal delivery and helping them to have informed preferences for birth method.

Keywords: Caesarean section; Vaginal birth; Knowledge; Attitude; Counseling.

INTRODUCTION

Delivery is a physiological and spontaneous process without need for intervention and it has been performed with its natural procedure for many years.¹ But in recent years, the rate of cesarean delivery has increased. Cesarean is considered as the most common surgery and a common obstetric procedure in the world. It can save lives of many mothers and infants under certain circumstances.² It should not be thought that the cesarean section can replace the vaginal delivery. Due to adverse effects associated with cesarean section, the World Health Organization (WHO) sought to consider a favorable horizon of 15% for the cesarean section.³ The high rate of cesarean section has become a public health concern in the world.⁴ Maternal mortality due to elective cesarean section is 2 to 3 times higher than

vaginal delivery; and number of lost years due to premature death and disability-adjusted life year (DALY) is 22.2 years for cesarean section and 8.8 years per 1000 cases of delivery for vaginal delivery.⁵ The latest studies in the world show that one in five women in the world has experienced a cesarean section. The rate of cesarean section in Latin America, the Caribbean and South America is about 40.5% of all births (at a rate of 42.9%) and Africa was the first country with a low rate of cesarean section (7.3%).⁶ Some countries, including Egypt, Turkey, Iran, the Dominican Republic, Georgia and China, have experienced significant increases in cesarean rates over the past 24 years, with more than a 30% increase in cesarean rates.⁷ Statistics indicate that the tendency to elective cesarean section has increased several times as much as the world standard in Iran in recent years. Iran is ranked second after

Brazil in terms of cesarean section. Iran is also ranked first in terms of cesarean among countries in the Middle East.⁸ In Iran, 50-60% of deliveries are performed by elective cesarean section⁹ and rates of elective cesarean section are 47.5% in public hospitals and 79.1% in private hospitals of Hamadan.¹⁰ Statistics indicate that about 75% of cesarean deliveries are unnecessary and elective in Iran.¹¹ Reducing elective cesarean section among low-risk women is a goal of the Healthy People 2020 plan.⁸ According to studies, the increased cesarean section in primiparous women and repeated cesarean section followed by primary cesarean section are significantly important causes of increased cesarean delivery; hence, the total cesarean section rate can decrease by reducing primary cesarean section rate and thus repeated cesarean section.¹² The lack of knowledge, misinformation, and a negative attitude towards the vaginal delivery of pregnant women are unjustified medical reasons for increasing number of cesarean delivery.¹³⁻¹⁵ According to a study by Gamble and Carey in 2001 on determinants of women's preference for different delivery methods, the labor pain and lack of knowledge about risks of cesarean delivery were causes of the selection of cesarean delivery by most women.¹⁶ Many studies have found midwifery training and counseling to reduce the rate of cesarean section to be effective.¹⁷ Counseling is a way to raise knowledge and change attitude. It is a process of helping the public to achieve better compatibility with themselves and others, emotional and social development, independence, and taking the responsibility.¹⁸ Health counseling is a psychological-educational process; and like health promotion, it can include all three levels of prevention. The counselor can advise clients individually or in a group to reduce their risk and help clients maintain health-promoting and disease-preventing behavior based on health counseling.¹ One of the counseling methods is group counseling. Group counseling is a series of organized ac-

tivities that have the aspect of treatment and prevention. The purpose of group counseling is to solve the problem in the first place and to prevent it from occurring in the next stage. Usually each member raises her problems in the group. She listens to the feedback and problems of other members and expresses her opinions, feelings and thoughts about them.¹⁹ Group counseling is a face-to-face conversation among several people in order to discuss interests, issues and problems that the group members have in relationships with themselves or others, and make rational decisions on the above-mentioned cases.²⁰ Pre-pregnancy care as a preventive medicine for midwifery plays an important role in maternal and fetal health. Attention to pre-pregnancy education is closely linked to the progress of any society. In this care, many of the complications affecting the pregnancy outcome can be diagnosed, reduced or controlled.²¹ Shahidi et al (2011) found the impact of pre-pregnancy care on women's knowledge and its persistence.²² Nosratabadi (2018) indicated the positive impact of health counseling on women's knowledge and attitude in choosing the delivery method.⁸ However, despite numerous interventions in reducing the rate of cesarean section, including childbirth preparation classes and extensive community training on normal vaginal delivery, there has not been a significant decrease in the cesarean rate.²³ Also, given the importance of pre-pregnancy counseling and education in maternal and neonatal health, this study was undertaken.

METHODOLOGY

This Randomized Clinical Trial (RCT) study with two groups (intervention and control groups) with pre-test and post-test stages was conducted at Hamadan Comprehensive Health Centers from November 1, 2018 to March 20, 2019. Two centers from each geographical area (north, south, west and east) of Hamadan and a total of 8 comprehensive health service centers

were selected randomly. 240 women with pre-pregnancy records in Sib system were selected from comprehensive health centers as a random number list, and then based on calculated sample size, 90 women were included in the study according to the inclusion criteria. At each clinic, individuals were selected by randomized block. The participants were classified into intervention (n=45) and control (n=45) groups (Figure 1). In a briefing, the researcher explained presented the self-introduction and explained the research purpose and methods, obtained written informed consent and explained how to complete the questionnaire. The invited people to the comprehensive health centers, completed the pre-test questionnaire by self-report under the questioner supervision. After a month of ending counseling sessions, the intervention group were called and asked to complete the post-test questionnaires by visiting comprehensive health centers. The present research was approved by the Research Council of Hamadan University of Medical Sciences and the Ethics Committee with a specific identity number of IR.UMSHA.REC.1397.404 and submitted to Clinical Trial Database with a code of IRCT20120215009014N239. All studied women received information about how to perform the project and agreed to participate in the study by signing consent forms. Women were explained that they could leave the study at any stage of project. The whole data of participants was kept confidential. The data of studied individuals or their names were not disclosed or given to any real or legal entity during each stage of data collection, data entry and final reporting. The sample size was calculated to be 90 based on the obtained data from a research by Rahimi Kian et al (2009)²⁴ based on the formula below and the $p_1=0.03$, $p_0=0.28$, test power of 90% and a 5% alpha error coefficient and sample loss of 20%.

$$n = \frac{(Z_{1-\alpha} + Z_{1-\beta})^2 (p_1 q_1 + p_0 q_0)}{(p_1 - p_0)^2}$$

The participants included married nulli-gravidas in the age range of 18-35 years and the inclusion criteria were as follows: no history of abortion and pregnancy, a desire to get pregnant in the next year, and referral for pre-pregnancy care, lack of infertility, lack of chronic diseases such as diabetes, chronic hypertensive heart disease, lack of history of mental illness based on the electronic files in Sib website. Exclusion criteria included displacement of residence during the study, absence of more than once in counseling sessions, and pregnancy during counseling sessions.

Questionnaires for the control group were completed before the intervention at the time of referral. This group received only routine pre-pregnancy care and also completed the post-test questionnaires by referring to the Comprehensive Health Centers within a month after the briefing. At the end of a session, a summary of training content and pamphlets was presented to the control group. The data collection instrument consisted of a three-section questionnaire. Sec-

tion 1: Demographic information including age, spouse's age, education level, spouse's education level, occupation, spouse's occupation, family income, duration of marriage, type of delivery. Section 2: Birth Knowledge Questionnaire with 25 questions; and Section 3: Attitude Questionnaire with 20 questions about method of childbirth. These questionnaire was researcher-made and derived from studies by Varghese et al²⁵ and Dogra et al²⁶ and literature reviews. The knowledge section questions were assessed according to options, namely vaginal delivery, cesarean section and no difference; and the minimum score was zero and maximum score was 50. The attitude section questions were measured on a 5-point Likert scale; and its minimum score was 20 and maximum score was 100. Finally, the women's preference for delivery method was measured by a two-choice question (normal vaginal delivery and cesarean section). To determine the validity of questionnaire, it was given to 8 experts of Hamadan Faculty of Nursing and Midwifery to determine its validity. The necessary corrections were made after receiving the

professors' views. To determine the reliability of questionnaire, it was given to 20 women with inclusion criteria who were not included in the study and they were asked to complete the questionnaire. The Cronbach's alpha coefficient of questionnaires was calculated and obtained 0.71 for knowledge questions and 0.86 for attitude questions.

The women in the intervention group were divided into 6 groups of 5 to 10 participants and each group participated in consultations separately. The researcher has the necessary certificates for consultation. Four sessions each lasting 60-90 minutes every week were held by the researcher for women in the counseling intervention group about delivery methods based on counseling steps in GATHER principles. GATHER principles include: 1 –Greeting, 2 –Ask, 3 –Tell, 4-Help, 5 –Explain, 6 –Refer.²⁷ The educational content is shown in box 1.

The training and counseling sessions were designed as follows:²⁷

Box1: Educational content of counselling sessions based on the principles of GATHER

	First session	Second session	Third session	Fourth Session
Objective	Familiarity and brief presentation about normal childbirth and cesarean section	Familiarity of mothers with the advantages and disadvantages of normal childbirth and cesarean section for mother and baby	Familiarity of women with how to perform normal childbirth and new and supportive methods to reduce the pain caused by it	Review the contents of the previous sessions and conclusion
Compliance with GATHER steps	Compliance with steps 1,2,3	Compliance with steps 2,3,4	Compliance with steps 3,4,5	Compliance with step 6
Consulting actions taken	-Familiarization of group members with each other, stating the goals of counseling sessions, -Providing conditions for establishing open relationships and communication -Emphasis on relationships and group dynamics Counseling for women to get acquainted with delivery methods, including, Introduction to the anatomy and physiology of the female genital system and the process of normal childbirth, general information about the method of cesarean section	-Consulting about the benefits of normal childbirth, including (no risk of anesthesia, reduced risk of infection and reduced heavy bleeding ...) -Discussion about women's beliefs and the effectiveness of cesarean section (modernity, no labor pain ...) as well as the complications of cesarean section, including (bleeding, infection, thromboembolism ...)	-Familiarity with the stages and process of normal childbirth and the nature of labor pains Consulting -Introducing methods to reduce the pain of normal childbirth, including pharmacological and non-pharmacological methods (breathing skills, massage ...). -Introduction and explanation about physiological delivery classes -Explanation and training about Kegel exercise	Summarize the contents of the previous sessions and provide questions and answers to clear up the ambiguities of women
Educational tools used	Whiteboards, color photos, videos and educational pamphlets	Whiteboards, educational pamphlets	Whiteboards, educational pamphlets	Whiteboards, videos and educational pamphlets

Table1: Comparison of demographic characteristics of two groups

Variables		Intervention group N=45	control group n=45	statistic	p-value
Age (years). M (SD)		26.73 (4.02)	27.20 (4.36)	t=-0.33*	0.74
Husband's age (years). M (SD)		30.61(3.57)	29.36(6.54)	Z=-0.37**	0.71
Duration of marriage (year). Mean (SD)		3.53(2.23)	3.04(2.20)	Z=-1.15**	0.25
Level of education. N (%)	Primary	1 (2.22)	2 (4.44)	$\chi^2=1.48$	0.75
	middle	4(8.89)	3(6.67)		
	High	10(22.22)	13(28.89)		
	academic	30(66.67)	27(60.00)		
Husband's education N (%)	Primary	2(4.44)	2(4.44)	$\chi^2=3.60$	0.29
	middle	10(22.22)	7(15.56)		
	High	11(24.44)	17(37.78)		
	academic	22(48.89)	19(42.22)		
Job status N (%)	Employed	8(17.78)	9(20.00)	$\chi^2=0.25$	0.62
	Housewife	37(82.22)	36(80.00)		
Husband's job status N (%)	Employed	44 (97.78)	40(88.89)	_***	0.06
	Un Employed	1(2.22)	5(11.11)		
Income N (%)	Less than 10 million Rials	10 (22.22)	10(22.22)	$\chi^2=3.78$	0.15
	Between 10 and 20 million Rials.	30(66.67)	26(57.78)		
	More than 20 million rials	5(11.11)	9(20.00)		
The method of delivery of close relatives N (%)	Vaginal delivery	30(66.67)	25(55.56)	$\chi^2=1.68$	0.19
	Cesarean section	15(33.33)	20(44.44)		
Friends' delivery method N (%)	Vaginal delivery	25(55.56)	19(42.22)	$\chi^2=1.45$	0.23
	Cesarean section	20(44.44)	26(57.78)		

* Student's t-test, ** Mann-Whitney U test, ***Fisher exact test and the rest Chi square test

Table 2: Comparison of knowledge scores between two groups by adjusting the before-intervention score

variable	Before intervention mean (SD)	Adjusted mean after intervention mean (SD)*	F**	p -value
Intervention group	23.61(7.44)	43.88(4.85)	459.66	<0.001
Control group	23.78(6.17)	22.09(4.79)		

* adjusted for the pre-intervention score

**ANOVA/ANCOVA

Table 3: Comparison of attitude scores between two groups by adjusting the before-intervention score

variable	Before intervention mean (SD)	Adjusted mean after intervention mean (SD)*	F**	p -value
Intervention group	67.68(12.68)	85.06 (7.49)	42.54	<0.001
Control group	70.62(11.92)	66.87 (7.41)		

* adjusted for the pre-intervention score

**ANOVA/ANCOVA

Data was analyzed using SPSS 20. The Kolmogorov-Smirnov test was used to check the normality of the quantitative data distribution. Two groups were compared for demographic and contextual variables by independent t-test or Mann-Whitney test in the case of quantitative data, and by the chi-square test and Fisher exact test in the case of qualitative data. Independent t-test was used to compare knowledge and attitude scores between the two groups and paired t-test was used for between-group comparisons. Analysis of covariance was used to adjust the effect of pre-test scores on outcomes. Chi-square test was used to compare both groups in terms of preference for birth method. Significance level was considered to be less than 0.05 in all statistical tests.

RESULTS

In the present study, 90 married nulli-gravidas, who were prone to pregnancy, were studied in both intervention and control groups. The mean (sd) of age of control and intervention groups was 27.02 (4.36) and 26.73 (4.02) years respectively. The majority of women in both groups had a university degree, and about 80% of them were housewives. Information about the other variables is available in Table 1. There was no statistically significant difference between the two groups in terms of these variables.

Comparison of mean scores of knowledge in the post-intervention stage shows that by controlling the effect of pre-test scores, the average knowledge score in the intervention group is significantly higher than the control group (43.88 (4.85), respectively, vs. 22.09 (4.79) respectively, p-value< 0.001) (Table2).

The findings of Table 3 show that the mean (sd) of attitude in the post-intervention stage in the intervention group was 85.06 (7.49) and in the control group was 66.87 (7.41) and this difference is also statistically

Table 4: Comparison of delivery type preference between the control and intervention groups

Study time	Intervention group		Control group		χ^2*	p-value
	Vaginal delivery N (%)	Cesarean section N (%)	Vaginal delivery N (%)	Cesarean section N (%)		
Before intervention	27 (61.4)	17 (38.6)	30 (66.7)	15 (33.3)	0.27	0.60
after intervention	42 (95.5)	2 (4.5)	29 (64.4)	16 (35.6)	13.26	<0.001

* Chi-square test

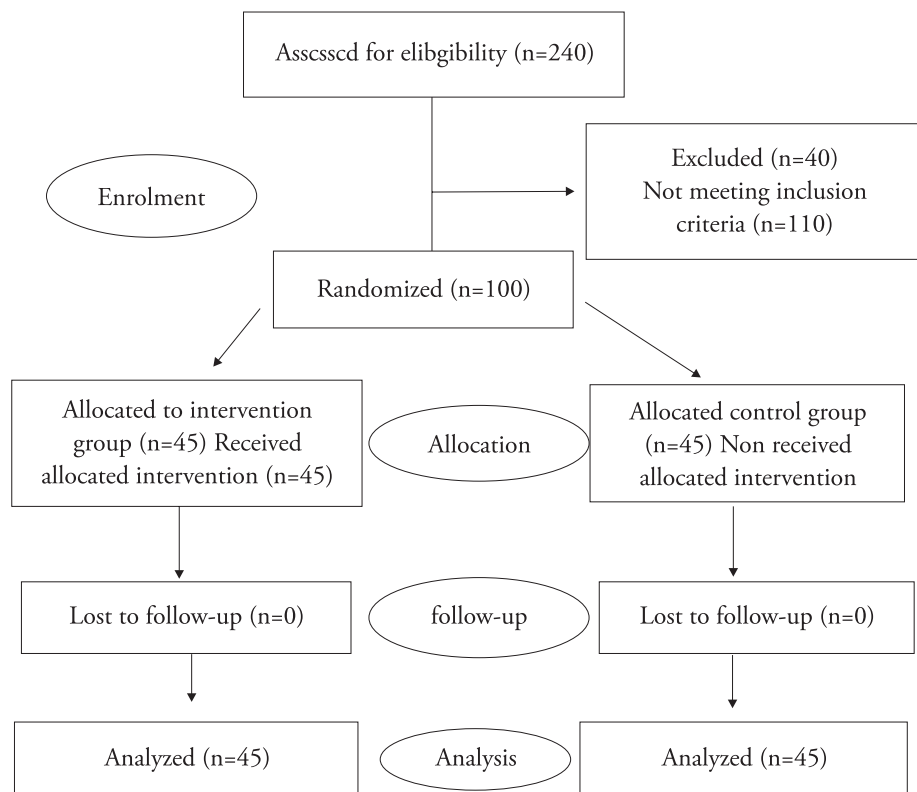


Fig. 1 Consort diagram of selecting the participants

significant ($p < 0.001$).

The preference for delivery method was compared in both groups before the intervention. The results indicated that there was no statistically significant difference between two groups in the pre-counselling phase in terms of type of delivery ($p = 0.60$). The comparison of both groups in terms of preference for delivery method in the post-intervention phase indicated that 95.5% of women in the intervention group preferred to give birth vaginally, while this rate was 4.64% in the control group and this difference was statistically significant ($p < 0.001$) (table 4).

DISCUSSION

The mean scores of women's knowledge in the intervention group were higher in the post-test hence, the group counseling was effective in increasing the knowledge. One of the methods we used in this study to express the benefits of normal childbirth was counseling. Many studies have used normal childbirth counseling, the results of which have been in line with our study. In a study by Nosratabadi et al they found that health counseling was effective in raising knowledge and helping to make informed choices about their delivery.⁸ In a quasi-experimental study by Malakouti et al, the results also

indicated that training and consultation in the intervention group increased pregnant women's mean scores of knowledge about vaginal delivery and it was statistically significant.²⁸ Furthermore, Sharifirad et al conducted a trial study titled on 88 pregnant women. Educational intervention in spouses led to a significant increase in knowledge of pregnant women.²⁹ These findings were in line with the present study. Similar other studies in this regard were studies by Khani Moghaddam et al and Abedian et al). From the results of these researches, it can be concluded that group counseling is effective on changing and enhancing positive attitudes towards the vaginal delivery.^{30,31} These studies are in line with current research findings.

In this study, we concluded that counseling had a positive effect on people's attitudes. In line with our study, other studies have obtained this result. Shojaezadeh et al conducted a prospective quasi-experimental study and investigated the impact of an intervention program on attitudes towards the cesarean section and vaginal delivery. There was a significant difference between attitude scores of intervention and control groups after the intervention.³² Byrne et al studied the effectiveness of Mindfulness Based Stress Reduction (MBSR) on the attitude in choosing the delivery method by pregnant women. Their results indicated that education had an impact on attitude to the selection of delivery method by pregnant women.³³ In a study by Devkota, counseling affected the pregnant women's attitude.³⁴ These studies were consistent with results of the present study, but another study indicated that the group edu-

cation about the pregnancy care significantly increased the pregnant women's knowledge and performance, but did not affect their attitudes probably due to different educational content and questionnaires in our study.³⁵ So this study is in line with the results of knowledge but in contrast with attitude in our research. In our study, women's preference for normal childbirth, like other studies in this field, increased. Increasing the women knowledge about delivery methods and increasing their attitudes made changes in their preferences. The results indicated that number of people, who preferred the vaginal delivery, significantly increased in the intervention group after the intervention. Biglarifar et al found that there is a significant relationship between levels of knowledge and attitude and subsequently preference of women towards vaginal delivery became positive.³⁶ In this regard, Rahmati-Najarkolaie (2014) found that the knowledge and attitude variables predicted type of delivery.³⁷ Zakerihamidi et al also considered the increased women's knowledge about safe delivery and benefits of vaginal delivery as the first step in reducing the elective cesarean section.³⁸ Results of the present study were different from those by Ghaffari et al that indicated the effectiveness of education on knowledge, perceived susceptibility, perceived benefits, and self-efficacy based on the Health Belief Model, but there was no difference between two groups in terms of intention and preference for delivery method and performance.³⁹ In an empirical study, Baghianimoghadam et al also found that the educational intervention based on the Health Belief Model increased women's knowledge, but it was not an effective factor in their performance; hence, other factors were effective in choosing type of delivery.⁴⁰ The findings were inconsistent with results of a research by Sydsjö et al who found that the counseling intervention was not effective in women who had severe fear of childbirth; and most of them asked for the cesarean section. It may be due to differences in in-

terventional methods such as number of counseling sessions, counseling conditions, and research methodology.⁴¹ On the other hand, findings of a research by Ghasemi et al indicated that women's behavioral intention for vaginal delivery increased after an educational intervention.⁴² In Nosratabadi's research, the preferences and choices of all participants (100%) in the individual counseling group were vaginal delivery and 92% of people in the group counseling changed to the vaginal delivery after the end of counseling.⁸ Phadungkiatwattana also reported the increased preference to vaginal delivery after the education.⁴³ Most studies also confirmed that the intention and preference for delivery were significantly associated with education, for instance, Shahraki Sanavi et al confirmed the impact of education based on the theory of planned behavior on the intention and selection of the vaginal delivery.⁴⁴ About 72% of women in a study by Fuglenes et al in Norway and 78% of women in a study by Wu et al with the intention to have vaginal childbirth in the state of California were finally able to have vaginal delivery.^{45,46} In general, results of the present study indicated the effect of group counseling on increasing women's knowledge and attitude like other studies on this field, and it could be effective in the informed selection and preference of childbirth type and reduction of elective cesarean section.^{47,48}

CONCLUSION

Based on the results, pre-pregnancy counseling on the choice and type of delivery method was effective. This has, of course, been due to changes in the knowledge and attitude of these women with the counseling they received. Therefore, pre-pregnancy counseling is useful to reduce the incidence of elective cesarean section and increase women's tendency to vaginal delivery. It is recommended that vaginal delivery training and counseling be provided before pregnancy.

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Author's Contribution

MGA designed the study, gave the initial idea, and did the sampling. SZM designed the study, did the data acquisition, drafted the manuscript, and critically reviewed the manuscript. FK designed the study, analysed the data, and critically reviewed the article. BK Designed the study, did the data acquisition, assisted in the data sampling, and critically reviewed the article. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

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Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.