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Improving the reproductive health literacy of couples on the verge of marriage through the FOCUS-PDCA model: Mixed-method study

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Abstract

Background & Aims: Education and counseling during marriage is an opportunity to raise some issues needed by couples on the verge of marriage. This study was conducted with the aim of improving reproductive and sexual health literacy of couples on the verge of marriage.

Methods: This study was a mixed-methods participatory action research conducted based on the Find, Organize, Clarify, Understand, Select-Plan, Do, Check, Act (FOCUS-PDCA) model in nine steps during 2019–2020 in the city of Bandar Abbas. The Reproductive Health Literacy Scale and the Service Quality (SERVQUAL) Questionnaire were used to evaluate the interventions. Data were analyzed by SPSS version 26. A significance level of less than 0.05 was considered.

Results: The mean age of women and men participating in the quantitative part of the study was 21 ± 5 and 25.84 ± 3.9 years, respectively, which was similar to their counterparts in this part of the study, and the difference in the mean scores of reproductive health literacy before and after the changes in the program showed a significant difference ($p > 0.001$). The study results showed that, except for the understanding dimension, most participants were at an insufficient level in other dimensions of reproductive health literacy. The result of measuring the satisfaction of service recipients indicated good satisfaction in the two dimensions of warranty and accountability, and there was a gap in empathy, assurance, and tangibility dimensions, which the biggest gap was related to the empathy dimension.

Conclusion: The changes made in improving the reproductive health literacy of couples were effective, which can be taken into consideration based on the added items in the current program of providing educational services in marriage preparation classes for couples.

KEYWORDS
action research, FOCUS-PDCA, health literacy, marriage, reproductive health

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1 | BACKGROUND

The acquaintance of couples with centers providing health services before marriage provides the best opportunities for the attainment of appropriate and sufficient information on the various aspects of reproductive health issues such as choosing the proper method to plan for pregnancy, preventing sexually transmitted diseases, the importance of pregnancy care, childbirth and post-childbirth period, as well asprevention of genetic diseases and disabilities.[1] Therefore, a review study conducted in 2018 aiming at the evaluation of the marriage counseling plan in Iran, uncovered the weakness of this very plan in terms of content, duration of the training, and its several consequences on the knowledge and attitude level of couples.[2] In addition, sufficient essential information related to reproductive health is not taught during the study period in schools, and a number of adolescents will marry and enter into a marital relationship either during or shortly after school graduation. For this reason, there is relatively few who will benefit from the chance to continue studying in higher education centers and gaining more knowledge in this field. On the other hand, today, with the development and the expansion of media, alongside the rapid dissemination of information through the Internet, it has become far easier for the public to access a variety of scientific resources, hence, individuals' skills to obtain, correctly understand, and making use of this information will considerably affect their behavior and health status; these skills are classified under the title of health literacy.[3] Sexual and reproductive health literacy can contribute to achieving some sustainable goals of development such as eradicating poverty, reducing hunger, increasing gender equality by helping girls keeping their education, reducing the issue of the gender gap in education, improving future economic opportunities, growing industry, innovation, and infrastructures, reducing inequalities, achieving peace and justice, and building efficient institutions.[4] Easy access to sexual and reproductive health data and services counts as one of the government's mandated rights for young people since they are unprotected against, and vulnerable to reproductive and sexual health problems due to the lack of sufficient information and access to services.[5]

Considering the health policies of the Ministry of Health of Iran concerning the promotion of family health which wasformulated in the form of protocols and instructions issued by the top authorities and notified to the administrative centers in the universities of medical sciences, based on the needs of the target community, it is necessary to establish a mechanism for reforming and reviewing these guidelines so that such programs could be evaluated over time and the program's shortcomings is corrected using the opinions of experts, service recipients, and service providers. One of the methods of improving service quality is to Find, Organize, Clarify, Understand, Select, Plan, Do, Check, and Act (FOCUS-PDCA) model, which is a certain way to improve the quality of processes continuously and, consequently products and services.[6] This strategy includes a set of tools and methods consisting of nine logical and sequential steps (including finding, organizing, clarifying, understanding, selecting, planning, doing, checking, and acting), with the focus on the leading causes of problems where the attempts are made to eliminate them

> **Key points**
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> - The most expressed need of the young people on the verge of marriage was weakness in the functional level of reproductive health literacy, mainly in the field of sexual health, due to some existing sexual health education prohibitions to teenagers in schools and most families that is still among the unfulfilled needs of young people.
> - Making changes in the usual marriage education and counseling program based on Find, Organize, Clarify, Understand, Select-Plan, Do, Check, Act (FOCUS-PDCA) can improve the quality of health services and increase young people's sexual and reproductive health literacy in various dimensions, particularly for developing areas with limited resources and cultural considerations.

relying on scientific tools which can be considered a facilitator to enter the world of comprehensive quality management in organizations.[7] Numerous studies have shown the effectiveness of this method as a problem solver alternative in the health field. For instance, which was conducted to record and improve educational processes in the Faculty of Nursing of Baqiyatullah University in Tehran, a semiexperimental single-group pretest–posttest method was used, and observed that the implementation of this method positively affected the performance of the faculty, actually reduced the duration of the processes, and increased the satisfaction of the process owners with the implementation of training services.[8] In a study in the city of Riyadh, Saudi Arabia, Chowdhury et al. also designed, implemented, and developed a national trauma management system using this model with the participation of 300 experts. They also developed a standard trauma care document to support and guide the establishment of new trauma networks across the country.[9]

Considering the extended problems related to reproductive health in the urban environment of Hormozgan province, such as marriage in the early adolescence, poor statistics of prepregnancy care due to low awareness in this field,[10] the relatively high prevalence of high-risk sexual behaviors among Iranian young people (34%), and therefore their susceptibility to sexually transmitted diseases,[11] the necessity of conducting this research resulted from various aspects. Thus, the present study was revolves around two goals: (1) improving reproductive health literacy among couples on the verge of marriage in Bandar Abbas and (2) assessing the level of satisfaction of the participants with the services.

2 | MATERIALS AND METHODS

The current mixed-method study was participatory action research based on the FOCUS-PDCA model. This model consisted of nine steps, which were implemented in the form of two substudies.

The first substudy was conducted with a qualitative approach, and the second was conducted with a quantitative approach in the only center providing premarriage training in Bandar Abbas, Hormozgan Province (Figure 1).

The first step (*Find*): Finding the problem: For this purpose, in-depth individual or couple interviews (24 participants in total) were carried out with the couples on the verge of marriage or couples who had participated in this training 1 year ago to explain their needs of sexual and reproductive health. The second step (*Organize*): following a draft list of individuals involved in the marriage counseling process of Bandar Abbas, the research team was organized to deal with the problem. The third step (*Clarify*): this step was used to clarify the related problems to the concept description of reproductive health literacy and the marriage training process and the need for the alteration and improvement, this way qualitative study was conducted using in-depth interviews with the participation of 10 consulting service managers and providers at the province level. The fourth step (*Understand*): the effective causes of the process of inefficiency were determined by a fishbone diagram (Figure 2). The fifth step (*Select*): After identifying the needs, a list of facilitators with the capacity of implementation was selected based on the brainstorming session, and then, using the decision matrix, the current methods and educational content were finally decided for the modification, developing the human resources knowledge, employing a same-sex teacher for gender-sensitive educational materials in classes, holding classes for men, and flexibility in holding classes. The sixth step (*Plan*): An action plan was written to implement and evaluate the changes. The seventh step (*Do*): this step included the implementation of changes in the marriage training process. For

this purpose, a quasi-experimental study of before and after the type was conducted on the couples on the verge of marriage selected by a convenient sampling method.

The initial estimate to determine the sample size was about 300 couples in a period of 3 months (based on the number of clients per month), after the completion of the program and with the availability of reproductive health literacy average scores, considering 95% confidence, 90% test power and assuming at least 5 points of change in the average scores and for the standard deviation of changes of about 20 points before and after the reforms as a statistically significant point of the sample size were obtained using the following formula, 168.

$$n = \frac{(Z_{\frac{\alpha}{2}} + Z_\beta)^2 S_d^2}{\overline{d}^2} = \frac{(1.96 + 1.28)^2 (20)^2}{(5)^2} = 168$$

The inclusion criteria consisted having the first marriage experience, living in Bandar Abbas, having at least reading and writing literacy, being willing to participate in the study, attending the marriage counseling center, and filling out the reproductive health literacy questionnaire before attending the classes. Also, the criterion for the exclusion from study was a complete class absence of the participants.

3 | DATA COLLECTION TOOL

A researcher-made questionnaire (measuring health literacy in three functional, critical, and communication areas) and individual interviews (with some service providers and recipients) concerning young
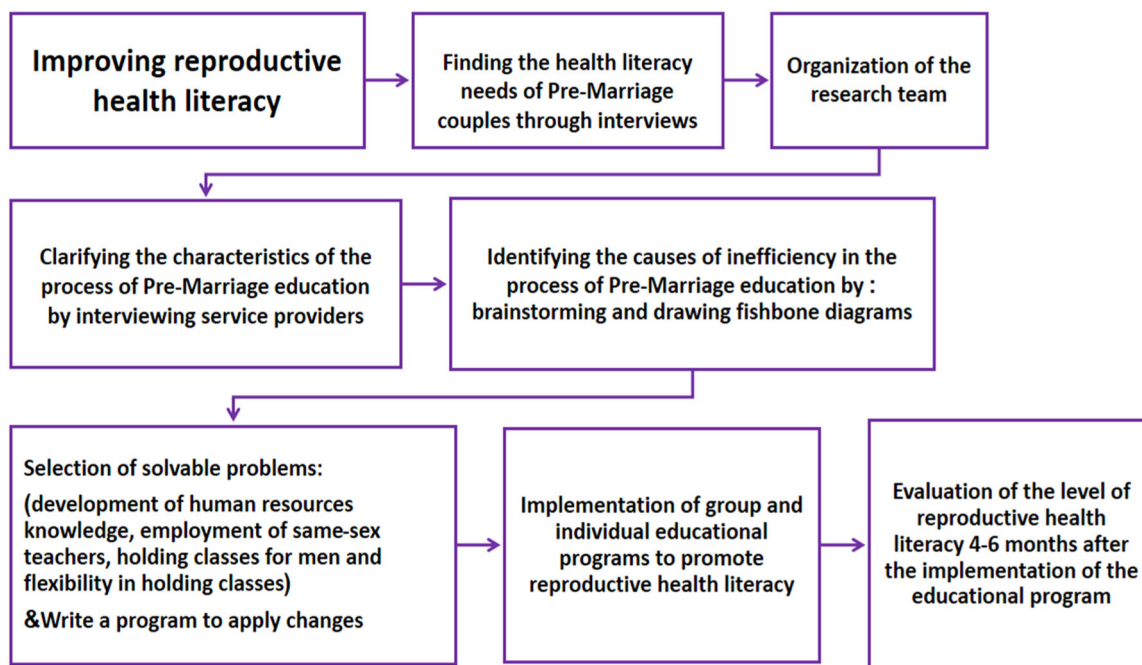

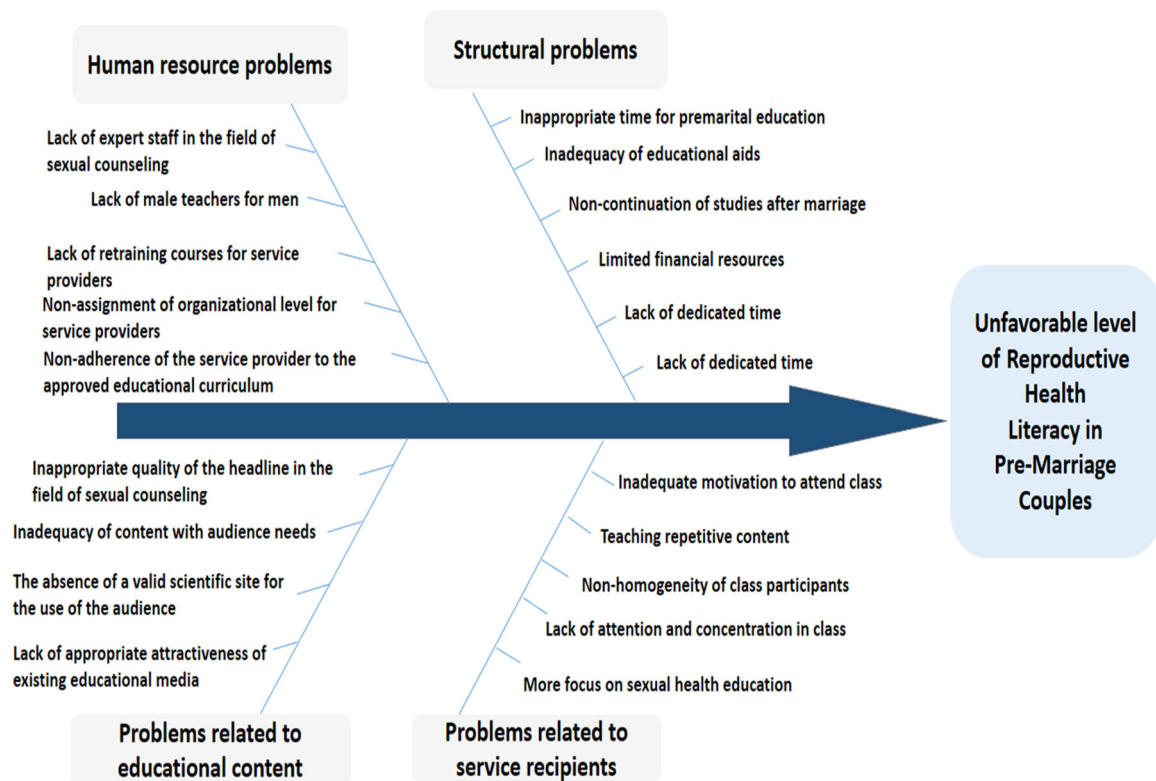**FIGURE 1** Diagram of research steps.

FIGURE 2 Fishbone diagram of causes related to undesirable reproductive health literacy. These problems were classified in four categories: human resources, structural, related to educational content, and related to service recipients.

couples' reproductive and sexual health needs were used for data collection.

Due to the lack of a tool to measure the level of reproductive health literacy, at the time of the study, a researcher-made tool was designed in accordance with the research objectives to measure couples' level of health literacy in the areas required in reproductive health, with an inductive-deductive approach. In designing the items of this tool, in addition to the results of the needs assessment of the first step of the study and the review of related texts in this field, the existing standard scales, such as the Iranian Health Literacy for Adults (HELIA)[12] were used. Finally, a questionnaire was finalized in three parts: The first part was related to the variables of couples' demographic characteristics, and the second part involved 37 items for measuring reproductive health literacy in four dimensions: Understanding (9 items), access (12 items), evaluation (6 items), and decision-making and application (10 items), the third part involved 5 items to measure reproductive health literacy in functional and knowledge of health literacy areas. The reliability of the questionnaire was confirmed by 20 participants' responses to the questionnaire in two phases within 2-week interval, conducting a test–retest using intra-class correlation coefficient (ICC) and ultimately Pearson's correlation coefficient (ICC = 0.941, $r = 0.81$, and $p > 0.05$). The measurement scale of the items was a 5-point Likert scale (not at all to always) scored from 1 to 5, where the minimum and maximum scores in this section were 37 and 185, respectively. Also, in this study, based on the main scale, the level of health literacy was

divided into four categories: "Excellent," "adequate," "not much adequate," and "inadequate"; "inadequate" and "not much adequate" levels were reported as limited reproductive health literacy and the "adequate" and "excellent" levels were reported as the desirable level of reproductive health literacy.

The level of satisfaction with the services provided by the researcher-made questionnaires was also investigated aiming at the evaluation of customer services based on the Service Quality (SERVQUAL) Questionnaire. The opinions of 10 midwifery faculty members were used to determine the face and content validity of the tool. The reliability of the questionnaire was confirmed by 20 participants' responses to the questionnaire in two phases within 2-week interval, performing a test–retest using ICC and Pearson's correlation coefficient (ICC = 0.86, $r = 0.883$, and $p < 0.05$). This questionnaire contains two pairs of 22 items (a total of 44 items) designed in two parts of customer expectations of services and perceptions of receiving services in five dimensions, including warranty (5 items), accountability (6 items), empathy (3 items), assurance (4 items), and tangibility (4 items). The negative result of the difference indicates poor quality and satisfaction, while the positive result of the difference indicates acceptable satisfaction.

After the preparation of tools and the arrangements, amendments were made to the instructional content of premarriage preparation classes, and based on the new content, the training course plan was prepared. To continue the training and provide the responses to the specific needs of the audience as much as possible,

a communication channel called the marriage training class was created through WhatsApp software; after each training session, couples who desired to join this channel stepped in the communication channel after receiving the specifications. Sampling lasted from September to December 2019. The training continued daily through common and accessible platforms until the end of April 2020. The eighth step (*Check*): The evaluation and review of the process improvement were performed to ensure the improvement of the results due to the changes made. The results were controlled through direct observation of the researcher in implementing process changes, surveys, and reviews from the program's audience, notes, and reports. The participants were followed-up for at least 4–6 months after the training and were again measured in terms of reproductive health literacy level in three dimensions, including the ability to access available services, understanding the concepts, and appropriate performance on the issues raised in the fields of reproductive health by appropriate items in the questionnaire, and their health literacy was measured and compared to the before-phase of the reforms. For this purpose, the reproductive health literacy questionnaire was again provided to the couples to complete. In addition, the opinions of couples and service providers as members of the virtual space group were asked once a month, and if practical, their opinions and suggestions were employed. The ninth step (*Act*): A report of the results of this research and the necessary changes and suggestions to reform the couples' training at the time of marriage regarding improving reproductive health literacy was prepared and submitted to the Population and Family Health department of the Health Vice-Chancellor of Hormozgan University of Medical Sciences where, according to the results of the program, decisions were made on the continuation of the program with new changes or based on the previous process. Data were analyzed by SPSS software version 26 using descriptive statistics (mean, standard deviation, frequency, and percentage) and a χ^2 test to compare the frequency distribution of the levels of each variable in both male and female groups. *T*-test and paired *T*-test were used to compare gender and intragroup differences. The analysis of the covariance (ANCOVA) test was used to investigate the effect of the preintervention score and compare the scores in both male and female groups. In all tests, $p < 0.05$ was considered statistically significant.

4 | RESULTS

In this study, 24 couples (14 women and 10 men) participated in the research through in-depth individual or couple interviews to explain and determine the needs related to reproductive health in couples, which is related to the first step of the study (Find). The mean age of women was 23 ± 5.2, and that of men was 26.3 ± 3.9 years. Eleven participants were on the verge of marriage, and 13 were married couples who had attended marriage counseling classes 1 year ago (Table 1).

Concerning the third step of the study (clarify), which was conducted to clarify the problems related to the explanation of

TABLE 1 Demographic characteristics of the participants in the first stage of the study by gender.

Group Variable		Female Number (%)	Male Number (%)
Education level	Elementary	1 (7.1)	0
	Middle school	2 (14.3)	0
	Secondary and diploma college/university education	4 (28.6)	4 (40)
		7 (50)	6 (60)
Occupation	Housewife/unemployed (male)	7 (50)	0
	Manual workers	0	1 (10)
	Self-employment	1 (7.1)	2 (20)
	Student	1 (7.1)	0
	University student	1 (7.1)	1 (10)
	Employee	4 (28.7)	5 (50)
Marital status	On the verge	6 (42.9)	5 (50)
	Married	8 (57.1)	5 (50)

the concept of reproductive health literacy and the marriage training process that needed to be changed and improved, interviews were conducted with key informants and service providers. The key informants and service providers of the current study were 10 people, including 1 general practitioner, 7 midwives, 1 gynecologist, and 1 psychologist. Finally, the results were combined, and using the directed content analysis, the primary need of their health literacy was related to the functional dimension of health literacy in the sexual health section. A qualitative needs assessment has been already been conducted, we therefore relied on the results which were consistent with steps 1 and 3 of this study.[13] In the intervention implemented based on the results of the previous steps, the number of studied individuals included 144 women and 152 men. The mean age of men (25.84 ± 3.90) was significantly higher than that of women (21.66 ± 5.0). Their other demographic characteristics are shown in Table 2.

Intragroup comparison of reproductive health literacy scores by paired *t*-test before and after implementing changes in the program in women and men showed that these changes were statistically significant in all four dimensions of reproductive health literacy so that reproductive health literacy of women and men have significantly increased after the program changes compared to before (Table 3).

Also, it was found that the variables of education level, occupation, and gender did not have any significant effect not only on the total score but also on other areas (except the application area) of health literacy. The ANCOVA model was performed using the adjusted R^2 index, which according to the findings of Table 3 for

TABLE 2 Demographic characteristics of the participants in the seventh stage of the study.

Group Variable		Female Number (%)	Male Number (%)	Test statistics	p Value[a]
Education level	Elementary	14 (9.7)	3 (2)	12.09	0.034
	Middle school	23 (16)	17 (11.2)		
	Secondary and diploma college/ university education	76 (52.8)	90 (59.2)		
		31 (21.6)	42 (27.6)		
Occupation	Housewife/unemployed (male)	90 (62.5)	1 (0.7)	121.61	<0.001
	Manual workers	5 (3.4)	10 (6.6)		
	Self-employment	7 (4.9)	95 (62.5)		
	Student	16 (11.1)	2 (1.3)		
	University student	19 (13.2)	11 (7.2)		
	Employee	7 (4.9)	33 (21.7)		
Total	-	144 (100)	152 (100)	-	-

[a]Chi-square test.

TABLE 3 Comparison of mean relative scores of reproductive health literacy dimensions before and after program changes.

	Average score (out of 100)			
Dimensions	Male Mean ± SD	Female Mean ± SD	Measurement time	p Value[a]
Reading and understanding the information	65.40 ± 15.50	63.23 ± 15.61	Before	0.231
	88.13 ± 6.78	88.85 ± 8.69	After	0.433
Intragroup comparison test	p Value[b] <0.001			
Access to information	48.73 ± 12.91	49.37 ± 15.43	Before	0.699
	82.81 ± 6.98	82.40 ± 9.14	After	0.668
Intragroup comparison test	p value[b] <0.001			
Evaluation of information	49.20 ± 13.56	50.37 ± 14.71	Before	0.477
	71.71 ± 15.08	70.80 ± 10.49	After	0.551
Intragroup comparison test	p Value[b] <0.001			
Decision-making and use of information	53.40 ± 12.01	52.86 ± 14.09	Before	0.721
	80.50 ± 10.61	83.17 ± 7.96	After	0.016
Intragroup comparison test	p Value[b] <0.001			
Total score	54.18 ± 10.34	53.96 ± 11.78	Before	0.860
	80.79 ± 8.17	81.30 ± 7.64	After	0.575
Intragroup comparison test	p Value[b] <0.001			

[a]Independent t-test.
[b]Paired t-test.

the total score of health literacy, was obtained equal to 0.38; in other words, 38% of the changes in reproductive health literacy are explained by the health literacy score variable before the intervention (Table 4).

Examining the participants' level of satisfaction with the service delivery showed a gap in the dimensions of empathy, assurance, and tangibility. The most significant gap was related to the empathy dimension, and the highest satisfaction and service quality was related to the warranty dimension. Also, based on the results of the paired t-test, there was a significant difference between the mean scores of perception and expectation of the respondents only in the assurance dimension (Table 5).

TABLE 4 Results of multiple analysis of covariance test for reproductive health literacy score and its subscales.

Dimensions		Type III sum of squares	Mean square	F	p	Adjusted R^2
Total score	Group (gender)	53.704	53.704	0.432	0.511	0.38
	Education	1359.835	271.967	2.190	0.055	
	Job	854.994	122.142	0.984	0.443	
	Score before	507.178	507.178	4.085	**0.044**	
	Age	403.118	403.118	0.432	0.511	
Reading and understanding the information	Group (gender)	1.413	1.413	0.181	0.670	0.25
	Education	70.245	14.049	1.803	0.112	
	Job	61.500	8.786	1.128	0.346	
	Score before	0.320	0.320	0.041	0.840	
	Age	16.078	16.078	2.064	0.152	
Access to information	Group (gender)	11.387	11.387	0.766	0.382	0.16
	Education	104.016	20.803	1.399	0.225	
	Job	63.729	9.104	0.612	0.746	
	Score before	68.852	68.852	4.632	**0.032**	
	Age	22.992	22.992	1.547	0.215	
Evaluation of information	Group (gender)	15.676	15.676	1.667	0.198	0.40
	Education	79.632	15.926	1.694	0.136	
	Job	101.624	14.518	1.544	0.152	
	Score before	44.380	44.380	4.719	**0.031**	
	Age	27.262	27.262	2.899	0.090	
Decision-making and use of information	Group	0.965	0.965	0.070	0.791	0.49
	Education	232.063	46.413	3.377	**0.006**	
	Job	44.304	6.329	0.461	0.863	
	Score before	48.986	48.986	3.964	**0.048**	
	Age	46.033	46.033	3.350	0.068	

Note: Bold values are statistically significant $p < 0.05$.

5 | DISCUSSION

The present study to our best knowledge was the first action research to reform the reproductive health literacy promotion process of couples on the verge of marriage using the FOCUS-PDCA model. The results of the study showed that making changes in the model-based training and counseling program at the time of marriage will promote reproductive health literacy in couples on the verge of marriage in the city of Bandar Abbas.

After identifying the problem and explaining the participants' opinions regarding the needs of reproductive health couples on the verge of marriage, the need to make changes based on the findings of the first to third steps was felt necessary which were implemented in the form of changes in the presentation of the usual training program for couples in Bandar Abbas obtained from the findings of the first to fifth steps of the study as a quasi-experimental

study. At the beginning of the program, the level of reproductive health literacy of couples was checked, and the results showed that, except for the understanding dimension, the other dimensions of reproductive health literacy (access to information, evaluation of information, decision-making, and application), were at a limited level.

In several domestic studies, the health literacy of adults was at an unfavorable level, mostly without any training interventions. For example, the study of Javadzade et al.[14] on the adult population of the city of Isfahan, revealed that more than 50% of people used the Short Test of Functional Health Literacy (S-TOFHLA) tool, and 61% employed the Newest Vital Sign tool which is an indicator of borderline or insufficient health literacy. A national study that embarked to measure the health literacy of the Iranian population living in cities using the HELIA tool, 44% of the participants showed a limited health literacy.[15] Askarian-Tavandari et al.'s study, on women using the HELIA tool, showed that 43.4% of women had inadequate

TABLE 5 Average scores of perception, expectation, and service quality gap in the five dimensions of service.

Dimensions of service quality	Service quality	Quality difference	Expectations score Mean ± SD	Perception score Mean ± SD	p Value
Assurance	Good	0.25	5.39 ± 1.45	5.64 ± 1.47	**0.02**
Responsiveness	Good	0.11	5.36 ± 1.37	5.47 ± 1.43	0.21
Empathy	Poor	−0.13	5.53 ± 1.48	5.40 ± 1.64	0.30
Confidence	Poor	−0.08	5.61 ± 1.26	5.53 ± 1.40	0.41
Tangibility	Poor	−0.09	5.22 ± 1.41	5.13 ± 1.57	0.45
Total	Good	0.01	5.42 ± 1.22	5.43 ± 1.23	0.87

Note: Bold values are statistically significant $p < 0.05$.

health literacy.[16] Also, Bazaz et al.'s[17] in an investigation on on the health of cervical cancer in women of reproductive age using a tool in the framework of the HELIA tool, suggested that 42.7% of the individuals had limited health literacy. Although Ansari et al.[18] that used the HELIA tool on the young population of 18–30 years old revealed that 82.9% of the individuals had sufficient health literacy, the reason for this difference could be the participants with suitable socioeconomic status (high school education or above and living in an affluent area in Tehran), while in the present study, a lower proportion (30.7%) of couples had more than a high school diploma or university education.

At the end of the program, the follow-up of the participants using the convenient method through the virtual network showed that after the changes made, the level of reproductive health literacy in all its dimensions had a statistically significant increase, meaning that the modifications made were effective in increasing the reproductive health literacy of couples. Tehrani et al.'s[19] study, which conducted an intervention based on modern communication technologies such as the Internet and mobile phone platforms to promote women's physical activity, concluded that such interventions would have a positive effect. Peyman et al.[20] have also suggested that digital media based—health interventions has the capacity to improve health behaviors more effectively. Those results are in line with other studies that used modern communication technologies to promote health.[21,22] Although nearly 40% of the changes in the participants' awareness earned through the training process, more than 60% of those changes were influenced by other factors, not investigated in this study, showing that the effect of time and other factors, such as public and virtual media, are effective in increasing individuals' reproductive health literacy.[23]

Despite observing a significant relationship between education level and health literacy level in the current study, similar to previous studies,[14,15,17] examining the simultaneous effect of training on improving reproductive health literacy by performing linear regression showed that this factor had little effect on improving couples' reproductive health literacy alone. Also, in line with the results of Tavousi et al.'s[15] study, the investigation of the simultaneous effect of gender on improving reproductive health showed that this factor did not play any

role in improving the individuals' reproductive literacy. The results of examining the couples' satisfaction with providing premarital training services showed that the highest level of satisfaction with providing services to couples was in the warranty and then the accountability dimension. However, there was a gap between expectations and perceptions of service recipients in terms of empathy, assurance, and tangibility dimensions, and the couples' expectations of the service quality were beyond their perception of the service provided; therefore, actions should be taken in this center to improve the service quality. In a study conducted by Mohebbi et al. regarding the review of clients' opinions on service quality and premarital counseling classes in the city of Tabriz, the clients' views on service providers and the conditions of premarital counseling classes were reported to be good. Concerning the contents presented in the class, the satisfaction with teaching sexual issues was low, and the use of contraceptives was relatively good.[24] Also, in a study in Greece which attempted to measure the quality of primary health services in primary healthcare centers, indicated a gap in all dimensions, the biggest of which was in the empathy dimension, which is consistent with the findings of the present study.[25]

One of the strengths of this study is the use of the FOCUS-PDCA model and the continuation of marriage training after holding the face-to-face class, while marriage training in the country is currently limited to the timeline before marriage. As well as the results of the study revealed that even after the research ended, again our instructional tools such as educational content and video projectors (preinstalled but not used) was employed, there also separate classes specifically for men were established. Actually, at the present instruction contents has been altered across the country where men have separate classes.

One of the limitations of this research is the time limit of the participants to complete the questionnaires due to a sensitive period of their psychological and emotional life span, which can affect the accuracy of the answers to some extent, even though as much as possible, the participants tried to answer the questionnaires with their personal desire. For this purpose, a calm and low hectic research environment was used for responding. Another limitation of the study is the reliance on the statements of the interviewees, related to their memory laps and falls in recalling the details presented in the premarital education classes.

6 | CONCLUSION

The use of the FOCUS-PDCA model is a method to improve the performance of processes and encourages teamwork and cooperation. This model not only helped discover the program's shortcomings and develop the method and content of the educational program based on the needs of the target community but also promoted the training interventions presented in this process as an effective tool in improving the reproductive health literacy of the study participants. Based on this model, besides the involvement the health system (Health Department of Hormozgan University of Medical Sciences) in relation to promoting health and using their abilities and potential, the sustainability of the reforms made in marriage education, still leads to the improvement of health literacy.

Since it is a dire need to take the young population into account in developing policies for promoting reproductive health literacy, it is necessary to consider empowering couples to receive and interpret information in marriage training along with providing them with sufficient information. Also, some of the needs can be met with interdepartmental cooperation, including mass media, publications, and accessible social networks. Moreover, the need to review and reform the current training content and how to present it to couples on the verge of marriage to use the necessary information in life with a greater focus on promoting sexual health and fertility seems necessary. Policymakers are also required to take steps into familiarizing health service providers with the category of health literacy and its positive effects on health status as well as the use of health services by clients.

AUTHOR CONTRIBUTIONS

ACKNOWLEDGMENTS

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

The data sets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

ETHICS STATEMENT

This research has been approved by ethics committee of the School of Pharmacy and Nursing & Midwifery, Shahid Beheshti University of Medical Sciences under the number: IR.SBMU.PHNM.1395.692. The participants entered the study knowing the confidentiality of information, the right to discretion and autonomy in withdrawing from the study and after obtaining written informed consent. All methods were performed using relevant guidelines and regulations.

TRANSPARENCY STATEMENT

The lead author Sepideh Hajian affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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