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Website: www.jehp.net
DOI: 10.4103/jehp.jehp_7_18

The effect of educational package on sexual function in cold temperament women of reproductive age

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Abstract:

INTRODUCTION: Sexual health is one of the key factors to sustain marital life and having a good sexual function. On the other hand, temperament affects sexual function. Training is also one of the basic foundations for promoting sexual health. Therefore, the researcher has designed and implemented a study (2017) aimed “determining the study of educational package on sexual function in cold temperament women of reproductive age.”

METHODS: This randomized clinical trial study was performed on 80 women in two groups (40 in each group). This study was done, in available method, on no pregnant women aged 20–40 years old that referred to health centers in Mashhad. DASS 21 sexual function and determining temperament questionnaires were completed in two groups before intervention. At first, the sexual function training package was held by the researcher at 6 sessions (twice a week for 3 weeks) that was based on nutrition, sport, and lifestyle axes. The control group also received routine care. A week after intervention finished, all the units completed a sexual function questionnaire. The results were analyzed by these techniques as SPSS software (version 16) and statistical tests such as Independent *t*-test, T-pair, Mann–Whitney, Chi-square, and Fisher’s exact test.

RESULTS: At the beginning of the study, there was no statistically significant difference between the personal characteristics and the mean score of sexual function and all its dimensions in the two groups. The mean sexual performance score and all its dimensions after intervention were significantly different in intervention and control groups $P < 0.001$. Sexual function and all its dimensions were improved after intervention in the intervention group.

CONCLUSION: Giving sexual function package has improved the sexual function of cold temperament women. So, for routine caring of cold temperament women, it is better that health center employees consider this training package as an effective, easy, available, nonpharmacological, and economic intervention.

Keywords:

Cold temperament, sexual function, training package

Introduction

Sexual health is one of the basic and important factors to sustain marital life and having a good sexual function is one of the most important factors in couple’s happiness.^[1] Sexual function includes desire, sexual satisfaction, stimulation,

and orgasm. Research shows social problems such as crimes, sexual assault, mental illness, and divorce have a close relation with being discontent of sexual function. One of the curable and common problems that are prevalent in 30%–50% of women in the United States is sexual disorder.^[2] According to Whestheimer’s and Lopater’s study (2004), 21% of 400 women who referred to gynecologist have cold

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How to cite this article: Baradaran-Akbarzadeh N, Tafazoli M, Mojahedi M, Mazlom SR. The effect of educational package on sexual function in cold temperament women of reproductive age. *J Edu Health Promot* 2018;7:65.

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Received: 09-01-2018

Accepted: 19-02-2018

temperament that is the second abnormal disorder in women.^[3] Many factors affect on people sexual function such as personal characteristic interpersonal relationships, environment, cultural, social, and family conditions, sexual activity records, physical and mental health, personal temperament, and hormonal status.^[4] The temperament means intermingling. People can be divided into two groups as cold and hot temperament.^[5] Cold and wet temperate is the most common disorder that leads to infertility and sexual disorder. The personality and temperament has a close relation with sexual hormones level.^[6] So that, serotonergic activity is high in cold temperament patients.^[7] According to traditional medicine, sexual and total health is a subdivision of body health, which suggests to modify lifestyle in 6 axes to maintain sexual health, these 6 axes contain: air, exercise, eating and drinking, sleep and waking, retention (preservation of essential nutrients) and vomiting (excretion) and mental states.^[8]

According to traditional medicine, temperament determines physical, psychological, and emotional characteristics. Hence, it seems that doing physical activity, which is considered to be a behavior, is related to one's temperament.^[9] Among attitudes and psychological states that depend to temperament, according to traditional medicine, reducing the symptoms of depression, satisfying life, and improving quality of life are the attitudes that relate to physical activity.^[10] Exercise is considered as one of the foundations of healthy life in Iran traditional medicine sources and is one of the 6th essential components of health care.^[11] Many health care orders and patient treatments, in Iran traditional medicine, vary according to patient temperament so that based on type of temperament, orders differ in a single condition. To prevent and treat disease, exercise is a prevention method in Iran traditional medicine which is referred to austerity in these resources. Ibn Sina believes that exercise can prevent diseases or improve existing diseases in some temperaments, and in others not only cannot help to improve health but also exacerbates the symptoms of disease.^[11]

Lowdermilk *et al.* reported that aerobic exercise increases beta-endorphin level, so improving depression and psychological problems.^[12] Stoddard *et al.* concluded that exercise activities decrease estradiol and progesterone hormones and endurance activities also increase beta-estradiol level up to 17.^[13] Activity is considered as a factor to increase estrogen circuit in women.^[14] However, in a study by Williams and Nancy that examined the effects of moderate-intensity exercise, four times a week on 4 cycles of menstruation with a reduction in intake energy to 20%–30% on estradiol and estrogen serum, showed that physical activity does not have any special changes on serum estradiol.^[15] Chemicals that

are naturally produced in body by using different food also have effect on sexual function so that some herbal aromatics (aromatherapy) that have phytoestrogens can be effective in reducing depression and sexual disorders by affecting emotions.^[16]

As temperament medicine has many behavioral and nutritional recommendations, prevention and rapid intervention will be very effective by using these information. Education is one of the basic foundations for promoting sexual health. Sex training is one of the key elements in achieving desirable sexual and reproductive health and also enjoying a healthy and successful life.^[17] Sex education is also related to the cognitive domain (information and knowledge), to the emotional domain (feelings, values, and attitudes), and to the sphere of behavior (decision-making and communication skills).^[18] Considering the specific view of Iran traditional medicine and the difference in sexual function with different temperaments, conflicted studies and not finding a similar study, the researcher has decided to design and do a study with this headline: "Determine the effect of educational package on sexual function in cold temperament women in reproductive age."

Methods

This is a randomized, double-blind clinical trial. At first 121 subjects enter the study but 41 subjects exit study (21 subject for getting score more than 14 in temperament determining questionnaire, 10 for getting score more than 28 in sexual function questionnaire, 4 for having depression, anxiety, high and very high stress for DASS 21 questionnaire and 2 subject for being unwillingness to enter the study) [Figure 1]. That finally this study was performed on 80 women in Mashhad health centers, who had essential conditions for study. After giving approval from Ethical Committee, provided a written introduction letter from Mashhad Nursing Faculty and coordinated with the authorities of the selected health centers, researcher proceed to sampling. Initially, all 20–45 years old women who referred for maternal and child health care, vaccination, and family planning counseling were selected as available. Criteria for entering the study: women with first marriage, having a partner, living with a spouse in a place, having no sexual disorder in her husband, having at least a sexual relation in last 4 weeks, not pregnancy, not lactating, and not intending to pregnancy, passing 3 months from childbirth, not using traditional medicine methods for improving sexual function, lack of medical illness in couple, lack of mental illnesses and using mental drugs in couple, lack of severe stressful incidents during study, lack of vaginal infections, not using vaginal cream, and satisfy to participate in the study. Assuring research units from the data of the questionnaires and giving written consent

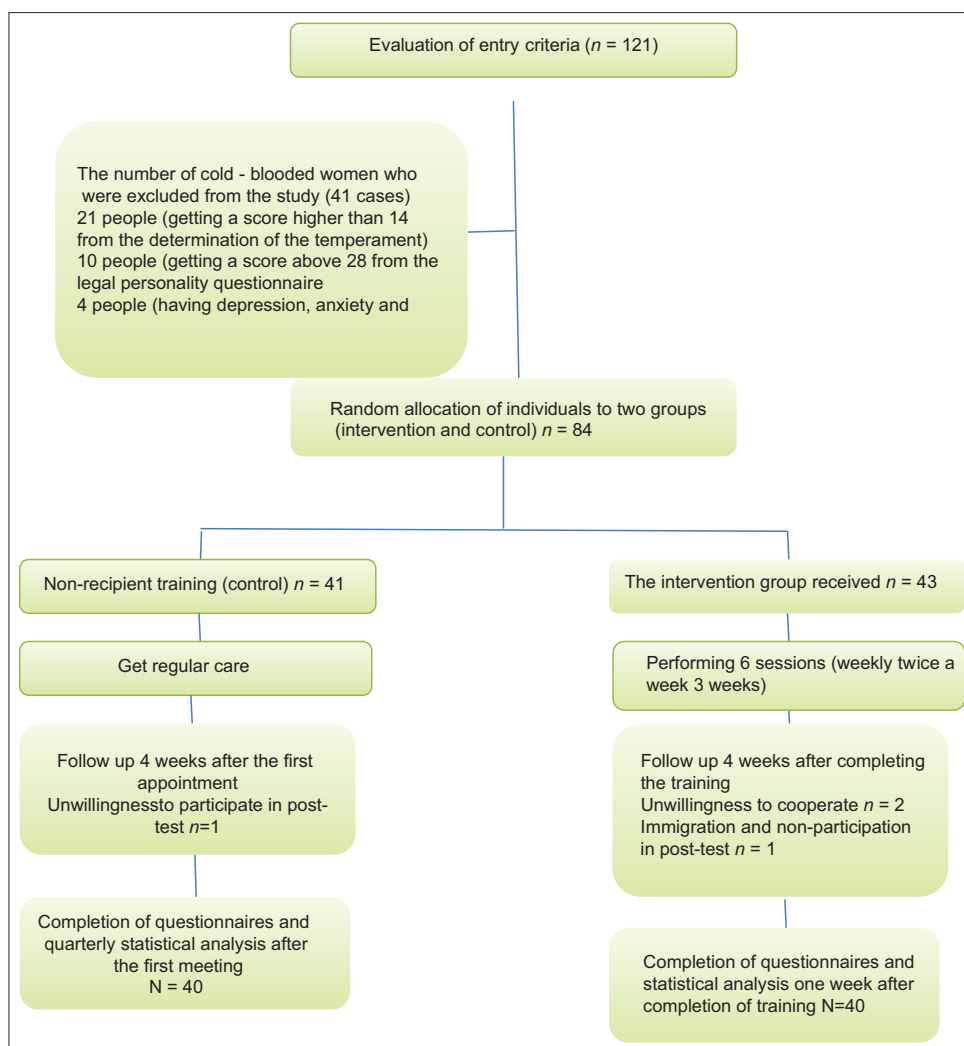


Figure 1: CONSORT flow diagram

from participants, they completed the questionnaires individually and with the presence of the researcher. Data were collected by demographic questionnaire, questionnaire for determining temperament, DASS 21 questionnaire, sexual function questionnaire, and sexual performance checklist.

Personal characteristics questionnaire includes 8 questions, 5 questions are about personal characteristics and 3 questions relate to daily diet. The questionnaire has variables that their effects are measured in this study.

Questionnaire for determining temperament: This questionnaire has 10 questions. The first eight questions determine the warmth and coldness of temperament, and the last two questions relate to wetness and dryness of temperament. According to the Likert index, each question is rated.^[19] In this study, only 8 first questions were examined, and moderate temperament individuals did not examine in the study. In 8 first questions, if score was 14 or

lower, they were considered cold and were enrolled in the study. The validity of this questionnaire has been confirmed by Mojahedi *et al.* 2013.^[19] In the present study, this questionnaire was used for the first time in Iran, and its validity was confirmed with content validity. Its reliability was also measured by test-retest method so that the questionnaires were completed by 10 member of research units, and after 10 days, for the second time, the same units responded to the questionnaire questions. Spearman–Brown correlation coefficient was calculated to be 0.92. Women sexual function questionnaire: This questionnaire was developed by Rosen *et al.* (2000), which has 19 questions with 6 subscales and contains (1) desire, (2) sexual stimulation, (3) vaginal moisture, (4) orgasm, (5) pain during intercourse, and (6) sexual satisfaction. Scores are considered 1–5 for desire, 0–5 for sexual stimulation, vaginal moisture, orgasm, and intercourse pain and 1–5 for sexual satisfaction questions. Score 0 indicates that the person did not have sex during the past 4 weeks. Sexual function score is 28. In order to obtain the score

of this questionnaire, each subscale is multiplied by a certain numerical coefficient. Sexual desire multiplied in 0.6, sexual stimulation and slippery multiplied in 0.3, orgasms, sexual satisfaction, and sexual pain multiplied in 0.4. The minimum and maximum scores for each subscale are sexual desire 1.2, slippery 0–6, orgasm 0–6, sexual satisfaction 0–6, and sexual pain 0–6 (more score in this component means less pain). The minimum score for the total scale is 2 and the maximum is 36.^[20] In Iran, the validity of Iranian version of sexual function index has been confirmed by Mahmodi *et al.* as an indicator of female sexual function in 2008.^[21] Content validity was used to determine the validity of questionnaire. Using internal consistency method to calculate Cronbach’s alpha coefficient, Mahmodi *et al.* determined that the reliability of the scale and subscales for all people was 0.70.^[21] Also in this study, using internal consistency reliability method by calculating the Cronbach’s alpha coefficient $\alpha = 0.89$, scale reliability was determined.

The DASS 21 questionnaire also has three subscales, each of which has 7 questions. Each question score from 0 to 3 and the final scores of each subscale were calculated from the total related scores. Its reliability in the study with 0.82 alpha was confirmed by Henry and Crawford.^[22] In the present study, the reliability of the instrument for Cronbach’s alpha determined, respectively, 0.7, 0.75, and 0.85 for depression, anxiety, and stress scales. Researcher made the sex function checklist that its validity, with evaluator’s agreement, was assessed through content validity and reliability. This checklist was completed for 10 pregnant by a researcher and a scientifically same-rank individual separately. This checklist is arranged in 3 sections: nutrition with 9 questions, aerobic exercise with 3 questions, and lifestyle with 20 questions. Having been cold temperament, entered the study. Then, cold temperament individuals completed the (DASS-21) questionnaire. If their score was <14, 10, and 17, they were selected separately to depression, anxiety, and stress categories, and if it was <28, selected to sexual function questionnaire. Then, these individuals were randomly divided into two intervention and control groups. The cold temperament group was trained, twice a week, in the intervention group, for 3 weeks and each time 60 min. Speech with PowerPoint presentations, video, screenshots, and questions and answers, researcher conducted training. Training sessions were also copied separately on the educational CD and was given to the mothers as assignment. By sexual function checklist, researcher was aware that individuals do trainings. Mothers should have done 80% of these trainings at home. During the intervention, researcher contacted with research units answered their sexual questions patiently, and the next meeting was also reminded. Cold temperament control group also received routine care.

Content of exercise and lifestyle, nutrition, and sexual training sessions

Session 1: Creating effective communication, importance of marital relationships, sexual function differences between men and women, and familiarity with physiology and anatomy of reproductive organs. Session 2: Teaching sexual dimensions and behaviors, teaching sexual correct techniques, and determining assignments. Session 3: Behaviors and practices before, during, and after sexual activity to improve sexual relations, determine and evaluating assignments. Session 4: Being familiar with common sexual disorder and correcting faculty beliefs, determine and evaluating assignments. Session 5: Exercise and aromatherapy role in sexual function, determine and evaluating assignments. Session 6: Nutrition role in sexual function, determine and evaluating assignments.

After 1 week, six sessions completed, both groups completed the sexual function questionnaire and donations were given to all units of the study. Finally, the educational CDs were also given to the control group. Statistical analysis was performed with SPSS 16 (IBM, SPSS Inc, Chicago, Illinois, USA), independent *t*-test, pair *t*-test, Chi-square, and Fisher’s exact test.

Findings

Independent *t*-test, Mann–Whitney, Chi-square, and Fisher’s exact test showed that before the intervention, below factors are similar and do not have statistically significant difference in two groups $P > 0.05$. Mother age variables $P = 0.39$, spouse age $P = 0.226$, number of pregnancy $P = 0.916$, number of natural childbirth $P = 0.489$, number of cesarean delivery $P = 0.956$, number of children $P = 0.240$, last child’s age $P = 0.202$, time passing from marriage $P = 0.838$, marriage age $P = 0.217$, number of intercourse in a month $P = 0.452$, exercise per week in minute $P = 0.484$, sleep and rest time at night

Table 1: Mean and standard deviation of sexual performance score before and after intervention in both groups

Variable	Mean (SD)		Intergroup test result
	Intervention	Control	
Mean total sexual function before intervention	23.7 (2.44)	23.72 (2.39)	df=78, $t=0.000$, $P=1.000$ Independent <i>t</i> -test
Average sexual performance after intervention	31.17 (4.43)	23.75 (2.35)	df=78, $t=9.5999$, $P<0.001$ Independent <i>t</i> -test
In-group test result	df=39, $t=10.264$, $P<0.001$ <i>t</i> pair	df=39, $t=2/396$, $P=0.379$ <i>t</i> pair	

SD=Standard deviation

Table 2: Mean and standard deviation of sexual function dimensions before and after intervention in two groups

Variable	Mean (SD)		Intergroup test result Mann-Whitney
	Interventional	Control	
Average liveness score before intervention	4.40 (1.48)	4.60 (1.03)	Z=-1.064 P=0.287 U=694.0
Average lumbar score later intervention	5.50 (0.75)	4.65 (0.89)	Z=-1.556 U=349.5 P<0.001
Average sexual stimulation score before intervention	4.62 (0.80)	4.32 (1.16)	Z=-0.799 U=722.0 P=0.424
Average sexual excitement score after intervention	5.82 (1.39)	4.00 (1.12)	Z=-5.726 U=226.0 P<0.001
Average moisture score before intervention	3.95 (0.95)	3.90 (1.05)	Z=-0.137 U=78.65 P=0.891
Average sexual moisture scale after intervention	5.45 (0.68)	3.87 (1.04)	Z=-6.334 U=166.0 P<0.001
Average orgasm score before intervention	3.45 (0.87)	3.47 (0.81)	Z=-0.310 U=770.0 P=0.756
Average orgasm score after intervention	4.07 (1.22)	3.22 (1.02)	Z=-2.961 U=510.0 P=0.003
Average sexual satisfaction score before intervention	3.70 (0.82)	3.60 (0.67)	Z=-0.466 U=756.6 P=0.641
Average sexual satisfaction score after intervention	4.95 (1.66)	3.55 (0.71)	Z=-5.166 U=299.5 P<0.001
Average sex pain score before intervention	3.60 (0.77)	3.82 (0.71)	Z=-1.156 U=65.15 P=0.117
Average sexual pain score after intervention	5.37 (1.40)	3.70 (0.85)	Z=-5.428 U=256.5 P<0.001

SD=Standard deviation

$P = 0.908$, sleep and rest time in day $P = 0.827$, number of meals in 24 h $P = 0.178$, number of drinking meals in 24 h $P = 0.801$, mother education $P = 0.259$, spouse education $P = 0.374$, spouse job $P = 0.500$, intercourse satisfaction $P = 0.971$, prevention way $P = 0.329$, housing $P = 0.642$, and disorder in first grade family $P = 0.235$.

According to the probability level obtained by independent *t*-test, before intervention, there was no statistically significant difference between two intervention and control groups ($P = 1.000$). However, after intervention, by using independent *t*-test, there was a statistically significant difference, in terms of average general score, of sexual function between intervention

and control groups $P < 0.001$. Furthermore, in intervention group, using T-pair test, there was a significant difference in intervention groups before and after intervention $P < 0.001$. However, in control group with T-pair test, this difference was not significant $P = 0.379$ [Table 1].

The results of the Mann-Whitney showed that there was no significant difference between the two groups before the intervention in terms of desire, but after intervention, a significant difference was observed between the two groups and the score of all sex dimensions in the intervention group was improved [Table 2].

Discussion

The present study was conducted with the general purpose of “determining the effect of educational package on sexual function in cold temperament women in reproductive age;” and the results showed the effect of “determining the effect of educational package on sexual function in cold temperament women” so that the mean sexual performance score before intervention was 23.75 ± 2.35 in the control group and 31.17 ± 4.43 in the intervention group, which was significant in comparison with the two groups ($P < 0.001$). Furthermore, all aspects of sexual function (desire, agitation, humidity, orgasm, satisfaction, and pain) were also significant in comparison between the two groups. Sexual function and all its dimensions were improved in the intervention group. No study was found to measure the effect of training on sexual function in terms of lung function. Therefore, the researcher tried to use the same results as to examine the effect of training on performance or studies that have done the educational effect in other groups in terms of temperament. Therefore, it is recommended that the results be more carefully considered. Ebrahimipour *et al.* did a study with the aim of determining the effect of sexual training on the basis of planned behavior theory, on sexual function of women referred to urban health centers of Mashhad. It showed that after the intervention, a significant statistical difference in total score of sexual performance was observed between the two groups, and sexual function was higher in the intervention group,^[23] which is in line with the present study. It can be said that the population of the study is identical in both the study and the sampling site. In a study by Mirmohammad *et al.*, the aim was determining the impact of sexual training programs on sexual function and was done on 50 menopausal women and those with sexual disorder who referred to health centers in Tehran. Sexual training was conducted by the researcher in the intervention group, weekly in 4 sessions which last 2 h. In this study, sexual function was measured by the FSFI questionnaire, and significant statistical results indicated that the educational program affects all aspects of sexual function except orgasm. Comparing control

group, sexual function was better in the intervention group.^[24] Some findings are incompatible with the present study. In the present study, all aspects of sexual function were improved. In the study of Mir Mohammad *et al.*, samples were menopausal women, and orgasm is also largely influenced by age.^[25] In a study by Smith *et al.*, comparing with control group, sexual training in women that have sexual disorders improved the general score of sexual function and all its dimensions, except Disparony.^[26] Khaleghi Yaleh Gonbadi *et al.* also conducted a study aimed determining the effect of training on sexual function, and all the scores of sexual function dimensions, compared to the control group, significantly increased except Disparony.^[27] In these two studies, Disparony dimension, compared to the control group, was not significant so not in line with the present study. Perhaps, the reason is that Disparony can be due to problems such as infections, vaginismus, and endometriosis. While in the present study, before entering the study, individuals were examined for infection, vaginitis, and using vaginal worms.

In the study of Navidian *et al.*, the results of this study showed that after 5 sessions of sexual education, the overall mean score of quality of dimensions of marital relationship in pregnant women in the intervention group was significantly different from that of the control group. This means that group sex education has increased the total score of the marital relationship and sexual function of pregnant women in the intervention group.^[28] Bahadoran *et al.* did a semi experimental study determining the effectiveness of group training. Group training consists of 10–13 individuals for 120 min and face-to-face training for 90–120 min during pregnancy on sexual performance of 64 couples by sexual performance index. They found that education on the sexual performance of men and women in both groups has been effective.^[29] These two studies were also in line with the present study. Although these two studies were conducted on pregnant women, in the Bahadoran *et al.*'s study, men also participated in education. The present study was based on temperament in three areas: nutrition, exercise, and lifestyle, which studies are discussed separately in these three areas. In the study of Jafarnejad *et al.*, determining the effect of aerobic exercise program on the severity of symptoms of premenstrual syndrome in hot and cold temperaments, 65 dormitory students of medical science in Mashhad University were examined. The results of this study showed that aerobic exercise reduced the physical and psychological symptoms of premenstrual syndrome in hot and cold temperaments and had the most reduction in cold temperaments.^[30] Chamanzari *et al.* did a study to determine the effect of nutrition training in terms of life quality. He examined 60 patients with gastric reflux disease referred to Ghaem Hospital in Mashhad, and its results showed that considering temperament, nutrition

training has a significant impact on people's life quality.^[10] These two studies were also in line with the present study. Moreover, it is due to the same sampling site and size.

Research restrictions

There were some limitations in performing study such as preparing the place of classes, coordinating a suitable time for individuals to participate in. Furthermore, self-reporting questionnaires was another restriction.

Conclusion

The present study showed that the sexual education package improved the sexual function of cold temperament women. The educational package program is an easy, available, nonpharmacological, and economic program that can be trained by health center staff to cold temperament reproductive age women and included in routine care to be one of these ways to promote sexual function. To get more accurate results with more generalizing, it is suggested to consider these topics for further researches: the effects of sexual training package on sexual function in pregnant and menopausal women with cold temperament, comparative evaluation of different educational methods on sexual function in cold temperament women, and also the effect of spouse participation in training classes on sexual function in both groups.

Acknowledgments

This article is section of a research project approved by Mashhad Medical Sciences University with a track record of 951,601 which was approved by IR.MUMS. REC.1396.39 Code of Ethics on 20/2/1396. The clinical practice code for this study is IRCT20170623034717N1. In this study, the researchers announced their gratitude and appreciation from the research deputy of Mashhad Medical Sciences University and Mashhad health centers.

Financial support and sponsorship

The research deputy of Mashhad Medical Science University.

Conflicts of interest

There are no conflicts of interest.

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