

Motivational Interviewing on Couples' Attitude Toward Premarital Genetic Testing

Çiftlerin Evlilik Öncesi Genetik Testlere Yönelik Tutumları Üzerine Motivasyonel Görüşme

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ABSTRACT

Background: Many genetic diseases are transmitted through the transfer of related genes from parents. The authorities in social health sector have the responsibility to plan and inform the young people on the importance of genetic test for marrying couples.

Objectives: The purpose of the present study was to investigate the effect of motivational interviewing (MI) on the attitude toward premarital genetic testing in couples who refer to marriage counseling center.

Methods: This study was an educational trial conducted at a marriage counseling center. 30 couples who were not willing to undergo genetic testing entered the sampling stage. Available samples signed the consent form and were divided using random blocks of A and B (15 couples in each group). The questionnaire of attitude toward genetic testing was completed before and after the intervention. The intervention group participated in 6 sessions motivational interviewing, but no interviews were conducted with the control group. The data were analyzed using T-test and Fisher exact test in SPSS 20.

Results: The results showed the attitude toward genetic testing in intervention and control groups were 106.27 ± 6.378 and 73.03 ± 8.915 , respectively, and the difference was significant ($p = 0.001$).

Conclusion: The results of this study showed that marrying couples' attitude toward genetic testing had been improved by MI. Therefore, this approach is recommended to be adopted in marriage counseling centers.

Keywords: Genetic anomaly, Motivational interview, Marriage, pregnancy

Received: 04.02.2020

Accepted: 01.24.2021

ÖZET

Amaç: Birçok genetik hastalık, ilgili genlerin ebeveynlerden aktarılması yoluyla bulaşır. Evlenen çiftlerde genetik testin önemi konusunda gençleri planlamak ve bilgilendirmek sosyal sağlık sektöründeki yetkililerin sorumluluğundadır.

Yöntem: Bu çalışmanın amacı, evlilik danışma merkezine başvuran çiftlerde motivasyonel görüşmenin (MI) evlilik öncesi genetik testlere yönelik tutuma etkisini araştırmaktır.

Bulgular: Bu çalışma bir evlilik danışma merkezinde yürütülen bir eğitim araştırmasıdır. Genetik test yaptırmak istemeyen 30 çift örnekleme aşamasına girdi. Mevcut örnekler onam formunu imzaladı ve rastgele A ve B blokları (her grupta 15 çift) kullanılarak bölündü. Genetik testlere yönelik tutum anketi, müdahaleden önce ve sonra tamamlandı. Müdahale grubu 6 oturum motivasyonel görüşmeye katılmış, ancak kontrol grubu ile herhangi bir görüşme yapılmamıştır. Veriler SPSS 20'de T-testi ve Fisher kesin testi kullanılarak analiz edildi.

Sonuç: Bu çalışmanın sonuçları, evlenen çiftlerin genetik testlere yönelik tutumlarının MI tarafından iyileştirildiğini göstermiştir. Bu nedenle evlilik danışma merkezlerinde bu yaklaşımın benimsenmesi önerilmektedir.

Anahtar Sözcükler: Genetik anomali, Motivasyonel görüşme, Evlilik, hamilelik

Geliş Tarihi: 02.04.2020

Kabul Tarihi: 24.01.2021

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doi:<http://dx.doi.org/10.12996/gmj.2021.95>

INTRODUCTION

Worldwide, about 303 thousand babies die within 4 weeks after their birth due to congenital anomalies. Congenital anomalies can lead to long-term disability in life with possible significant adverse effects on families, health care systems and societies. Genes play a significant role in many congenital anomalies. Anomalies may be encoded either through inheriting the genes or gene mutation (1). Congenital and Genetic Disorders (CGDs) are the most common health problems affecting the health of mothers and children. WHO describes CGDs as birth defects that occur in the course of fetus life in the uterus and can be identified before or after birth or later in life (2). EMRO (the Eastern Mediterranean Regional Office) reported a higher prevalence of CGDs in this region compared to other parts of the world. Disability is a major problem of congenital disorders, and the treatment of genetic disorders is very difficult and expensive (3). The congenital anomalies observed in this region are due to autosomal recession in its countries, including α -thalassemia (pregnancy prevalence rate of 2-50%), beta-thalassemia (pregnancy range of 2-7%), and blood cell anemia (carrier rates of 0.3-30%) (3, 4). These anomalies would occur much more when couples marry within blood relations. The rate of this kind of marriage in countries like Iran is reported 14%.

re-marital screening (PMS) refers to a series of genetic, infectious diseases and blood tests which are conducted on couples who are on the verge of marriage to prevent any transmission of disease to their child. Pre-marital screening is one of the most important strategies for the prevention of genetic diseases, congenital anomalies and couples' psychological problems(5).

Genetic testing is very important for countries in which marriage within blood relations is common (6). Studies show various factors contribute to couple's unwillingness to undergo genetic testing. Genetic testing was very stressful for 41% of participants. The result of a genetic test, depending on its outcomes, may lead to different psychological responses. A negative test result would give an extraordinary sense of relief, but a positive result would increase the level of anxiety due to the feeling of frustration and difficulties of coping with the new condition(7, 8). It seems that before the test, the couples need to get prepared, which can be helped by attending at a counseling session(9). The motivational interviewing relies on the cooperation between the clients and the consultant (10-12). Motivational interviewing is a client-based approach for reinforcing and increasing the internal motives of change through discovering and eliminating client's hesitation. The main purpose of motivational interviewing is to investigate and resolve the doubt and hesitation of clients, and to create a change in their behavior (10, 12). Motivational interviewing is a way to increase the motivation and preparation for change in couples and ultimately apply the change. In motivational interviewing, the consultant does not give a motivation to the clients, but finds out the motivation inside them and helps them to recognize it. The consultant reminds the clients of the difference between what there is and what they want to achieve and the effect of their behavior on their goals in the future (10, 13). Since motivational interviewing has not been adopted

in genetic counseling given to newly married couples, this study examines the effect of this interview on creating a more positive attitude toward genetic testing.

METHODS

This is an educational trial study conducted at a marriage counseling center where couples refer to do the routine premarital tests. Among them, 30 healthy couples who had the criteria for entering the study and were not willing to conduct genetic tests(it depends on genetic counseling issues , entered the study. Available samples signed the written consent form and were divided to two groups (15 couples in each group) as random blocks of A and B. First, a questionnaire on the attitude of couples toward genetic testing was given to both groups. All of the couple's early marriage conducted to genetic counseling. After that during genetic counseling counselor may find although they are seem healthy, it may find the in his/ her families suffering the genetic disease that couples don't care about it. After that counselor recommend that tests such as for example Talasemie, trisomy (during pregnancy, sickle cell anemia). Also, couples are old age and want to get pregnant early marriage , counselor tell them you must genetic test after pregnancy for neural tube defect and trisomy although , you are healthy.

The questionnaire included 30 items with three sub-scales of anxiety, confidence (self-efficacy), and interest in genetic testing based on a 5 degrees Lickert scale. This researcher-built questionnaire had been validated in terms of content by five professors in the fields of pregnancy health and clinical psychology.

A high score in this scale indicated a positive attitude of the respondent toward genetic testing and a low score showed a negative attitude (below 90). There were 7 items in the anxiety subscale, 11 items in self-efficacy subscale and 12 items in interest in genetic testing.

The reliability of the questionnaire was determined by Alpha coefficients, which were 0.83, 0.81 and 0.85 for the three subscales of anxiety, self-efficacy and interest, respectively, and 0.93 for the total score.

For the intervention group, counseling sessions were held in 5 sessions of 60 minutes in 5 weeks (table 1), while no intervention was conducted in the control group. At the sixth week after the end of the last intervention session, a follow up was conducted for couples in both groups (control and intervention) in person, and the questionnaire of attitude toward genetic testing was responded again. After re-examination of their attitude, a counseling session was run (sixth week). Independent t-test was used to analyze the data to compare the two groups.

Ethical statement

The present study has been done in the Clinical Research Center of Amirkabir Hospital affiliated to Arak University of Medical Sciences, under the ethics code of IRARAKMU.REC.1397.92.

Table 1: The structure and content of the MI sessions

Session 1: Introduction	The goal is to prepare the client for group motivational interviewing, being introduced to them, and providing the explanations about the rules and regulation of the group including ethics in the group, self-assessment exercises, schedule of attendance in the group, motivation and confidence of the client which were measured on the baseline.
Session 2: Emotions	The goal is helping the client to change the felt external need and necessity to an inner desire for change, awareness from change, stimulating the change-oriented conversation, doing practical exercises to clarify the emotions, using empathic style, deep understanding and acceptance and respect, doing the homework
Session 3: Positive and Negative Aspects	The goal is to focus on the client's bias, emphasis on client's ability to assess and measure their self-efficacy for change, eliciting group comments on the short-term and long-term advantages and disadvantages of continued behavior, doing the teamwork and homework
Session Four: Values	The goal is clarifying, identifying and verifying the values of client, creating the internal desire for change, increasing the client's awareness of the individual behavior and value differences, enhancing the process of identifying the problem and the desire to change, practicing the values and doing the homework
Session 5: perspective practice and preparation for change	Recognition of tempting situations, reviewing homework, and final session

RESULTS

The mean age of the intervention and control group were 23.0435 ± 3.19770 and 23.6333 ± 3.40874 , which were not significantly different ($p=0.524$) (table 2).

The results showed the attitude of genetic counseling in MI and control groups were 106.27 ± 6.378 and 73.03 ± 8.915 , respectively, representing a significant difference ($p = 0.001$). Other variables are listed in Table (3).

Table 2: Demographic characteristics in intervention and control groups

	Interventional group	Control group	*p value
Women age(Mean \pm SD)	20.1429 \pm 2.734	22.8750 \pm 3.356	0.111
Men Age(Mean \pm SD)	24.2667 \pm 4.682	26.5333 \pm 5.221	0.221
Level of women education	Under diploma/ diploma N (%)	5(62.5)	0.338
	bachelor and above N(%)	3(37.5)	
Level of men education	Under diploma/ diploma N (%)	3(42.9)	0.1
	bachelor and above N(%)	4(57.1)	
Women's job	Housewife N(%)	6(75)	0.267
	employed N(%)	2(25)	
Men's job	Worker N(%)	2(28.6)	0.214
	Employed N(%)	5(71.4)	

*Fisher exact test

Table 3.The attitude of genetic tests and sub-scales in intervention and control groups

	Group	Mean± SD (N=15)	P value●
Anxiety before intervention	Intervention	17.06±3.713	0.693
	Control	16.70±3.445	
Anxiety after intervention	Intervention	25.83±2.450	0.001
	Control	17.20±3.933	
confidence before intervention	Intervention	28.20±3.699	0.809
	Control	27.96±3.736	
confidence after intervention	Intervention	39.40±3.765	0.001
	Control	28.63±4.634	
Interest before intervention	Intervention	27.26±3.912	0.764
	Control	26.96±3.800	
Interest after intervention	Intervention	41.03±3.854	0.001
	Control	27.20±4.122	
Attitude before intervention	Intervention	74.46±7.123	0.630
	Control	73.56±7.280	
Attitude after intervention	Intervention	1.062±6.378	0.001
	Control	73.03±8.915	

●T-test

DISCUSSION

The present study showed the motivation of couples for doing genetic testing increased. Moreover, reduced couples' anxiety of genetic testing, improved confidence, and more interest in undergoing the genetic tests were observed. A study by Dinc on 128 people who referred for genetic testing showed high trait anxiety and state anxiety before the test (14). Moudy et al. examined motivational interviewing in couples whose blood test showed thalassemia minor. Their findings in the first month after intervention showed an increased number of clients who referred to marriage counseling centers for repetition of the test; however a limited percentage of the intervention group came for genetic testing after 5 months which did not have a significant difference with the control group (13). One of the reasons for the inconsistency between Moudy's findings and the present study was that the clients were told genetic testing is not mandatory, and the focus of Moudy's study was on conducting more accurate tests of thalassemia, its differential diagnosis and iron supplementation for treatment of anemia. However, in the present study, the interview was conducted for apparently healthy couples, and the purpose was to elicit their motivation to undergo genetic tests; therefore, couples' behaviors were not studied. In motivational interviewing, an active participatory discussion between the consultant and the client is formed and decisions are shared, but ultimately it is the clients who should reflect a change (15). A systematic review of 30 studies showed that education can reduce the psychological and stress-related outcomes of test (7). Studies show increasing the genetic literacy of society will enhance the public desire and motivation to participate in genetic screening programs. Motivational interviewing at the time of marriage provides couples the opportunity to raise their awareness of genetic testing in the society, especially genetic diseases such as thalassemia and breast cancer (16, 17). In motivational interviewing, the strengths and weaknesses of clients' current behavior are evaluated, their hesitation and doubt is eliminated, and the person is led toward the direction of change (11). In motivational interviewing, the client must provide the solutions available for change themselves, and the consultant also adds their own information and comments. This way, the client will find themselves capable of change(7, 11).

Rogers believes that motivation for change depends on the person's perceived risks as well as on their level of self-efficacy. If one has low level of self-efficacy, their belief in change will be too weak. In the motivational interviewing, the consultant hopes that clients would change and gives this hope to them in their communication and talks about the success of other clients to show the ways for achieving the desired change (18). Mahmoudi et al. reported motivational interviewing increased the incidence of cervical cancer screening (Pap smear test) (11). The fear from positive test results, doubts about doing the test, financial and time costs are the factors that contribute to maintain the current status by couples on the verge of marrying (no genetic testing) and to continue their current behavior. The consultant tries to remove the doubts, stimulate the individual's intrinsic motivations, prepare them for change, increase active participation, longer presence and adherence to the program, strengthen positive behaviors, increase worries about unhealthy behaviors without pressure and compulsion, improve self-efficacy, emphasize the sense of autonomy and freedom of action to help the clients change their behavior (8, 15). The study of Hooker et al recommended the theory base education and counseling in order to facilitating decision-making and reducing psychological distress(9).

CONCLUSION

The results of this study showed that motivational interviewing removes the doubts and hesitations among marrying couples, and reinforces a positive attitude toward genetic testing in couples by increasing self-efficacy and reducing test stress.

The present study indicates the effectiveness of motivational interviewing on couples' attitudes. Given that the birth of a child with a disability or genetic disorder is a family and social problem that incurs heavy costs on the families and societies, preventive measures must be taken such as empowering health care providers to raise public awareness on family problems due to the birth of a physically disabled child and fetal death, as well as on the importance of genetic tests through effective means such as motivational interviewing.

Conflict of interest

No conflict of interest was declared by the authors.

Acknowledgment

We are very grateful to Clinical Research Center of Amirkabir Hospital for approving this research. The authors of this article express their gratitude to Majid Farahani and Fatemeh Amiri for helping us as coordinator, and all the staff of the respectable health centers who helped us with this research. Hereby, the researchers express their gratitude from the couples who participated in this study.

Funding

This research was funded by Arak University of Medical Sciences under financial code of 2943.

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