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The Effect of Benson Relaxation on Quality of Life of Patients with Irritable Bowel Syndrome

Masoomeh Asadi,[1] Sedigheh Fayazi,[2,*] Sara Adarvishi,[1] Pejman Alavinejad,[1] Mahmood Latifi,[3] and Akbar Soleimani[4]

[1]Research Center for Infectious Diseases of the Digestive System, School of Nursing and Midwifery, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, IR Iran
[2]Nursing Care Research Center in Chronic Diseases, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, IR Iran
[3]Department of Health School, Diabetes Research Center, School of Health, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, IR Iran
[4]Vice President of Shahrekord, Shahrekord University of Medical Sciences, Shahrekord, IR Iran

[*]*Corresponding author*: Sedigheh Fayazi, Nursing Care Research Center in Chronic Diseases, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, IR Iran. Tel: +98-9161136441, E-mail: sadighe_fa@yahoo.com

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Abstract

Background: Irritable bowel syndrome (IBS) is one of the most common functional disorders of the lower gastrointestinal tract that is characterized by abdominal pain and changes in bowel habits. This disorder changes the quality of life of patients.
Objectives: The purpose of this study was to determine the effect of Benson relaxation on quality of life of patients with irritable bowel syndrome.
Methods: This was a clinical trial study with 46 patients, who were randomly divided to two groups including Benson relaxation and control group. The experimental group exercised 20 minutes daily for three two months, while no intervention program was held for the control group. The data collection tools were a demographic form and SF-34 Questionnaire that were used to gather data one week before and two months after the intervention. Then data were analyzed using the SPSS version 19 software.
Results: The results indicated the mean total quality of life score in test group after intervention was changed from 93.13 to 57.61 while the control group was changed from 105.65 to 96.43 ($P \leq 0.001$). There was a significant difference in six dimensions of quality of life including dysphoria ($P \leq 0.001$), social reaction ($P \leq 0.001$), health worry ($P \leq 0.001$), body image ($P \leq 0.001$), interpersonal relation ($P = 0.004$) and activities interference ($P = 0.001$) between the two groups, but no significant difference was found in food abstinence ($P = 0.244$) and sexual worry ($P = 0.830$).
Conclusions: The findings showed that Benson relaxation training might be an effective therapy for improving quality of life in patients with IBS.

Keywords: Irritable Bowel syndrome, Quality of Life, Benson Relaxation

1. Background

Irritable bowel syndrome (IBS) is a chronic functional gastrointestinal disorder characterized by changes in bowel habits (diarrhea and constipation (and abdominal pain and bloating in the absence of chemical and pathological disorders, which fluctuates irregularly but is not completely eliminated (1, 2). The syndrome has several different names such as spastic colon, irritable colon or nervous colon (3). It affects all races and ages in both genders (4), but most studies indicate it has a higher prevalence in females (5, 6). Also, the prevalence of IBS varies worldwide so that the rate varies from 9% and 22% in the United States and European countries (7) to its lowest rates of 4.2% and 4.4% in Northern India and Thailand, respectively (8). Based on population studies conducted in Iran, IBS prevalence has been reported between 3.5 and 5.8% (9).

Irritable bowel syndrome is the second cause of absenteeism from work after the common cold as patients with the disease have three times more absent days from work when compared to other employees (10). Therefore the society defrays high expenses because of this disease so that Europeans countries have allocated an annual cost of around 6.1 million directly and 19.2 million indirectly, to this disease (11). The symptoms of irritable bowel syndrome range from a mild illness to a severely debilitating disease. The disease may be associated with symptoms including fecal incontinence, outside signs of the colon, such as drowsiness, urinary symptoms and sexual symptoms. The symptoms are sometimes so disturbing that some patients have even committed suicide due to the lack of recovery (12). Although the exact cause of IBS is unknown,

but several studies have shown that various factors are considered as the cause such as genetics, environment, psychological factors, the phenomenon of sensations in the brain, hormonal changes, dietary factors and activation of immune system (13). Although psychological symptoms aren't involved in the irritable bowel syndrome yet they play important roles in the progression and clinical outcomes of the syndrome. Stress, anxiety and depression are common among these patients, which is significantly related to the onset and severity of symptoms in irritable bowel syndrome (14).

Therefore, in addition to high medical expenses, IBS decreases efficiency and quality of life in patients so that people with this syndrome experience impairment of life quality depending on the severity of symptoms. The disease leads to impairments in interpersonal relationships and job performance, and avoidance of sexual intercourse and social engagement (15). Intestinal and extra intestinal symptoms, chronic stress, female gender, cultural background, and also personal perceptions of illness are identified as factors, which affect the quality of life of patients with IBS (16). Generally the quality of life in people with this syndrome has been reported as lower than the general population (15). The study of Sun Cho in 2011 revealed that average quality of life score was 78.9 in patients with irritable bowel syndrome, which is low in all aspects (17). Researches in America and the United Kingdom showed that IBS has considerable effect on quality of life and using healthcare resources in both countries, while its effect was more in Americans rather than British people (18). The study of Tamannaifar et al. in Kashan also showed the low quality of life in patients with IBS (19). Nowadays governments consider improved quality of life as part of socio-economic development. Improvement of life quality is generally considered as the main objective in the treatment of patients with IBS, since having knowledge about the patient's quality of life is considerably important for selection of therapy for these patients (20).

The aim of therapy in patients with IBS is improvement of all symptoms including abdominal pain or discomfort, bloating, changes in bowl movement and also improving their life quality that finally leads to a reduction in disease severity of the patient. Unfortunately there isn't a specific treatment for controlling all the clinical signs of the disease. Although a wide variety of drugs have been considered effective by clinical trials yet other therapies should be examined for an effective treatment of symptoms. Currently, many patients do not use traditional medicines for the syndrome and 11 to 43% of patients with gastrointestinal disorders use complementary and alternative methods (CAM) (21).

Complementary therapies are considered as methods, which are associated with increased physical and mental relaxation of patients. The acceptance of complementary therapies has also increased in health systems and non-pharmacologic interventions are being developed to complement modern medicine among (22). The most common non-drug treatments include worship, massage therapy, exercise, cognitive therapy, relaxation, meditation, music therapy, aromatherapy, and guided imagination that are applied for relaxation and relief of the anxiety of patients; furthermore, nurses have an important role in helping patients for suitable and effective application of relaxation techniques (23). Several studies reported the effectiveness of psychological interventions such as relaxation, cognitive behavioral therapy, and meditation for reducing the symptoms of patients with IBS (24). The research of Solati et al. in Isfahan in 2009 revealed that the combination of psychological treatments and medication can improve the quality of life and reduce the symptoms of irritable bowel syndrome while the lack of continuity in treatment led to recurrence of symptoms (25).

Relaxation techniques are methods, which are easily taught by nurses to their clients. These methods are effective for reducing stress and psychological pressure (26). Relaxation is performed in different ways but the method, which was introduced by Herbert Benson in 1970, is more desirable because it is easier to learn (27). Benson relaxation is a concentration method, which is effective on a wide range of physical and mental symptoms such as anxiety, pain, depression, mood and self-confidence and reduces stress (28). Regarding its easy training, low costs, no need for special equipment, and easy implementation by patients, this relaxation technique can be considered as one of the best treatment aids (22). The results of the study by Keefer and Blanchard also demonstrated the effect of relaxation on the improvement of symptoms (stomach bloating, belching and diarrhea) (29). Also the research of graft on patients with irritable bowel syndrome in 2008 showed that despite drug use by 80% of patients, only 34% of them found the drug to be effective for relieving symptoms (30). Relaxation techniques are non-invasive and easily taught by nurses and also the educational-protection role of nurses is more pronounced with this technique (31). Most importantly, all these treatments make a deeper relationship between nurses and patients (32). Applying complementary therapies is the responsibility of nurses that provide more effective treatment for patients and rely on the knowledge of nurses (33).

Considering the mentioned points, the chronic and debilitating nature of irritable bowel syndrome and its high costs for treatment has a significant effect on the life quality of patients. Although there are several studies on patients and also about the cultural, social, environmental

and behavioral factors associated with IBS, yet there is a need to study the effect of non-pharmacologic interventions on the life quality of patients.

2. Objectives

Therefore this study aimed to investigate the effect of Benson relaxation on the life quality of patients with IBS to help improve their quality of life.

3. Methods

This study was a clinical trial, which was performed, with permission from the relevant authorities and obtaining approval from the research ethics committee of Ahvaz University of Medical Sciences, on patients with irritable bowel syndrome at Imam Khomeini hospital and national Kianpars clinic of Ahvaz during years 2013 to 2014. The reason for choosing this environment was easy access to the samples while there were a sufficient number of admissions. At first the researcher learned the Benson relaxation method for eight hours under the supervision of a clinical psychologist. The researcher performed the intervention after the education then he (or she) approached the cases from the office of gastroenterologist after the psychologist's verification. The sample size according to previous studies (18) and using the following formula was calculated for each group as 23 patients. However, to compensate for sample loss 25 patients were allocated to each group. Next, 50 patients were selected according to the characteristics of studied units and also the diagnostic criteria of Rome III by the available sampling method. After matching based on age and gender, and obtaining consent, and also explanation of the objectives, procedures and duration of study for all patients, the participants were divided to two groups, namely Benson relaxation (n = 25) and routine care control.

Demographic and patient information (age, gender, marital status, ethnicity, education, occupation and place of residence, symptoms, duration of illness, subgroups of the disease and type of treatment) and the Short Form including 34 items (SF-34) were completed using interviews by researchers before starting the intervention for samples of both groups. Quality of life questionnaire included 34 questions, which are answered by patients based on a Likert scale of five options (never, rarely, often, often and always). The minimum score of the test was 34 and the maximum was 170. Higher scores showed lower quality of life for patients. The questionnaire included eight subscales as follows: boredom from the disease, questions of social reaction, concern about health, body image, interpersonal relationships, food avoidance, sexual concerns and interference with daily activities. This test is highly reliable and it has been confirmed by various studies. The reliability of this test has been reported as 0.095, 0.096 and 0.096, respectively in America, Europe and Asia (34). Additionally, the reliability of the Persian version of this test was 0.92 (35). Inclusion criteria included age of over 18 years old, having literacy, at least three months of contracting, lack of other acute or chronic physical disorders (cardiac, respiratory, liver and kidney), lack of speech or hearing impairment, lack of mental illness (such as major depression), lack of treatment such as hypnosis, homeopathy etc., lack of physical limitations such as fractures for relaxation etc., lack of colon surgery, lack of surgeries or female-related issues during the past six months, not being pregnant. In this study, the patients of the intervention group were treated by Benson relaxation during 60 sessions twice daily while the control group didn't receive therapies other than the common therapies in this period. The samples of the intervention group were divided to two groups (n = 13 and n = 12). The method was taught to both groups separately during two sessions and the training was repeated if it was necessary. In the first session the Benson relaxation technique was taught and its benefits and objectives were explained for patients while in the second session the Benson relaxation technique was taught and executed. Practical training was also performed for patients in order to achieve better learning. Next, the patients were asked to practice the technique once in the presence of the researcher. Patients were asked to remove certain devices including mobile sets, which can interfere with the intervention process. After that, mistakes were identified and the patients were advised to ask any question they thought might have caused the problems. It is noteworthy to mention that no other facilitator was used besides the relaxation and treatment during the sessions.

Relaxation techniques training program is planned and performed step by step:

First step: expressing a word or phrase based on his/her belief system.

The second step: obtaining a relaxed posture

The third step: closing the eyes.

Fourth step: relaxing the muscles.

Fifth step: expressing the desired prayer as breathing in and out.

Sixth step: having a passive attitude (36).

After the technique was learnt by the patients, they were asked to practice relaxation exercises twice a day for two months for 10 to 20 minutes at each time along with listening to audio tapes of relaxation training, which was prepared by the researcher. Sequence and continuity are important in this method. Due to the recommendations,

the best time to practice the technique was two hours after eating (37). This is a quick and useful technique that can be done easily in a few minutes and is applicable anywhere, whether in the waiting room of doctors, or bus or train, or while traveling (38). During this period, the researcher followed the patients by phone calls, sending an SMS and his own reporting check lists that included date and time of exercise, and the physical and emotional changes, and were filled by samples every week at the doctor's office.

Two patients from the intervention group and two patients from the control group were excluded due to having an incomplete of check-list. Finally, the life quality of patients of both groups was analyzed; the experiments were done and the results were compared one week and two months after the intervention. Overall, patients filled out the questionnaires for a total of three times. At the end, the researcher conducted a training session for the control group for ethical reasons and gave them the tape of Benson relaxation training.

3.1. Ethical Considerations

The initial plan of the study was approved by the ethics committee of Ahvaz Jundishapur University of Medical Sciences with code No. ajums. (REC.1393.16).

4. Results

Statistical analysis indicated that there weren't significant differences in demographic characteristics (age, gender, marital status, ethnicity, education, occupation and place of residence) and illness condition (severity, duration of illness, disease subtype, and type of treatment) using the chi-square test (Table 1), and the two groups were matched with each other.

The results revealed that total score average of life quality changed from 93.13 to 57.61 in the intervention group and from 105.65 to 96.43 in the control group, two months after the intervention ($P < 0.001$). The repeated measures test was used to compare the average scores of life quality through out the experiments in the two groups, which showed significant differences (Table 2).

The total score average of life quality showed significant differences using Tukey's post hoc analysis for the intervention group at all times ($P< 0.001$) (Table 3).

In addition, a significant difference was observed in the scores of the two groups regarding helplessness and boredom ($P < 0.001$), social reaction ($P < 0.001$), health concerns ($P< 0.001$), body image ($P< 0.001$), interpersonal relationships ($P = 0.004$) and daily activities ($P = 0.001$) yet the differences of regimen ($P = 0.244$) and sexual concerns ($P = 0.830$) dimensions were not significant (Table 4).

5. Discussion

Most research participants in the test (65.2%) and control group (91.3%) were females. Notably, 39% of the patients in the research of Semnani et al. (39) and 68.6% of participants in the study of Andrae et al. were females, which is consistent with our study (16). Also, 76.7% of participants in the research of Faresjo were female that shows consistency with our research (39, 40). Chi-square test did not show significant differences in terms of gender ($P = 0.074$). Given that most studies showed higher prevalence of the disease in females (5, 6), this research also indicated the same ratio. The results showed statistical differences in repeated measures of variance test between total score average of life quality in patients with IBS from control and test groups during three periods ($P < 0.001$) (41). The research of Hosseini et al. showed that Benson relaxation method is effective for life quality of patients with IBS, consistent with the results of this study (18). The studies of Creed et al. (42) and Drossman et al. (43) assessed the effect of combinational therapy with antidepressants to improve quality of life and reduce symptoms of IBS, and revealed that the combination therapy can be effective. Hunt et al. studied short-term treatment of cognitive-behavioral therapy for reducing anxiety and improving the quality of life in patients with irritable bowel syndrome and results of their study were similar to the current research (44). Similar to our results, Kheir-Abadi et al. also found that using the techniques of dealing strategies (including training relaxation, training skills for reforming beliefs with rational emotional techniques and problem solving skills training) was effective to improve the quality of life in patients with IBS ($P = 0.084$) (45).

Significant differences were observed between the average score of boredom and frustration dimensions of life quality between the two groups at three periods by repeated measures Analysis of Variance (ANOVA) ($P < 0.001$) that showed the effect of Benson relaxation techniques for improving frustration and boredom in patients. Husseini et al. showed that Benson relaxation techniques improved the frustration and boredom of the patients, respectively ($P < 0.001$) (18). Solati et al. showed that there was a significant difference between the drug therapy group and relaxation group on the dimension of boredom and frustration both in therapy and following steps (46). The results of the research by Maleki et al. (47) showed that psychological training wasn't effective for treatment of boredom and frustration dimensions considering the same mental health and stress levels before and after training for a short time. The low number of participants and the short time period of the study may have been the causes of undesirable results.

Table 1. of of Frequency and Other Demographic Characteristics of the Study Subjects

Variables	Intervention, N = 23		Control, N = 23		P
	Count	Percent	Count	Percent	
Age					0.678
30 ≥	7	30.43	8	34.75	
31 - 40	6	26.08	7	30.43	
41 - 50	6	26.08	4	17.41	
50 ≤	4	17.41	4	17.41	
Gender					0.074
Male	8	34.8	2	8.7	
Female	15	65.2	21	91.3	
Marital status					0.732
Single	5	21.70	6	26.1	
Married	18	78.30	17	73.90	
Ethnicity					0.205
Fars	18	78.30	14	60.9	
Other Gulf	5	21.7	9	39.1	
Education					0.120
Diploma and under the Diploma	13	56.5	18	78.3	
Higher the Diploma	10	43.5	5	21.7	
Job					0.123
Practitioner	11	47.8	7	30.4	
Unemployed	12	52.2	16	69.6	
Location					0.225
City	20	87	21	91.3	
Village	3	13	2	8.7	
Severity					0.053
Mild	5	21.7	4	17.4	
Average	7	30.4	4	17.4	
Severe	11	47.8	14	60.9	
Duration of Disease, y					0.754
2 >	11	47.8	10	43.5	
2 - 4	3	13	3	13	
4 <	9	39.1	10	43.5	

Table 2. Comparison of the Mean Overall Quality of Life in Both Intervention and Control Groups

Period	Intervention		Control		P
Quality of life	**Mean**	**SD**	**Mean**	**SD**	
A week before the intervention	93.13	21.25	105.65	21.70	0.001 >
A week after the intervention	76.3	19.61	102.35	17.21	
Two months after the intervention	57.61	11.57	96.43	26.24	

Table 3. Comparison of Three-Stage Review of the Intervention and Control Groups at Different Times

Time	Group	Mean ± SD	Mean ± SD	P
A week ago, and a week later	Intervention	93.13±21.25	76.3±19.61	0.001>
	Control	105.65±21.70	76.3±19.61	0.055
A week ago, two months later	Intervention	93.13±21.25	57.61±11.57	0.001>
	Control	105.65±21.70	96.43±26.24	0.059
A week later, two months later.	Intervention	76.3±19.61	57.61±11.57	0.001>
	Control	102.35±17.21	96.43±26.24	0.086

Table 4. Comparison of Life Scores in the Intervention and Control Groups

Title	Group	A Week Before of the Intervention	A Week After the Intervention	Two Months After the Intervention	P Value
Helplessness and boredom	Intervention	25.65 ± 7.21	18.65 ± 5.74	13.43 ± 2.64	> 0.001
	Control	29.87 ± 6.52	28.61 ± 5. 5	26.65 ± 7.87	
Social reaction	Intervention	10.7 ± 3.63	7.83 ± 2.36	5.96 ± 1.46	> 0.001
	Control	11.48 ± 3.36	11.26 ± 2.71	11 ± 3.39	
Health concerns	Intervention	9.26 ± 2.22	6.65 ±2.10	4.91 ± 1.92	> 0.001
	Control	10.74 ± 2.35	10.26 ± 2.30	9.61 ± 2.58	
Body Image	intervention	9.83 ± 2.48	9.43 ± 2.59	6.4 ± 1.55	> 0.001
	Control	9.87 ± 3.22	9.78 ± 2.35	9.35 ± 3.11	
Interpersonal communication	intervention	7.83 ± 2.69	5.74 ± 1.83	4.26 ± 0.915	0.004
	Control	9.52 ± 2.42	9.35 ± 1.89	8.22 ± 2.92	
Food avoidance	Intervention	9.78 ± 2.76	9.3 ± 2.77	8.35 ± 3.009	0.244
	Control	11.43 ± 2.33	11.3 ± 1.89	10.96 ± 2.44	
Sexual function	Intervention	4.09 ±2.065	4.17 ± 2.05	4 ± 1.67	0.830
	Control	5.26 ± 2.11	5.43 ± 1.87	5.26 ± 3.2	
Activities of daily living	Intervention	16 ± 3.71	14.52 ± 4.12	10.39 ± 2.88	0.001
	Control	17.48± 4.43	16.35 ± 3.56	15.39 ± 5.19	

The repeated measures ANOVA was used to compare the average score of social reaction dimension of life quality for both groups at three time points and showed significant differences ($P < 0.001$), and the use of Benson relaxation techniques improved the social response of patients. Salehi et al. found that Benson relaxation techniques improved the social functioning of patients with breast cancer, who were receiving chemotherapy ($P < 0.001$), which is consistent with the current study (48).

Maleki et al. didn't observe significant differences in the social reaction dimension between the control and test groups (47); however, they noted the small sample size and short duration of the study as the causes. It should be noted that the teaching methods of the two studies were different and training of Benson relaxation techniques was performed practically for patients, which might have caused a lack of consistency.

A significant difference was observed between the average score of health concerns of two groups by repeated measures ANOVA ($P < 0.001$), which showed the effectiveness of Benson relaxation techniques for improving the health concerns of patients. Husseini et al. found that Benson relaxation techniques dramatically improved the concerns of patients about their health (18). Steve studied the effect of training on outcomes of patients with IBS at the Mayo clinic and found that symptoms and health concerns dimension of life quality improved after training (49).

A significant difference was observed between the average score of body image of the two groups by repeated measures ANOVA ($P < 0.001$), which showed the effectiveness of Benson relaxation technique for improving the body image of patients. The decline of average score of body image indicated that the perception of people improved in the test group with time and confirmed by the consistency of people. Tamannaifar et al. also showed significant differences in the body image between people with irritable bowel syndrome and non-infected people ($P < 0.001$) (19).

A significant difference was observed between the average score of interpersonal relationships of the two groups by repeated measures ANOVA ($P < 0.004$), which showed the effectiveness of Benson relaxation techniques for improving the interpersonal relationships of patients. The study of Hosseini et al. showed that Benson relaxation

technique was effective for improving interpersonal relationships of patients with irritable bowel syndrome ($P < 0.001$), which is compatible with the current study (18).

A significant difference wasn't observed between the average scores of food regimen dimension of life quality of the two groups by repeated measures ANOVA ($P < 0.244$). Although nutrition cannot be the cause of the disease, yet certain foods such as cabbage, dairy products, apple or grape juice, banana, carbonated beverages, foods with high fat, black cabbage, cocoa, beans, lentils, peas and alcohol intensify the symptoms of the disease in patients. Tamannaifar et al. also found that there wasn't a significant difference between patients with irritable bowel syndrome and healthy individuals in terms of diet (19).

The significant difference wasn't observed between the average score of sexual function dimension of life quality of the two groups by repeated measures ANOVA ($P < 0.830$). The research of Zahmatkeshan and Hazrati showed no statistical significant difference in sexual function between participants of the two groups one month and three months after the intervention (50). Salehi et al. also found that Benson relaxation technique was not effective for sexual functioning in patients with breast cancer undergoing chemotherapy ($P = 0.076$) (48). Two causes were stated for the ineffectiveness of Benson relaxation technique; first, since patient's sexual function is directly related to the performance of their spouse thus emotional and physical power of patients could be improved by appropriate sex advice and enforcing the spouse to participate in these programs with the patient and create more time for patient compliance; the second reason is the culture of timidity and modesty and the unwillingness of people to speak about these issues.

A significant difference was observed between the average score of daily activities of the two groups by repeated measures ANOVA ($P < 0.001$), which showed the effectiveness of Benson relaxation techniques for improving daily activities of patients. Cohen et al. studied the effect of yoga including relaxation, breathing exercises, deep relaxation and meditation, for the patients with breast cancer undergoing radiation therapy and they found a significant difference in physical activity that is consistent with our results (51).

The results of this study showed that the quality of life of patients with irritable bowel syndrome, who were treated by relaxation techniques, was significantly higher than the quality of life of patients not treated with relaxation methods. Therefore, relaxation training and practicing should be considered as part of the treatment of patients. The limitations of this study were as follows: patients were different regarding talent and learning skills of relaxation; the answers of the research participants were considered correct and acceptable and there wasn't any means for the researcher to verify them. Future studies are recommended to evaluate the effect of relaxation and music therapy on quality of life of patients with irritable bowel.

5.1. Conclusions

According to the study, practicing Benson relaxation method effectively improved the quality of life in patients with irritable bowel syndrome.

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Footnotes

Authors' Contribution: Study concept and design, Masoomeh Asadi, Sara Adarvishi, Sedighe Fayazi and Pejman Alavinejad; analysis and interpretation of data, Mahmood Latifi, Asadi and Fayazi; manuscript preparation, Asadi, Adarvishi, Fayazi and Alavinejad; collection of data, Asadi and Adarvishi Alavinejad; critical revision, Adarvishi, Asadi, Fayazi and Alavinejad.

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