Effect of Training Intervention and Exercises on Retirement Syndrome and Quality of Life of Elderly Retired Men in South of Iran

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Abstract

Background: Increased proportion of the retired population and the occurrence of retirement syndrome may significantly affect the Quality of life (QoL) and the well-being of older people. Therefore, the present study was conducted to examine the effect of training intervention on retirement syndrome and QoL among retired older men in Safashahr, Iran, in 2019.

Methods: Using a randomized block design, the quasi-experimental study was conducted on 140 retired men with retirement syndrome. The subjects' average age was 61.24 ± 1.36 years. The older people were selected by purposive sampling and then randomly assigned to an experimental group (n=70) and a control group (n=70). The intervention comprised five 90-minute sessions of the practical training course of exercises for over 45 days in the experimental group. The study outcomes, such as retirement syndrome and QoL, were measured before, immediately after, and two months after the intervention. The study data were analyzed using SPSS Statistics 25, independent sample t-tests, Chi-square tests, and repeated measure ANOVA. The significance level was set at 0.05.

Results: Based on the average score of retirement syndrome (<0.001) and its subscales, such as helplessness and failure (HF) (P<0.001), feeling of old and idle (FOI) (<0.001), feeling of confusion and conflict (FCC) (P<0.001), and feeling of effort and a new direction (FED) (P=0.025); an average score of QoL (P<0.001) and all its subscales, including physical activities (P<0.001), physical health (P<0.001), emotional problems (P<0.001), vitality (P<0.001), mental health (P<0.001), general health perceptions (<0.001), except for physical pain (0.347) and social performance (0.41), there is a significant difference between the two experimental and control groups, before and after the intervention.

Conclusion: The findings may provide valuable implications for the development of exercises among the elderly and further studies to evaluate the long-term effects of such interventions among the elderly.

Introduction

Population aging is among the 21st century's most magnificent trends.[1] World's population is rapidly aging with mortality and declining fertility, and the elderly population has grown much faster than the general population.[2-4] According to the 2016 census, approximately 9.5% of the total population was people over 60 years in Iran.[5] Retirement and aging is a unique stage of human life, passing from one role to another, and getting ready to enter a new stage of life. Aging is a worldwide phenomenon significantly highlighted with contemporary socio-industrial development.[6] Retirement typically occurs after years of hard effort at the end of middle age and the beginning of the elderly, especially in non-freelance jobs including employment in an institution or organization.[7] Retirement is a process in which the person stpos working while enjoying benefits and designated earnings and pension consistent with age and work history defined in the pension law approved by the competent authorities.[8] For many retired seniors, the period is accompanied by many psychological and physical changes. Their first tangible experience is the feeling of "emptiness," resulting in the people's degradation of many capabilities and skills. Besides, the retired person subconsciously thinks about the old times, when he or she was powerful with many authorities and was connected with a relatively wide network of people, especially colleagues, which impose much psychological stress on the person.[9] The factors could cause inconsistencies and negative retirement symptoms, leading to a phenomenon called "retirement syndrome" accompanied by a set of signs and symptoms. Retirement syndrome may have a range of symptoms, such as feelings of exhaustion, possible emptiness and absurdity, anxiety, depression, fear of rejection, concerns, and following retirement.[6] Retirement syndrome is characterized by four criteria as retirement complications, including helplessness and failure (HF), feeling of old and idle (FOI), feeling of effort and a new direction (FED), and feeling of confusion and conflict (FCC).[10] Normally, after retirement, one-fourth of people become unable to perform their daily activities, and about 10% become completely dependent and disabled.[11-13] Retirement can directly and indirectly affect the QoL of retirees.[14] There are various factors associated with retirement satisfaction, and among them, quality of life is one of the most important ones. QoL is referred to as a mental component of well-being. QoL can be defined as a state of physical, mental, and social well-being, including happiness, satisfaction, pride, healthy status, economic status, educational opportunities, and creativity perceived by a person or a group of people.[13] it seems that increasing awareness and establishment of training interventions aimed at increasing the coping ability of people to deal with retirement syndrome can significantly contribute to improved QoL and decreased retirement syndrome.[10-15] Accordingly, some examples of interventions are social support through a positive attitude and muscle relaxation.[14, 16-17] Adaptation to life in retirement plays a major and vital role in continuing daily work and activity, overall satisfaction and health, decreasing retirement symptoms, and maintaining retirees' overall mental and physical health. Several factors, such as readiness for retirement, good social and economic status, good physical health, family and marital status, community support, effective social communication, and education level, can be associated with retirement adaptation.[6] A study established a training intervention and found a significant difference in the score of retirement syndrome and its seven subscales at three different time points between intervention and control groups, indicating the positive effect of interventions on retirement syndrome.[10] A study investigated the positive effects of relaxation exercises on social performance, different life dimensions, and sleep quality in the elderly.[18, 19] Since the number of male employees has increased in recent decades, the number of retired male seniors has also increased in the community.[20] On the other hand, the incidence of retirement-related depressive symptoms is higher among older males.[21] Furthermore, the incidence of retirement syndrome may be significantly associated with mental health and QoL of retirees, their families, and, ultimately, society. Mental health and psychological interventions aimed at improving the adaptation of people to retirement lead to reduced complications and cost-saving treatment, and more studies should be done in this field. One of the most common mental health interventions is relaxation exercises that can effectively help to reduce stress and anxiety. Given the unclear effect of such exercises on retirement syndrome, the present study was conducted to investigate the effect of the training intervention, relaxation exercises on retirement syndrome, and QoL of retired older people in Safashahr city in 1398.

Methods

The quasi-experimental interventional study was conducted in Safashahr city, located 175 km far from the north of Shiraz. The retirement centers of the city are Armed Forces (200 active members), Social Security (300 active members), and Kanoon Farhangian (200 active members), which actively provide the retired people with required services. It should be noted that retirees are primarily members of the Men's Association. Therefore, the present study recruited retired men referring to the retirement centers. According to similar preceding studies[11] and using the average difference formula (Eq. 1) in the two groups, the sample size was estimated at 140.

$$n = \frac{2\sigma^2 (Z_{1-\alpha/2} + Z_{1-\beta})^2}{d^2}$$

It is important to note that although a small number of elderly members of the Armed Forces

Center were eligible to enter the study, they were all unwilling to participate in the study. Since almost all eligible subjects belonged to Social Security and Kanoon Farhangian centers (includes teachers and staff of the Ministry of Education), members of the two centers were first divided into two groups, experimental (includes teachers and staff of the Ministry of Education) and control (members of the Social Security Center) using simple random sampling (coin flipping) to prevent information dissemination between members of the two groups. The target-based method was used, and a total of 140 elderly clients of training programs (70 subjects from each center) were selected from the mentioned two centers and were then equally assigned into the experimental group (n=70) and control group (n=70) using simple random allocation. The inclusion criteria for subjects were reading and writing literacy, age 60-75, ability to speak and communicate, at least six months to five years of retirement, non-voluntary early retirement, no participation in psychotherapy classes during the study, and the Retirement Syndrome Test score of 96.5 (using Rock Test results collected from 80 questionnaires and conducted by the project executive. The exclusion criteria were unwillingness to continue participation, absence for more than one session in the training classes, simultaneous participation in psychotherapy programs, death, immigration, and re-employment. The intervention included a problem-solving training course, muscle relaxation exercises, coping strategies for the components of retirement syndrome, and practical training on relaxation exercises (by the researcher and subjects) in five 90-minute sessions for over 1.5 months. The training program was implemented using lecturing, focus group, practical demonstration, and supervised exercises. Also, the educational booklet, consisting of text and images based on the literacy level of the target audience, was distributed among subjects. The intervention was performed only in the experimental group. According to ethical principles, all training materials were provided to the controls at the end of the study. The results were measured in three different time points, before, immediately after, and two months after the intervention.

Research Tools

The Retirement Syndrome Questionnaire was used to assess retirement syndrome amongst the elderly. The data collection tool consisted of 40 questions on four dimensions, including HF (18 questions), FOI (11 questions), FED (6 questions), and FCC (5 questions). The test range score of 40-200, with higher scores, indicates a higher rate of retirement syndrome. In addition, the validity and reliability of the present test were evaluated.[8]

The 12-item short-form survey (SF-12) was used to measure the QoL of subjects. The questionnaire assesses QoL in 8 dimensions: 1) General health perceptions (item No.1), 2) physical activities (items No.2 and 3), 3) physical health (items No.4 and 5), 4) emotional problems (items No.6 and 7), 5) Bodily pain (item No.8), 6) social activities (item No.9), 7) Vitality (energy and fatigue) (item No.11), and 8) general mental health (items No.10 and 12). The scale score range of 12-48 points, with higher scores, indicates a higher QoL. The scores are interpreted as follows: 37-48 points reflect good QoL, 25-36 points represent average QoL, and 12-24 points indicate low QoL. The validity and reliability of SF-12 were evaluated.[22, 23]

After investigating both study groups, each subject received the results from all tests. The informed written consent was obtained from all subjects, and the study received the approval of the research ethics committee of Shiraz University of Medical Sciences (IR.SUMS.REC. 97.01-04-1847). After data collection, the data were entered into SPSS 25.0, and then data analysis was performed using descriptive statistics, independent t-tests, chi-square tests, and repeated measure ANOVA.

Results

The average age of subjects was 61. 24±1.36 years. Also, 69% of the subjects were married, and 37.5% had a diploma. Also, none of the subjects showed a history of chronic disease. Two subjects in the experimental group (one person in the first post-test and second post-test) and one in the control group (not participating in the first post-test) were excluded from the study. According to the results from The Q-Square test, there was no statistically significant difference in demographic variables between the experimental and control groups. The significance level was considered at 0.05.

Repeated measure ANOVA was applied to compare the mean score of retirement syndrome at three different times. Given the statistically significant group interaction, both groups reported test results separately. The results suggest that the mean score of retirement syndrome has changed over time in both groups, increasing in the control group and decreasing in the experimental group. In addition, the findings showed a significant difference between the two groups (P=0.001) (Table 1).

According to the test results, the mean scores of QoL subscales were significantly different between pre-test and post-test in the experimental group (Table 2).

It was found that the average total score of QoL and its subscales (physical activities, physical health, emotional problems, bodily pain, vitality, and general health perceptions) increased when the scores in the first and second post-tests was increased compared to the pre-test measurements in the experimental group.

Table 1: Results from retirement syndrome test in experimental and control groups at three-time points (pre-test, first post-test, and second post-test)

Group / Retirement syndrome	Experimental Mean (M)	Experimental Standard deviation (SD)	Control Mean (M)	Control Standard deviation (SD)	t-test
Pre-test	111.10	10.98	108.77	6.75	P=0.133
First post-test	103.65	9.48	111.61	6.74	P≤0.001
Second post-test	105.01	8.98	113.52	7.01	P≤0.001
F Wilks' Lambda	23.523		37.332		-
P value	P≤0.001		P≤0.001		-

Table 2: Comparison of the mean scores of retirement syndrome test subscales in the experimental and control groups at three-time points (pre-test, first post-test, and second post-test)

Subscales	Group	Pre-test Mean (M)	Pre-test Standard deviation (SD)	First post-test Mean (M)	First post-test Standard deviation (SD)	Second post-test Mean (M)	Second post-test Standard deviation (SD)	Repeated measure f	P value
Helplessness and failure	Experimental	48.48	7.09	45.87	5.82	44.54	5.43	9.807	≤0.001
	Control	47.41	4.24	47.41	4.24	46.18	4.20	5.472	0.022
t-test	P value	P=0.151		P≤0.001		P≤0.001		-	
The feeling of old and idle	Experimental	31.11	3.93	27.95	3.97	28.34	3.81	9.065	≤0.001
	Control	30.45	3.16	31.02	2.98	31.78	3.07	9.312	≤0.001
t-test	P value	P=0.272		P≤0.001		P≤0.001		-	
The feeling of effort and a new direction	Experimental	18.30	4.27	17.92	3.93	17.17	3.94	3.875	0.025
	Control	18.04	3.33	18.28	3.16	18.32	2.70	0.848	0.433
t-test	P value	P=0.692		P=0.321		P=0.298			
Feeling of confusion and conflict	Experimental	12.84	2.23	10.92	1.97	11.84	3.79	14.182	≤0.001
	Control	12.85	1.95	14.08	1.79	14.74	2.04	57/86	≤0.001
t-test	P value	P=0.968		P≤0.001		P≤0.001			

Table 3: Comparison of the mean total score and subscales of Quality of life in experimental and control groups at three-time points (pre-test, first post-test, and second post-test)

		Mean (M)	Standard deviation (SD)	Mean (M)	Standard deviation (SD)	Mean (M)	Standard deviation (SD)	F	P value
Physical activities	Exp.	3.50	0.92	5.75	0.9	5.55	1.26	3.12	0.032
	Control	3.24	0.99	3.27	1.13	3.38	1.15	2.197	0.119
Physical health	Exp.	2.37	0.81	3.92	0.69	3.78	0.86	2.4	0.048
	Control	2.25	0.86	2.51	0.82	2.44	0.81	0.429	0.653
Emotional problems	Exp.	2.38	0.78	3.67	0.69	3.88	0.67	2.83	0.039
	Control	2.38	0.83	2.13	0.82	2.05	0.75	1.23	0.562
Bodily pain	Exp.	3.48	1.04	4.23	1.23	4.01	1.09	1.12	0.856
	Control	3.40	1.12	3.11	1.09	3.02	1.10	0.427	0.654
Social activities	Exp.	3.32	1.17	3.50	1.15	3.47	1.12	0.554	0.557
	Control	3.78	1.19	3.68	1.22	3.77	1.16	0.652	0.524
Vitality	Exp.	3.62	1.26	5.79	1.23	5.83	1.28	2.58	0.038
	Control	3.61	1.40	3.68	1.29	3.50	1.27	1.038	0.36
Mental health	Exp.	6.95	1.71	8.49	1.72	7.54	1.71	5.27	0.007
	Control	7.50	2.04	6.40	1.81	6.34	1.84	0.301	0.741
General health perceptions	Exp.	3.07	0.96	4.94	1.05	4.92	0.97	2.43	0.003
	Control	3.04	0.99	3.01	1.02	3.02	0.96	0.412	0.996
Average total score of QOL	Exp.	31.72	4.70	35.37	4.01	33.58	4.12	5.738	0.005
	Control	32.62	4.84	32.40	4.49	32.54	4.35	0.334	0.717

Also, all QoL subscales, except for social activities, were significantly different in the first and second post-tests compared to the pre-test stage (P<0.001) (Table 3). also, there was a significant difference in scores of QoL and its subscales between the first and second post-tests (P<0.001) (Table 3).

The Bayes factors' scores for all the major variables of the study (retirement syndrome and quality of life) indicate that training intervention has had a positive effect. Moreover,It is predicted that when the interventions are continuous, they will ultimately have a significant impact on the older people's quality of life and improve the symptoms regarding the retirement syndrome. Furthermore, regarding several variables,

Table 4: The Bayes factor scores utilizing an independent test using the Rouder method in the main assessed variables

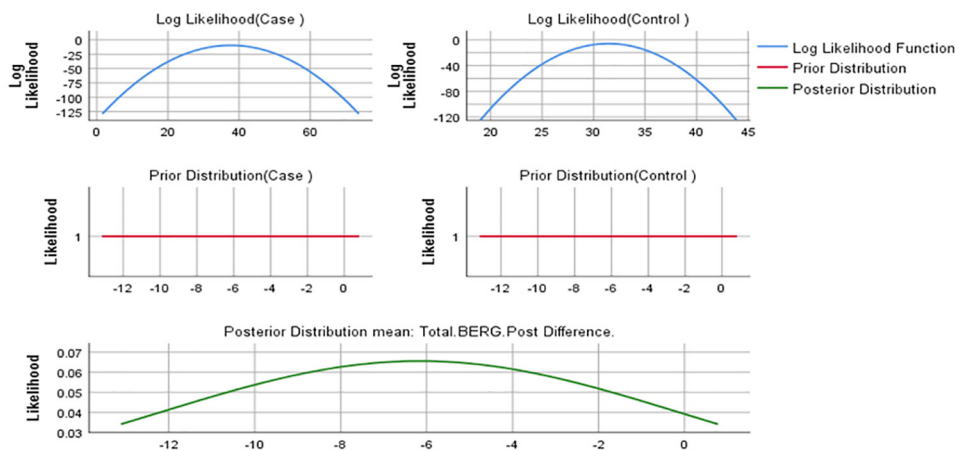| Test	Significant Difference	Integrated Standard Error Difference	Bayer Factor	T	df	sig
Retirement Syndrome	22.13	2.344	0.004	9.092	58	0.0000
Quality of Life SF-12	4.00	0.885	0.002	4.518	58	0.0000

The Bayes Model for Predicting the Retirement Syndrome Test

Figure 1: Posterior distribution of the retirement syndrome variable before and after the intervention

such as quality of life and the retirement syndrome, when the duration of the intervention becomes extended or the post-intervention follow-up period gets longer, it is predicted that it will impose a more significant positive influence.

Table 4 shows the results obtained by the independent test in the Bayes model using the Rouder method. The distribution of the Bayes factor scores 0.004 (P=0.0000) indicates that a two-month intervention can play a significant role in altering and rectifying the retirement syndrome. In Bayes models, and through utilizing the findings of previous studies or the initial measurement level after the intervention, a model has been proposed to strengthen or confirm the intervention model. Linear distribution diagrams regarding the Bayes factor for each of the main variables assessed in the study have been obtained after the intervention (Figure 1).

Discussion

The findings demonstrated that relaxation exercises as a training intervention positively affect the reduction of an average score of retirement syndrome. The results were supported by other studies.[6, 24, 25] As such, determined risk factors associated with retirement syndrome in retirees. The most critical factors for retirement syndrome are financial, social, and psychological problems, physical and psychological effects of aging, and loneliness. Many of the risk factors can be prevented by applying effective policies and guidelines and establishing appropriate and timely interventions. It should be noted that a specific organization and all organizations must have inter-sectoral collaboration to reduce the syndrome and prevent its occurrence.[24]

The mean score of all retirement syndrome subscales, except for FEC, decreased in the first and second post-tests compared to the pre-test stage in the experimental group. A significant difference was also observed between the two groups in the first and second post-tests with the pre-test stage (P<0.001), and also there was a significant difference between the first and second post-test measurements, which were consistent with the results reported.[10] The results indicate the positive effect of relaxation exercises on reducing retirement syndrome. All QoL subscales, except for FED, reduced after the intervention significantly. However, longer training intervention involving both male and female elderly in the program may also reduce FED.

Some people may know important events in ir personal life history but may not be aware of how their personality is affected by them. Accordingly, retirees may be aware of the effect of retirement but have no clear insight into how their personality is affected by such major events.[14]

The results indicated that relaxation exercises as a training intervention were associated with an increased average score of QoL and its subscales (except for bodily pain and social activities), consistent with results reported.[26-28] The results from repeated measure ANOVA showed that subscales of physical activities, physical health, emotional problems, vitality, mental health, and general health perceptions significantly changed over time in the experimental group. However, the subscales revealed no significant changes in the control group. Furthermore, there were no significant changes in both groups' bodily pain and social activities. The findings were supported through studies conducted.[26-29] Retirement is also a time of

losing many relationships, and retirement causes the person to lose a job and contact with many other people in the workplace.

Moreover, in a society where working is a fundamental value, retirement often means losing one's dignity, and the lack of work on which a person's life may have been shaped for about half a century creating a gap that is difficult to fill. The changes may cause a feeling of loneliness during retirement and can affect QoL and retirement satisfaction.[30] The results could be an excellent practical guide for planning and policymaking to prevent the onset of retirement syndrome in national retirees and retired military veterans. Further studies can evaluate the study outcomes for a more extended period. Moreover, similar studies in different ethnicities and races can be conducted.

One of the study's limitations was that only the male population had been investigated, and the results cannot be generalized to the female population. Besides, this study was conducted in Iran (Safashahr); thus, the results cannot be fully generalized to the elderly of different ethnicities and countries with different economic and social conditions.

Conclusion

The results indicated that the mean scores of retirement syndrome and QoL and its subscales differed significantly between experimental and control groups. Implementing training interventions, such as relaxation exercises, is also essentially cost-effective for the elderly in retirement centers or daycare centers. Also, it is highly recommended to include the training interventions in integrated care programs for middle-aged and older people and the expanded application of interventions in all types of services provided to older people due to numerous advantages of the programs, such as affordability, simplicity, and homemade nature. However, this study was performed only in the elderly male population. Since the incidence of retirement syndrome is different between older men and women and their effectiveness in educational interventions is different, the results of this study cannot be generalized to the elderly retired female population.

Ethical Considerations

Ethics approval for this study was obtained from the Ethics Committee of Shiraz University of Medical Sciences

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Author Contributions

All authors contributed to the study and the final manuscript.

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