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Effect of expressive writing on the sexual self-concept in men with multiple sclerosis: a randomized clinical controlled trial

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Abstract

Background Previous studies have examined the various outcomes of expressive writing intervention in different populations. The purpose of this study was to evaluate the effect of expressive writing on the sexual self-concept of men with multiple sclerosis.

Methods This parallel randomized controlled clinical trial conducted on 70 men attending an MS clinic in Tehran in 2022. The participants were randomly assigned to expressive writing intervention and control groups. For two weeks, participants in the intervention group disclosed their emotions and expressed their feelings in writing twice a week. Sexual self-concept was evaluated using the Multidimensional Sexual Self-Concept Questionnaire on three occasions, before, after, and 4-week follow-up. The data ware analyzed using SPSS software version 22 (IBM Corp., Armonk, N.Y., USA). The analysis employed Chi-squared test, Fisher's exact test, independent t-test, and repeated measured ANOVA. A p-value < 0.05 was considered to be statistically significant.

Results The mean of age in the intervention group was 38.6 ± 6.85 years, while in the control group it was 38.94 ± 6.07 years. There were no significant differences between the two groups, in terms of these characteristics. According to the results, the dimensions of SSC did not change over time assessments, except for sexual problem self-blame ($p = 0.011$) and sexual fear/apprehension ($p = 0.042$) in the expressive writing intervention group, and sexual motivation in the control group ($p = 0.002$). On the other hand, before the intervention, sexual motivation was significantly higher in the control group compared to the expressive writing intervention group ($p = 0.046$).

Conclusions Our findings did not support the general effectiveness of a 2-week expressive writing intervention on the sexual self-concept of the men with MS except for the sexual fear/apprehension and sexual problem self-blame dimensions. However, further research is needed to better understand the effects of expressive writing intervention on Sexual self-concept in men with multiple sclerosis, while controlling for the limitations of our study.

Trial registration The present study has been registered on the Iranian Registry of Clinical Trials (IRCT) at https://irct.behdasht.gov.ir/trial/59664 on November 17, 2021, with the code IRCT20211028052892N1.

Keywords Expressive writing, Sexual Self-Concept, Men, Multiple sclerosis, Sexual function

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Background

Multiple sclerosis (MS) is a common chronic neurodegenerative disease of the central nervous system, leading to neurological disability, particularly in young adults [1]. It affects 2.8 million cases worldwide [2]. In Iran, the number of people with MS was approximately 89,000 in 2021 and continues to rise [3]. MS often occurs in young people between the ages of 20 and 40, a critical period for establishing relationships, marriage, and starting families [2]. The chronic and debilitating nature of MS can negatively impact both mental and physical health [4]. The interplay of psychological and physical factors significantly impacts the sexual function of men with MS [5]. Besides, MS can manifest with a range of symptoms including motor and cognitive impairment, bowel and bladder dysfunction, fatigue, and mood disorders. These symptoms can impact a person's sexual function, family and social life, and threaten their long-term independence and quality of life, particularly during their most productive years [6]. Sexual function is a crucial aspect of quality of life for both young women and men [2, 7]. Many individuals with MS experience sexual dysfunction that impacts different aspects of their lives. Although MS is more common in women, sexual dysfunction is highly prevalent in both genders, with studies reporting rates of 40–80% in women and 50–90% in men with MS [8]. Women with MS may experience issues such as loss of libido, impaired orgasm, reduced vaginal lubrication, and decreased genital sensation [9], while men may face challenges such as erectile dysfunction or diminished sexual desire, that can impact sexual performance [10]. Erectile dysfunction, with a prevalence ranging from 16 to 92%, is the most common form of dysfunction that can affect sexual self-esteem and satisfaction [5]. Sexual dysfunction in individuals with MS can be attributed to various mechanisms. Neurological lesions can impact sexual function through different pathways. Additionally, practical issues stemming from neurological complications; such as bladder and bowel dysfunction, spasticity, pain or impaired motility can amplified sexual dysfunction [11]. It should be noted that MS can also contribute to a negative body image and self-concept, leading to reduced self-esteem [12]. Sexual self-concept (SSC) is how an individual perceives of themselves as a sexual being. It is a dynamic concept that involves organizing personal sexual characteristics into an internal structure [13, 14]. A negative SSC can lead to lower sexual activity, reduced sexual satisfaction, fear of sex, and other psychological issues related to sexuality [15]. Since SSC includes sexual attitudes, behaviors, and feelings related to sex [16], psychological interventions may be beneficial in enhancing it. Expressive writing (EW) is a psychological intervention introduced by Pennebaker in 1986 [17]. It is a simple and low-cost intervention that helps individuals address their deep feelings and negative experiences through writing [18]. EW involves reflecting on emotionally burdensome events and transforming them into a narrative. This process helps individuals express emotions, thoughts, and confusing elements of an experience, turning them into clear verbal expressions [19]. The effects of EW on cognitive, emotional, social, and biological aspects of health have been extensively studied [20]. Afshar et al. (2023) demonstrated that EW is a cost-effective, non-invasive intervention for improving sexual function in women with MS [21]. Previous studies have shown that EW can enhance body image, sexual satisfaction and marital satisfaction in women with MS [4, 12]. The mechanisms behind the effects of EW on mental and psychological well-being are complex, involving a combination of immediate and long-term changes in cognitive, emotional, social, and biological factors [22]. While several studies have examined the outcomes of expressive writing interventions (EWI) [23], there is a gap in research regarding the potential effects of EW on SSC, particularly in men with MS. This study aims to investigate the effect of EWI on the SSC of men with MS.

Methods

This parallel randomized controlled clinical study was conducted at an MS clinic in Tehran.

Ethics statements

The study was conducted in compliance with the Declaration of Helsinki, and all participants provided informed consent. It was approved by the Ethics Committee of Iran University of Medical Sciences with the ID IR.IUMS.REC.1400.662 (https://ethics.research.ac.ir/EthicsProposalViewEn.php?id=226599) and registered in the Iranian Registration of Clinical Trials (IRCT) with the ID IRCT20211028052892N1 (https://irct.behdasht.gov.ir/trial/59664).

To recruit eligible participants, a notice was posted at the sampling site outlining the study's quality and inclusion criteria.

Participants

Participants were recruited through an invitation banner displayed at the clinic. Out of the 97 men screened, 77 met the inclusion criteria and were selected for the study. After excluding 7 individuals, a total of 70 men with MS completed the study (Fig. 1). The participants were randomly assigned to two groups: 35 in the EWI group and 35 in the control group. Selection was done through consecutive sampling and random allocation. The inclusion criteria for this study were Iranian nationality, ability to read and write, age between 20 and 50 years, married men with stable MS, who had engaged in sexual activity at least once in the last month, and had a disability score

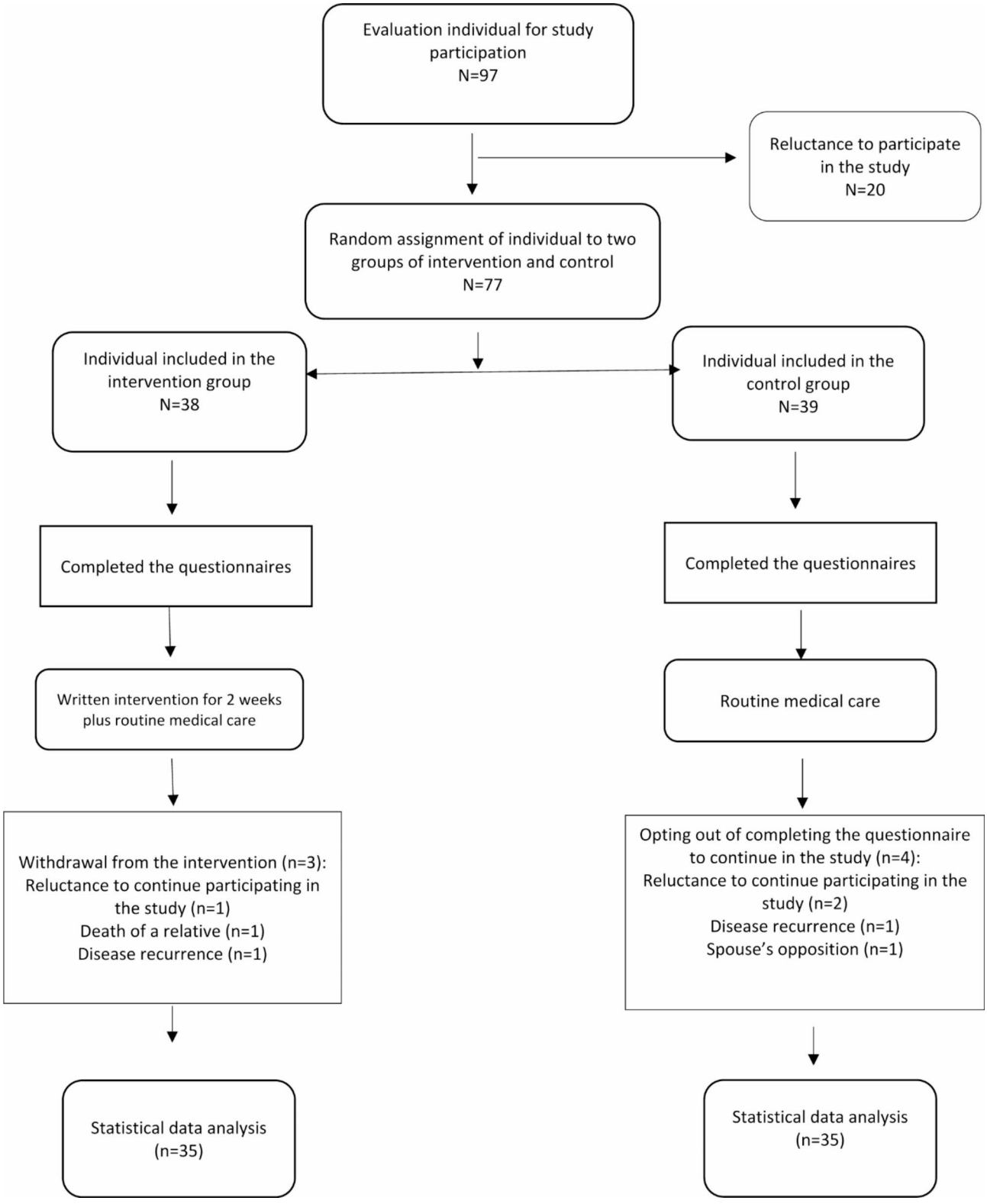

Fig. 1 Consort diagram

ranging from 1 to 5.5 based on the Expanded Disability Status Scale (EDSS) [24]. Additionally, participants could not have a history of other chronic or disabling diseases aside from MS, infertility, or alcohol use. They must also not be using psychiatric drugs, narcotic drugs, or any medication that could affect sexual performance. Participants who chose not to continue in the study were excluded.

Sample size

The sample size was determined based on a 95% confidence level and 80% power. Seventy eligible men were randomly assigned to two groups, with each group containing of 35 men.

Randomization

The randomization process involved using a computer-generated sequence of numbers from www.randomization.com to assign participants to the two groups.

Instruments

The data collection questionnaires included an Individual Characteristic Questionnaire (ICQ) and the Multi-Dimensional Sexual Self-Concept Questionnaire (MSSCQ). The ICQ collected information on individual characteristics such as age, education, occupation, economic status, number of children, and housing status. The reliability of the ICQ was confirmed by five faculty members specializing in reproductive health and methodology. The MSSCQ is a 100-item self-report questionnaire developed by Snell in the 1990s [25]. It uses a 5-point Likert scale from 1 (never) to 5 (always) to assess positive and negative sexual concepts. The questionnaire covers 20 aspects of SSC, including sexual anxiety, sexual self-efficacy, sexual self-consciousness, motivation and avoid risky sex, chance/lack sexual control, sexual-preoccupation, sexual self-assertiveness, sexual-optimism, sexual problem self-blame, sexual self-monitoring, sexual-motivation, sexual problem self-management, sexual self-esteem, sexual-satisfaction, powerful-other sexual control, sexual self-schema, sexual fear/apprehension, sexual problem self-prevention, sexual-depression, and personal-sexual-control [26, 27]. The positive concepts refer to those dimensions such as sexual motivation, sexual self-schema, sexual self-esteem, and sexual satisfaction. On the other hand, the negative concepts include some concepts such as sexual anxiety, sexual depression, and powerful-other sexual control [28]. The questionnaire has demonstrated internal consistency and validity in various studies, with reported Cronbach's alpha coefficients for the 20 subscales ranging from 72 to 94% [14, 26, 29]. Previous studies has also confirmed the reliability and validity of the Persian version of the questionnaire, with a Cronbach's alpha of 0.89 [30]. Ziaei et al. (2013) evaluated the Persian version of the questionnaire in an Iranian community, reporting a Cronbach's alpha coefficient of 0.88 for the entire questionnaire and 0.41 to 0.87 for the subscales [29]. In this study, the Cronbach's alpha coefficient was calculated as 0.87.

Intervention

This parallel randomized controlled clinical trial was conducted on seventy eligible men with MS who were referred to an MS clinic in Tehran, Iran in 2022. All participants provided informed consent after being fully informed about the purpose and intervention methods. After assigning participants to the two groups, they completed the ICQ and the MSSCQ. Participants were assured that they had no restrictions on receiving other disease-related treatments. The intervention group received a two-week EWI program, where participants were instructed to write twice a week. They were asked to write in the morning, as soon as possible after waking up, with no particular right or wrong way and without worrying about spelling or grammar. They simply allowed their hand to move over the paper and write down whatever came to mind. Participants were encouraged to express their emotions and feelings through writing for 15 to 30 min in a safe and quiet environment at home [31]. Detailed instruction were sent to participants through audio messages on WhatsApp, and they were followed up with voice calls during the intervention period to track progress. The control group received routine care, including basic self-care advice and a drug consumption guide, but no sexual health education. The control group was aware of the study's main goal and could not be blinded as they were invited to participate in the study.

Data analysis

The data were analyzed using SPSS software version 22 (IBM Corp., Armonk, N.Y., USA). The analysis included Chi-squared test, Fisher's exact test, independent t-test, and repeated measures ANOVA. A P-value < 0.05 was considered statistically significant.

Results

A total of 70 men participated in the study, with an equal number in each group. The flowchart of the study is shown in Fig. 1. The mean age in the intervention group was 38.6 ± 6.85 years, and in the control group it was 38.94 ± 6.07 years. Table 1 presents the characteristics of participants in both groups, showing no significant differences between them. Table 2 displays the mean and standard deviation of SSC dimensions before, immediately after the intervention, and at a 4-week follow-up in both groups. The dimensions of SSC did not change over time assessments, except for sexual problem self-blame

Table 1 Characteristics of study participants

Variables	Groups	Control	EWI	*P*
		N	%	
Type of MS	RRMS*	33 (94.2)	33 (94.2)	0.513[a]
	SPMS**	2 (5.8)	1 (2.9)	
	PPMS***	0 (0)	1 (2.9)	
Education	High school	13 (37.1)	6 (17.1)	0.060[b]
	University	22 (62.9)	29 (82.9)	
Spouse's education	High school	10 (28.6)	4 (11.4)	0.073[b]
	University	25 (71.4)	31 (88.6)	
Occupation	self-business	22 (62.9)	15 (42.9)	0.150[b]
	Employee	11 (31.4)	19 (54.2)	
	Retired	2 (5.7)	1 (2.9)	
Spouse's occupation	Housewife	27 (77.1)	21 (60.0)	0.122[b]
	Employed	8 (22.9)	14 (40.0)	
Number of children	0	11 (31.4)	15 (42.9)	0.598[b]
	1	14 (40.0)	11 (31.4)	
	2	10 (28.6)	9 (25.7)	
Economic status	Undesirable	6 (17.1)	2 (5.7)	0.165[b]
	Relatively desirable	26 (74.3)	26 (74.3)	
	Desirable	3 (8.6)	7 (20.0)	
Housing status	Owner	21 (60.0)	22 (62.8)	0.965[b]
	Rental	11 (31.4)	10 (28.6)	
	Relative's house	3 (8.6)	3 (8.6)	
Having a private bedroom	Yes	30 (85.7)	33 (94.3)	0.232[b]
	No	5 (14.3)	2 (5.7)	
Contraceptive methods	No contraception	5 (14.2)	3 (8.6)	0.813[a]
	Withdrawal	12 (34.3)	15 (42.9)	
	Condom	14 (40.0)	12 (34.3)	
	Other	4 (11.5)	5 (14.2)	
EDSS	1 and 1.5	25 (71.4)	26 (74.3)	0.809[c]
	2 and 2.5	5 (14.3)	2 (5.7)	
	3 and 3.5	3 (8.6)	5 (14.3)	
	4 and 4.5	2 (5.7)	2 (5.7)	
	Median	1	1	
	Mean ± SD	1.58 ± 0.90	1.64 ± 1.06	
Age ± Year)	Mean ± SD	38.94 ± 6.07	38.6 ± 6.85	0.825[c]
Spouse's age ± Year)	Mean ± SD	34.14 ± 5.08	34.82 ± 6.72	0.632[c]
EDSS				
Body mass index ± Kg/m^2)	Mean ± SD	27.04 ± 3.21	25.68 ± 3.98	0.121[c]
Number of sexual intercourses occurrence per month	Mean ± SD	5.28 ± 3.50	5.20 ± 3.00	0.913[c]
Number of days living with spouse per month	Mean ± SD	27.31 ± 5.43	28.00 ± 5.10	0.588[c]
Age of disease onset ± Year)	Mean ± SD	31.02 ± 8.12	28.97 ± 9.24	0.913[c]
Age at marriage ± Year)	Mean ± SD	29.85 ± 5.95	29.20 ± 6.72	0.326[c]
spouse's age at marriage ± Year)	Mean ± SD	25.05 ± 5.19	25.57 ± 5.56	0.624[c]

[a]. Fisher's exact test; (b) Chi square; (c) Independent t-test

*. Relapsing-Remitting MS; **. Secondary-Progressive MS; ***. Primary-Progressive MS

($p = 0.011$) and sexual fear/apprehension ($p = 0.042$) in the EWI group, and sexual motivation in the control group ($p = 0.002$). Sexual problem self-blame significantly decreased four weeks after the intervention completion compared to before ($p = 0.043$). Additionally, the dimension of sexual fear/apprehension also was significantly higher four weeks after intervention completion compared to before ($p = 0.032$) and immediately after ($p = 0.044$) in the EWI group. Before the intervention, sexual motivation was significantly higher in the control group compared to the EWI group ($p = 0.046$). However, four weeks after the intervention, sexual motivation significantly increased in the control group compared to before ($p = 0.007$) (Table 2).

Table 2 Comparison of participants' sexual self-concept dimensions in two groups

SSC dimensions	Groups	Before	After	4 weeks follow-up	*P**
		Mean ± SD	Mean ± SD	Mean ± SD	
Sexual anxiety	Control	3.54 ± 5.94	3.38 ± 5.22	3.22 ± 5.40	0.793
	EWI	2.34 ± 4.01	2.18 ± 3.09	2.03 ± 3.98	0.864
	P**	0.465	0.391	0.321	
Sexual self-efficacy	Control	10.80 ± 5.78	9.51 ± 5.37	10.64 ± 5.58	0.121
	EWI	10.15 ± 4.48	10.46 ± 4.81	10.93 ± 4.82	0.656
	P**	0.647	0.565	0.825	
Sexual self-consciousness	Control	10.00 ± 5.47	9.19 ± 5.01	10.32 ± 5.76	0.308
	EWI	10.31 ± 4.56	10.00 ± 5.67	9.37 ± 5.78	0.576
	P**	1.00	0.532	0.717	
Motivation and avoid risky sex	Control	10.96 ± 7.79	12.41 ± 7.62	12.90 ± 6.80	0.202
	EWI	13.90 ± 6.31	13.43 ± 6.40	11.87 ± 6.92	0.122
	P**	0.137	0.495	0.554	
Chance/lack sexual control	Control	1.93 ± 3.07	1.93 ± 3.07	1.77 ± 3.04	0.912
	EWI	2.65 ± 3.35	1.87 ± 3.04	2.81 ± 3.34	0.185
	P**	0.717	0.567	0.203	
Sexual-preoccupation	Control	5.16 ± 5.84	5.64 ± 6.55	5.48 ± 6.37	0.705
	EWI	6.56 ± 5.74	7.18 ± 5.67	7.18 ± 6.08	0.622
	P**	0.291	0.370	0.282	
Sexual self-assertiveness	Control	2.25 ± 2.83	3.54 ± 3.69	3.22 ± 3.30	0.157
	EWI	2.96 ± 3.56	2.96 ± 3.07	3.75 ± 3.11	0.436
	P**	0.453	0.594	0.519	
Sexual-optimism	Control	5.16 ± 4.18	4.35 ± 4.02	3.54 ± 3.91	0.082
	EWI	4.37 ± 3.96	3.59 ± 4.06	3.43 ± 3.22	0.471
	P**	0.460	0.546	0.903	
Sexual problem self-blame	Control	6.77 ± 5.85	7.41 ± 5.89	7.25 ± 5.75	0.671
	EWI	6.56 ± 4.82	4.06 ± 4.65	4.84 ± 4.99	**0.011**
	P**	0.911	**0.014**	0.080	
Sexual-monitoring	Control	2.09 ± 4.42	2.09 ± 4.23	2.41 ± 4.05	0.806
	EWI	1.87 ± 3.04	2.03 ± 3.32	2.34 ± 3.58	0.716
	P**	1.000	0.875	0.938	
Sexual motivation	Control	8.22 ± 5.25	9.03 ± 5.83	11.29 ± 6.05	**0.002**
	EWI	11.09 ± 5.19	10.15 ± 5.31	11.25 ± 5.95	0.313
	P**	**0.046**	0.360	0.979	
Sexual problem self-management	Control	8.06 ± 5.42	8.22 ± 4.92	7.58 ± 4.97	0.655
	EWI	8.90 ± 3.04	8.28 ± 3.93	9.21 ± 4.03	0.357
	P**	0.400	0.892	0.156	
Sexual self-esteem,	Control	8.06 ± 6.14	8.70 ± 5.47	9.51 ± 5.82	0.197
	EWI	8.43 ± 5.74	8.90 ± 3.96	9.21 ± 5.25	0.573
	P**	0.838	0.808	0.832	
Sexual-satisfaction	Control	10.16 ± 6.76	9.51 ± 6.62	10.00 ± 6.45	0.537
	EWI	9.68 ± 5.67	9.37 ± 6.05	10.46 ± 6.64	0.264
	P**	0.776	0.926	0.777	
Powerful-other sexual control	Control	0.80 ± 2.61	0.64 ± 2.13	0.64 ± 2.13	0.849
	EWI	0.78 ± 2.57	1.09 ± 2.76	0.78 ± 2.23	0.813
	P**	0.813	0.450	0.806	
Sexual self-schema	Control	12.41 ± 7.17	11.29 ± 6.82	12.41 ± 7.28	0.109
	EWI	12.34 ± 6.21	12.65 ± 6.21	12.96 ± 5.65	0.730
	P**	0.930	0.531	0.739	
Sexual fear/apprehension	Control	0.32 ± 1.79	0.64 ± 2.13	1.12 ± 2.80	0.140
	EWI	0.46 ± 1.48	0.78 ± 2.23	1.40 ± 2.61	**0.042**
	P**	0.703	0.579	0.686	

Table 2 (continued)

SSC dimensions	Groups	Before	After	4 weeks follow-up	*P**
		Mean ± SD	Mean ± SD	Mean ± SD	
Sexual problem self-prevention	Control	11.77 ± 5.85	12.41 ± 5.89	11.93 ± 6.66	0.784
	EWI	10.15 ± 4.66	10.93 ± 5.14	10.92 ± 5.64	0.558
	P**	0.196	0.369	0.403	
Sexual-depression	Control	2.90 ± 4.96	2.41 ± 4.63	2.25 ± 5.13	0.413
	EWI	2.65 ± 4.01	2.03 ± 3.32	2.50 ± 4.01	0.539
	P**	1.000	0.878	0.835	
Personal-sexual-control	Control	9.83 ± 5.55	10.00 ± 4.83	9.35 ± 5.43	0.678
	EWI	7.34 ± 4.01	7.96 ± 4.18	7.50 ± 4.21	0.717
	P**	0.059	0.152	0.135	

*. Repeated measure ANOVA; ** Independent t-test

Discussion

This study aimed to investigate the effect of EWI on the SSC of men with MS. The results indicated that while sexual motivation increased in the control group over time, engaging in EWI for two weeks did not significantly affect the dimensions of SSC, except for sexual fear/apprehension and sexual problem self-blame. Sexual problem self-blame decreased significantly four weeks after the intervention compared to before and was lower than the control group post-intervention. Moreover, sexual fear/apprehension increased significantly four weeks after the intervention compared to before and immediately after in the EWI group. To the best of our knowledge, this study is the first to explore the effects of EWI on SSC in men with MS. Previous research has highlighted the positive psychological effects of EWI on a variety of participants [21, 32–34]. For instance, Afshar et al. (2023) concluded that EW is a non-invasive and cost-effective intervention that improves sexual function in women with MS [21]. Meston et al. (2013) found that EW effectively reduces sexual dysfunction in women with a history of child sexual abuse [35]. In line with our findings, Farmer et al. (2024) reported that weekly self-compassionate expressive writing led to improvements in self-blame, self-shame, and perceived control in adults with sexual victimization-related stigma [36]. Self-blame and denial predict poor mental health and quality of life in individuals with MS [37], leading to psychological distress, anxiety, and depression [38]. Writing about these emotions helps individuals process their experiences, develop more positive evaluations of the event, and contextualize the experience [35]. Additionally, our study found that EWI can increase sexual fear/apprehension in men with MS over time. Pascual-Leon et al. (2016), noted that while EW is effective, the underlying mechanisms of change are not fully understood [39]. In accordance with our findings regarding increased sexual fear/apprehension, previous studies have also observed that EW may initially lead to negative mood, increased physical symptoms, and feelings of fear, anger, or sadness in some participants [39]. Lukenda et al. (2024), also found that EW can lead to a decrease in positive affectivity from the post-EW period to a 4-week follow-up [40]. During EW, individuals engage with personally evocative content, leading to development of new personal insights that are further explored, reflecting an ongoing process of meaning-making. This process allows individuals to gain awareness of new aspects of their experiences as they write [39]. However, there were no statistically significant decreases in the negative and positive concepts of SSC within and between the two groups over time. Personal self-concept, socio-cultural roles and norms, socialization experiences, and gender-typed schemas can influence the outcomes of EW [41]. Men generally derive less benefit from psychological and emotional interventions compared to women, particularly those involving verbal processing. This disparity may be attributed to men being less inclined to self-disclose and express emotions, possibly influenced by their socialization process [42]. However, Gueta et al. (2020) suggested that the consequences of self-disclosure may vary depending on the context, goals, benefits, and risks [43]. In our study, the control group exhibited significantly lower sexual motivation than the EW group before the intervention. However, four weeks after the intervention, the men in the control group experienced a statistically significant increase in sexual motivation compared to before. There were no significant differences in sexual motivation between the two groups post-intervention and at follow-ups. The mechanisms underlying of sexual behavior are intricate, involving many internal and external complex factors such as psychological, mental, hormonal, and neural factors, that contribute to sexual motivation [44]. Our findings contradict previous studies that have demonstrated positive effects of EW on sexual function in women [32, 34]. Our web-based data collection focused on culturally taboo questions related to sexual self-concept, attracting a younger, more educated male demographic, particularly those with relapsing MS. This is significant as changes in sexual function among individuals with MS maybe

influenced by factors such as older age, greater MS severity, physical challenges, and medication interventions, potentially impacting the efficacy of psychological interventions like EW [21]. Further research is warranted to delve deeper into these areas.

Strengths and limitations

The study's main strength is its focus on using EW as a low-cost intervention to enhance the subjective well-being of men with MS, particularly in the context of social support, specifically targeting SSC of men with MS, an area that has been received less attention. However, there are some limitations to consider. Firstly, the study modified the traditional Pennebaker expressive writing protocol by condensing the intervention to two sessions over two weeks based on cultural preferences and pilot study feedback. Secondly, the web-based data collection method may introduce selection bias [45] towards younger participants or those with easier access to smartphones. Moreover, the study mainly included men with relapsing MS and low disability levels (around 70% had an EDSS score of 1 or 1.5). Including older MS patients with progressive MS and higher disability levels (e.g., EDSS scores 5–7) could have yielded different results. Thirdly, blinding was not feasible due to the nature of the intervention and recruitment method, potentially influencing the results. Lastly, the impact of the COVID-19 pandemic on clinical research [46], could potentially affect the generalizability of the study results. Future research with longer-term EW interventions may offer further insights.

Conclusions

Our study findings have important implications for research and clinical practice. The 2-week EWI did not show overall effectiveness on the sexual self-concept of men with MS except for more improvement in sexual fear/apprehension and sexual problem self-blame dimensions. These results contribute to our understanding and can guide further research in this area. Further studies are needed to explore the effects of EWI on SSC in men with MS, considering factors such as the frequency and severity of MS relapses, as well as the location of demyelization, which may impact the management of sexual dysfunction in these patients.

Abbreviations

MS	Multiple Sclerosis
EW	Expressive writing
EWI	Expressive writing intervention
SSC	Sexual Self-Concept
EDSS	Expanded Disability Status Scale

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12883-025-04110-x.

Supplementary Material 1

Supplementary Material 2

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Author contributions

L.A., and M.M. conceived and planned the study; L.A., M.M.,.M.N., and N.S. conducted the research; M.M. collected the data; H.H. performed the analysis; M.M. wrote the main manuscript text; L.A. assisted in writing, editing and critically reviewing the manuscript.

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Data availability

The datasets used and analyzed in the current study are available from the corresponding author upon reasonable request without requiring authentication from participants. The completion of the questionnaires was done anonymously and without authentication of individuals.Participants participated in the study with informed and voluntary consent.

Declarations

Ethics approval and consent to participate

This study was approved by the Research Ethics Committee of Iran University of Medical Sciences, with approval ID IR.IUMS.REC.1400.662. All participants volunteered to take part in the study and were informed about its objectives. Informed consent was obtained from each participant before they completed the questionnaires. All participants were assured of the anonymity and confidentiality of their responses.

Consent for publication

N/A.

Competing interests

The authors declare no competing interests.

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