

The Effects of Acupressure on Menopausal Symptoms: A Randomized Controlled Study

Akupresur Uygulamasının Menopozal Semptomlar Üzerine Etkisi: Randomize Kontrollü Çalışma

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ABSTRACT

Menopause is a life cycle in which women transition from the reproductive age to the age when reproducibility decreases due to the decline in ovarian functions. The purpose of this study designed as an experimental randomized trial with a post-test control group is to examine the effect of acupressure on menopausal symptoms. The study was carried out with 108 females who sought treatment for any reason in a family health center between December 2019 and April 2020. Data in the study were collected using the Participant Information Form and Menopause Symptoms Rating Scale (MSRS). Women in the acupressure group were administered a total of 16 acupressure applications for 8 weeks. The women in the control group received no intervention. After the intervention, MSRS mean scores of women in the acupressure group were statistically lower in comparison to the control group ($p<0.05$). The severity of menopausal symptoms were found to be reduced by acupressure.

Keywords: Acupressure; menopausal symptoms; nursing, women's health

ÖZET

Menopoz, kadınların üreme çağından, over fonksiyonlarındaki gerilemeye bağlı üreme yeteneğinin kaybolduğu çağa geçtiği bir yaşam dönemidir. Bu çalışma, akupresurun menopoz semptomları üzerindeki etkisini belirlemek amacıyla son test kontrol gruplu deneysel bir randomize çalışmadır. Araştırma, Aralık 2019-Nisan 2020 tarihleri arasında herhangi bir nedenle aile sağlığı merkezine başvuran 108 kadın ile gerçekleştirildi. Çalışmada veriler, Katılımcı Bilgi Formu ve Menopoz Semptomları Değerlendirme Ölçeği (MSDÖ) kullanılarak toplandı. Akupresur grubundaki kadınlara haftada iki defa olacak şekilde 8 hafta süresince toplam 16 defa akupresur uygulaması yapıldı. Kontrol grubundaki kadınlara araştırma süresince herhangi bir girişim uygulanmadı. Araştırmada girişim sonrası akupresur grubundaki kadınların MSDÖ puan ortalamalarının kontrol grubuna göre daha düşük olduğu ve bu durumun istatistiksel olarak da anlamlı olduğu saptandı ($p<0.05$). Araştırmada akupresurun menopoz semptomlarının şiddetini azaltmada etkili olduğu bulundu.

Anahtar Kelimeler: Akupresur, menopozal semptomlar, hemşirelik, kadın sağlığı

INTRODUCTION

Menopause is a life cycle in which women transition from the reproductive age to the age when reproducibility decreases due to the decline in ovarian functions (Abedian, Eskandari, Abdi & Ebrahimzadeh, 2015). The cessation of menstruation for a year or more is defined as menopause. The definition provided by the World Health Organization (WHO) indicates that menopause is the permanent cessation

of menstruation due to loss of ovarian activity (World Health Organization, 2019).

Menopause is a period accompanied by many physical and emotional changes that include vasomotor symptoms including night sweats, hot flashes, and pain; joint pain; decreased motion flexibility; vaginal discharge; stress incontinence; reduced hydration and wrinkling of the skin; neuropsychiatric symptoms such as forgetfulness, headache;

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psychiatric problems such as depression, anxiety, insomnia, mood swings; and decreased sexual desire (Celik-Pasinlioglu, 2014; Erkin, Ardahan & Kert, 2014; Lui Filho, Pedro, Baccaro & Costa-Paiva, 2018; Gönenç & Koç, 2019; AGOC, 2020).

Although it varies around the world, the average age of menopause is 51 (AGOC, 2020). In Turkey, life expectancy at birth for women is 80.8 (Turkish Statistical Institute, 2017). Turkey Demographic and Health Survey (2018) found that 45.1% of women aged 48-49 years were menopausal (Turkey Demographic and Health Survey, 2018). Today, with the prolongation of life expectancy, there is an increase in the duration women spend in the menopause period; the majority of their lives is spent in the postmenopausal period, and the significance of the issues to be encountered in this period is increasing (Ertem, 2009). Although the menopausal period is a physiological process, hormonal changes experienced during this period cause problems with different systems of the body, from vasomotor complaints to psychological symptoms, from sexual function changes to musculoskeletal system problems. Changes that occur during menopause can also negatively affect women's quality of life, lead to an increase in morbidity and mortality, and may impose an economic burden on the family (García-Portilla, 2009; Kalarhodi, Taebi, Sadat & Saber, 2011; Erkin et al, 2014; Abay & Kaplan, 2015). Despite the symptoms experienced due to menopause, making individuals feel good and helping them continue their daily activities are the most important goals of health care. Nursing interventions applied to relieve these symptoms include complementary and alternative treatment methods. Many alternative treatment methods are similar to nursing practices in terms of focusing on a holistic approach. The use of alternative treatments in menopause is increasing, and alternative treatment methods such as acupuncture, acupressure, aromatherapy, herbal therapies and breathing therapies are being employed (Armand, Ozgoli, Giti, & Majd, 2017; Li, Luo, Fu & Le, 2018; Kazemzadeh, Nikjou, Rostamnagad & Norouzi, 2016; Huang, Phillips, Schembri, Vittinghoff & Grady, 2015). Acupressure, one of the most frequently used alternative treatment methods in recent times, is a noninvasive, safe and effective massage technique that improves health and comfort in which applying pressure and massage to acupuncture points with a view to stimulating life energy balance (Marcus & Michaeli, 2010). Studies have revealed that acupressure reduces early menopause complications, (Armand, et al., 2017), improves sleep quality (Abedian, Eskandari, Abdi & Ebrahimzadeh, 2015), reduces postmenopausal hot flashes (Kun, et al., 2010), reduces anxiety levels (Chen & Chen, 2010), and has a significant effect on vasomotor symptoms of menopausal women (Venzke, Calvert & Gilbertson, 2010). The literature review indicated no studies on the application of acupressure on menopausal symptoms in Turkey. In this regard, the purpose of this study is to examine the effect of applying acupressure on menopausal symptoms.

MATERIALS and METHODS

Study design

This randomized clinical trial followed the guidelines of the Consolidated Standard of Reporting Trials–CONSORT 2010 (the Clinical Trial Registry under No. NCT04520542). This study was carried out in a randomized controlled manner to examine the effect of acupressure on menopausal symptoms in women who sought treatment for any reason in a family health center. The study was conducted with women who sought treatment in a family health center between December 2019 and April 2020.

Study Population and Sample

The study population consisted of women who sought treatment in a family health center for an examination for any reason.

The criterion for inclusion was the participants' being within the range of 45-65 years. Those who received pharmacological treatment related to menopause, had communication problems, hearing problems, or tissue deformities in the extremities were excluded from the study. The sample size was calculated considering the studies that utilized non-pharmacological methods to handle menopausal symptoms. A 0.5 medium effect size, considering an effect size varying between the range (0.25-0.83) indicated in the studies in the literature (Armand, Ozgoli, Giti, & Majd, 2017; Joshi, Khandwe, Bapat, & Deshmukh, 2011; Rindner, Strömme, Nordeman, Hange, Gunnarsson, & Rembeck, 2017) was utilized. The sample included 128 women who met the study inclusion criteria and had a 0.5 effect size and 5% margin of error, 95% CI and 80% power of representing the population as indicated by the power analysis results. Taking potential losses, the study included 140 women, corresponding to 10% of the sample size. Among the women included in the study, a randomized list assigning them into two groups at a ratio of 1:1 was created using a simple random sampling method on computer. The assignment of two sets created according to women's registration number to the study and control groups was determined by drawing lots. Thus, 70 women were included in the groups. Due to some reasons, 32 women excluded. Thus, the study was completed with 108 women (acupressure group: 51; control group: 57). This distribution is shown in the CONSORT Flow Diagram.

Data Collection Tools

Data collection was performed through the Participant Information Form to define the characteristics of women who sought treatment in the family health center and the Menopausal Symptoms Rating Scale to analyse the severity of menopausal symptoms.

Participant Information Form: The Participant Information Form, which was prepared based on the literature, consists of 11 questions determining the socio-demographic features

of the participants and the factors associated with menopause history.

Menopause Symptom Rating Scale (MSRS): Gürkan (2005) performed the validity and reliability of the Turkish scale, which was originally developed by Schneider, Heinemann et al. (1992) to evaluate the severity of menopausal symptoms and their effect on quality of life. This scale including menopause symptoms consists of 11 items and 3 sub-scales. The sub-scales of the scale are somatic, psychological and urogenital symptoms. The questions are responded on a 4-point Likert scale and scored as follows: 0 for none, 1 for mild, 2 for moderate, 3 for severe, and 4 for very severe. The scores range between 0 and 44. Higher scores indicate an increase in the severity of symptoms and negative effects on the quality of life (Binfaet al. 2004). Gürkan suggested that either a subgroup analysis should be performed again in new studies using this scale or an evaluation should be performed on the total score obtained using this scale as items 3 and 11 are included in different subgroups (originally in the somatic symptoms sub-scale) in the factor analysis. However, this study made evaluations using the total score (Gürkan, 2005). Cronbach's alpha coefficient was reported 0.84.

Data Collection Process

Pre-test data were collected from the women who sought treatment in the family health center and consented to participate in the study while they were waiting for their examinations, and a form including data concerning their socio-demographic, obstetric and gynecological details as well as contact information and MSRS pre-test data were collected face-to-face while the participants were in the waiting room. Data collection took approximately 5 to 10 minutes. Post-test data were collected for both groups 8 weeks after the pre-test using MSRS. Figure 1 demonstrates the flow chart of the data collection process and the interventions at all stages of the study.

Nursing Intervention

Acupressure Group

An acupressure certificate was received before the initiation of the study. Based on the computerized randomization, women assigned to the acupressure group were contacted, and they were administered a total of 16 sessions of acupressure, twice a week during 8 weeks in their house by the researcher.

Acupressure Administration Protocol: The women were administered acupressure in a semi-fowler position or supine position to make them feel comfortable and to enable the researcher to perform the practice comfortably on the points for acupressure. Then the acupressure points were applied in line with the direction of the meridian in a certain order. Administration order of Spleen 6th point (SP 6) and large Intestine 4th point (LI 4) (Jokar et al. 2017) were utilized (Ebrahimi et al. 2020). Four acupressure points including two points in the upper/lower extremity along with the parallel points in each intervention were administered. The intensity of the administration was adjusted by women's sensitivity since their reactions could be different from each

other. Thumb or index finger was used to apply the pressures manually considering the position of the point. Thirty-second massage was applied to each acupressure point before applying pressure. Following the massage, 90 seconds of continuous pressure was administered. Eight-minute sessions were administered to four points for two minutes in each intervention, with two minutes spent on each point. Compression was used at a frequency that would not upset the women, cause no pain, and have a relaxing effect.

Control Group

After the pre-test, the control group was administered no interventions in the research period.

Data Analysis: The analysis of the data was performed in the Statistical Package for Social Sciences (SPSS) 22.0. Descriptive statistics methods such as means, standard deviations, median, frequencies, ratios, minimum, maximum values, the independent t-test, and chi-squared test were utilized in the data analysis. $p < 0.05$ was accepted as the statistical significance.

Ethical Aspects

Before the initiation of this study, ethical approval (no: 2019/13) was obtained from the university's ethics committee. In addition, participating women's written informed consent was received.

RESULTS

The results obtained in this study to examine the effect of acupressure on menopause symptoms in menopausal women are demonstrated in tables.

Table 1. Distribution of the Sociodemographic and Menopausal Characteristics of the Women in the Study and Control Groups

Control Variables	Study group (N=51)		Control Group (N=57)		X ²	p
	N	%	N	%		
Age						
45-52	31	61	32	59	0.050	0.823
53-60	20	39	23	41		
Level of Education						
Literate	21	43.3	14	24.6	5.640	0.131
Primary school	23	45.0	32	54.1		
High school or higher education	7	11.7	11	21.3		
Number of children						
1-5	42	84.7	49	91.8	1.450	0.229
6-10	9	15.3	5	8.2		
Employment status						
Unemployed	48	94.9	55	98.4	1.105	0.293
Employed	3	5.1	2	1.6		



Time since last period						
Less than 6 months	9	15.3	6	9.8		
6 months to 1 year	5	8.5	4	8.2	1.485	0.686
1 to 4 years	23	47.5	26	44.3		
More than 4 years	14	28.8	21	37.7		
Coping with menopausal symptoms*						
I don't do anything	27	40.7	32	52.5	1.672	0.196
I receive medical support	14	23.7	13	21.3	0.101	0.751
Alternative medicine and herbs	21	35.6	14	23.0	2.320	0.128
Hobbies, social activities	8	10.2	9	14.8	0.576	0.448

*More than one option has been selected.

As Table 1 shows, there are no statistically significant differences in terms of age (study group: 51 ± 4.59 [min. 45, max. 60] and control group: 51 ± 3.39 [min. 45, max. 60]) (mean age in both groups: 51 ± 4.02 [min. 45, max. 60]), education level, number of children, employment status, duration since the last period and coping with menopausal symptoms in the study and control groups; the groups were similar ($p > 0.05$).

Table 2. Comparison of Mean MSRS Total and Subdimension Pre-Test Scores of Women in the Study and Control Groups (N = 108)

MSRS Subdimensions	Groups		*Test and Significance	
	Study Group (N=51)	Control Group (N=57)		
	Pre-test		t	p
	(X \pm SD)	(X \pm SD)		
Somatic Symptoms	10.6 \pm 2.0	10.4 \pm 1.7	0.807	0.421
Psychological Symptoms	10.7 \pm 2.1	10.6 \pm 1.9	0.062	0.951
Urogenital Symptoms	5.81 \pm 2.2	5.52 \pm 1.6	0.697	0.487
MSRS Total Score	27.1 \pm 4.7	26.6 \pm 3.6	0.728	0.468

* Independent t-test,

Table 2 demonstrates the MSRS total mean score and sub-scale pre-test scores of women in the study and control groups in pre-test mean scores of the somatic symptoms sub-scale were 10.6 \pm 2.0 for the study group and 10.4 \pm 1.7 for the control group. The difference was not significant ($p > 0.05$);

mean pre-test scores of the psychological symptoms sub-scale were 10.7 \pm 2.1 for the study group and 10.6 \pm 1.9 for the control group. The difference was not significant ($p > 0.05$); mean pre-test scores of the urogenital symptoms sub-scale were 5.81 \pm 2.2 for the study group and 5.52 \pm 1.6 for the control group. The difference was not significant ($p > 0.05$) (Table 2). The MSRS total mean pre-test scores of the study and control group were 27.1 \pm 4.7 in the study group and 26.6 \pm 3.6 in the control group. The difference was not significant ($p > 0.05$) (Table 2).

Table 3. Comparison of Mean MSRS Total and Subdimension Pre-Test and Post-Test Mean Scores of Women in the Study Groups (N = 51)

	Study group			
	Pre-Test	Post-Test	*Significance	
	$\bar{X} \pm SS$	$\bar{X} \pm SS$	t	p
Somatic Symptoms	10.6 \pm 2.0	7.74 \pm 1.2	10.330	0.001
Psychological Symptoms	10.7 \pm 2.1	8.91 \pm 1.0	7.192	0.001
Urogenital Symptoms	5.81 \pm 2.2	4.74 \pm 1.8	3.866	0.001
MSRS Total Score	27.1 \pm 4.7	21.4 \pm 2.4	9.995	0.001

t= Paired Sample T Test, $p < 0.05$ MSRS: Menopause Symptom Rating Scale

Table 3 demonstrates the comparison of the pre-test and post-test MSRS total mean scores and sub-scale scores of women in the study group. The Somatic Symptoms sub-scale pretest mean score in the study group was 10.6 \pm 2.0 post-test mean 7.74 \pm 1.2, the Psychological Symptoms sub-scale pretest score mean 10.7 \pm 2.1 post-test mean 8.91 \pm 1.0, Urogenital Symptoms sub-scale pretest score 5.81 \pm 2.2 post-test mean score 4.74 \pm 1.8, MSRS pre-test total mean score 27.1 \pm 4.7 posttest mean score 21.4 \pm 2.4, and a significant relationship was detected between pretest and posttest mean scores ($p < 0.05$) (Table 3).

Table 4. Comparison of Mean MSRS Total and Subdimension Pre-Test and Post-Test Mean Scores of Women in the Control Groups (N = 57)

	Control group			
	Pre-Test	Post-Test	*Significance	
	$\bar{X} \pm SS$	$\bar{X} \pm SS$	t	p
Somatic Symptoms	10.4 \pm 1.7	10.4 \pm 1.9	-	0.301
Psychological Symptoms	10.6 \pm 1.9	10.6 \pm 1.9	1.000	0.321
Urogenital Symptoms	5.52 \pm 1.6	6.06 \pm 1.4	-	0.001
MSRS Total Score	26.6 \pm 3.6	27.1 \pm 3.8	-	0.001



t= Paired Sample T Test, $p < 0.05$ MSRS: Menopause Symptom Rating Scale

Table 4 provides a comparison of the pre-test and post-test MSRS total mean scores and sub-scale scores of women in the control group. The mean score of the Somatic Symptoms sub-scale pretest score was 10.4 ± 1.7 post-test mean score of 10.4 ± 1.9 , the mean score of the Psychological Symptoms sub sub-scale pre-test score was 10.6 ± 1.9 post-test mean score was 10.6 ± 1.9 . No significant relationship was found between the pre-test and post-test mean scores ($p > 0.05$). Urogenital Symptoms sub-dimension pre-test mean score was 5.52 ± 1.6 posttest mean 6.06 ± 1.4 , MSRS pre-test total mean score 26.6 ± 3.6 posttest mean 27.1 ± 3.8 . No significant relationship was found between pre and post-test mean scores ($p < 0.05$) (Table 4).

DISCUSSION

Menopause is a period of change that begins with a decrease in ovarian functions. During this period, many women may experience symptoms such as vasomotor symptoms, headache, urinary incontinence, sleep disorders, mood swings and cognitive difficulties (Liu, et al., 2010). These symptoms affect the lives of women and their families. Women prefer complementary and alternative therapies, which they consider to be more reliable in coping with symptoms, due to the concern that pharmacological agents used for menopausal symptoms increase the risk of gynecological cancer. Acupressure is among the alternative methods used to cope with menopausal symptoms (Armand, et al. 2017; Özpınar, & Çevik, 2016). In this study, eight weeks of acupressure therapy was found to reduce the severity of menopausal symptoms. Armand, et al. (2017) analyzed the impact of acupressure on early menopausal symptoms, where it was discovered that acupressure applied three times a week throughout four weeks decreased the frequency and severity of hot flashes in comparison to the placebo group (Armand, et al., 2017). Another study reported that applying auricular acupressure over four weeks reduced menopausal symptoms (Ching-Ling et al. 2012). In another study on the subject, acupuncture and auricular acupressure were used together to cope with menopausal symptoms, and the severity of menopausal symptoms decreased after the intervention (Zhou, et al. 2011). Although acupressure is applied on the same meridians as acupuncture, its application technique is different. Considering the studies conducted on coping with menopausal symptoms, it is clear that acupuncture is frequently used (Chiu, et al. 2015; Kim, et al. 2011; Liu, et. 2018). In this case, it is assumed that acupressure increases the level of endorphins and reduces muscle tension when pressure is applied to the meridian and acupuncture points on the skin surface, thus relaxing the blood circulation, stimulating the body's natural self-healing process and protecting the body from diseases by providing

balance and harmony in the energy flow of the body (Cho & Tsay 2004; Liu, et al. 2018). It is thought that acupressure applied to SP6 and LI4 points in coping with menopausal symptoms provides relaxation and relief by inhibiting the sympathetic nervous system activity and stimulating parasympathetic activity in women and has a positive impact on women's symptoms.

CONCLUSION

The result of this study shows that applying acupressure is an effective method in controlling the severity of menopausal symptoms. Based on these results, in order to reduce the severity and frequency of menopausal symptoms, it is recommended that midwives and nurses who provide care in the relevant units include alternative treatment methods that can be used in the management of menopausal symptoms such as acupressure.

Strengths and Limitations

The present study utilized a randomized controlled design and examined the effects of the non-invasive alternative treatment method that can be used by women for a comfortable management of menopausal symptoms. These factors are considered to be the strengths of the study. On the other hand, the study has some limitations, which included acupressure was applied for a short period, there was no blinding procedure, and Pplacebo group/ sham acupressure was not proven in the comparison group.

Implications for Nursing Practice

One of the main duties of women's health nurses is to provide services for coping with symptoms experienced at every stage of women's life. Considering the life expectancy from birth, menopause constitutes approximately one third of women's lives. Therefore, it's important the cope with menopausal symptoms. Women's health nurses are recommended to receive complementary and alternative therapies such as acupressure training to protect and improve women's health and use acupressure in coping with menopausal symptoms. The use of these practices in care will contribute significantly to improving the quality of nursing care.

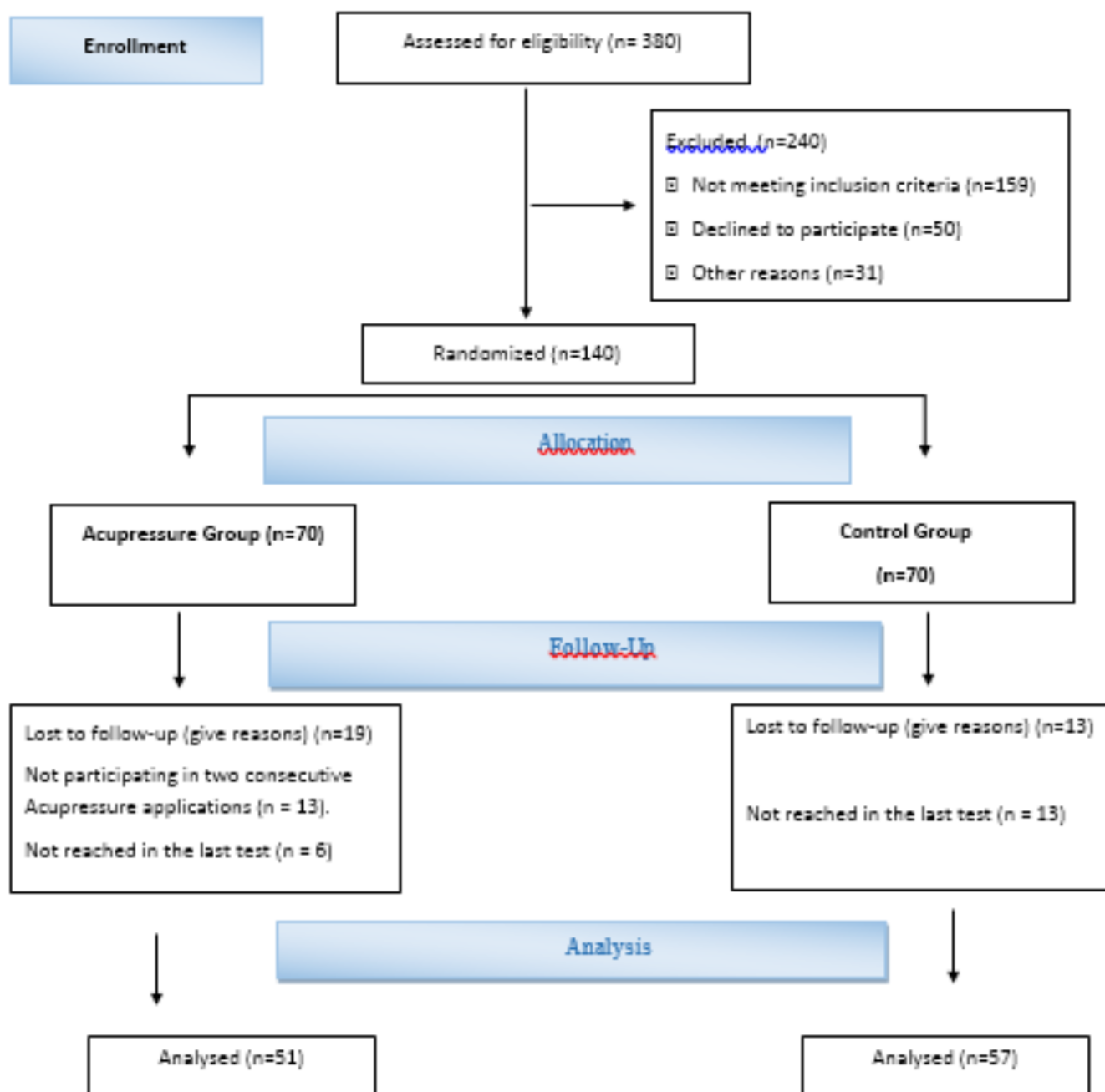


Figure 1. CONSORT follow diagram

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