



Effect of Telephone Counseling on Self-Efficacy in Self-Care Behaviors of Patients with COVID-19

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Abstract

Background: Promoting self-efficacy behaviors in self-care and people's true understanding of these behaviors are effective in controlling the disease, reducing the rate of transmission, and empowering patients. The aim of this study was to determine the effect of telephone counseling on self-efficacy in self-care behaviors of patients with coronavirus disease 2019 (COVID-19). **Methods:** This experimental study was conducted on patients with COVID-19 who had been referred to Shahid Beheshti hospital in Kashan, Iran, from May 2020 to August 2020. Eligible patients were recruited through convenience sampling and then allocated into an experimental (n=30) and a control (n=30) group using block randomization. In the experimental group, patients were trained through telephone counseling one, five, and 10 days after discharge. The control group received the usual training in the hospital. Data were gathered using a self-care questionnaire at different time intervals. The collected data were analyzed with SPSS software (version 11.5) using the Chi-square, one-way analysis of variance (ANOVA), and t-test. The significance level was set at 0.05.

Results: The mean score of self-care at time of discharge and two and four weeks later were 47.86 ± 6.84 , 62.23 ± 5.24 and 78.46 ± 3.38 , respectively. There was a significant difference in self-efficacy scores between the study groups at time of discharge ($P=0.29$). In addition, there was a significant difference in self-efficacy scores two weeks ($P=0.01$) and four weeks ($P=0.001$) after discharge from the hospital. The self-efficacy score in the experimental group increased significantly over time. Furthermore, group and time had significant effects on the self-efficacy score ($P<0.05$) two weeks ($P=0.01$) and four weeks ($P=0.001$) after discharge from the hospital between two groups.

Conclusion: Telenursing could improve COVID-19 patients' self-efficacy in self-care. Therefore, it is recommended to use telenursing in the treatment protocol of COVID-19 patients for improving self-care.

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Highlights:

What is current knowledge?

Telephone Counseling is one of the ways to increase self-care Behaviors in infectious diseases. According to the existing literature, no study has examined Effect of Telephone Counseling on Self-Care of Patients with COVID-19.

What is new here?

Telenursing could improve COVID-19 patients' self-efficacy in self-care.

Introduction

A novel coronavirus emerged in December 2019 in Wuhan, China (1). Strict quarantine measures including city lockdowns, border closures, and restricted commute were implemented worldwide following the spread of the disease (2). Iran has also been affected by the catastrophic effects of the coronavirus disease 2019 (COVID-19) pandemic. According to the latest statistics of the World Health Organization (WHO) and the Ministry of Health and Medical Education of Iran in mid-August 2020, about 20 million people worldwide and about 300,000 people in Iran were infected with the virus, which is rapidly spreading (3). The disease has killed more than 700,000 people worldwide to date, mostly the elderly, as well as those with chronic underlying diseases or immunosuppression (2-3). This disease can be transmitted through direct contact with respiratory droplets of an infected person (generated via coughing and sneezing), and touching surfaces contaminated with the virus (4). Considering these issues, training patients to prevent disease transmission and informing them about self-care activities are of particular importance. Training patients, as one of the most important roles of a nurse, is a fundamental strategy in controlling disease progression and reducing its complications (5). It should be noted that training COVID-19 patients has its own challenges, one of which is the problem of face-to-face training due to the use of personal protective equipment by the medical staff, especially nurses, and the fact that patients are not followed up

after discharge from the hospital (4). Therefore, distance education is of critical importance for these patients. Telenursing means remote nursing care that can include telephone information. In recent years, the use of telephone counseling in order to follow up patients' condition has increased. Telephone counseling is a type of distance care and a cost-effective strategy that can reduce negative consequences for patients after discharge (6) and prevent complications (7). Communicating with patients and training them is part of a care improvement strategy that can be facilitated through telephone counseling. Several studies indicated that telenursing has positive effects on controlling post-operative complications (6, 8). However, the results of one study showed that telephone counseling has fewer benefits among contagious patients than clinical counseling (9). Given the nature of COVID-19, which requires limited direct contact, it seems that telephone counseling not only can reduce costs, but also helps patients solve their problems in terms of self-efficacy in self-care.

Awareness is considered as one of the predisposing factors of self-efficacy in patients' self-care. Self-efficacy behaviors in self-care are based on the knowledge and skills of the individual and include not only the management of symptoms, but also the management of psychological and social consequences as well as lifestyle changes (10). Self-efficacy in self-care requires the active participation of the individual in health behaviors (11).

To date, the issue of self-efficacy in chronic diseases such as diabetes has been raised for controlling possible complications (10), but it seems to be also effective in COVID-19, which is an acute disease. Self-efficacy is essential for patients with COVID-19 because of the urgent need to quarantine and minimize contact with others. If the quarantine conditions for infected patients are not observed, the number of patients will increase more rapidly and can ultimately increase morbidity and mortality rates (4). Promoting self-efficacy behaviors in self-care and people's true understanding of these behaviors are effective in controlling the disease, reducing the rate of transmission, and empowering patients (12). Training patients and designing training programs can help improve patients' conditions and meet the patients' needs, especially during recovery (6). Studies about the effect of telenursing on self-efficacy in patients with COVID-19 are

limited (4). Therefore, this study was conducted to determine effects of telenursing on self-efficacy in self-care behaviors of patients with COVID-19.

Methods

This experimental study was performed on patients with COVID-19 who had been referred to the Shahid Beheshti Hospital in Kashan, Iran. Initially, 85 patients with COVID-19 were recruited via convenience sampling, from May 2020 to August 2020. Ten patients did not meet inclusion criteria and 15 patients were excluded due to unwillingness to participate in the study. Finally, 60 eligible patients were allocated into an experimental group (n=30) and a control group (n=30) through block randomization (quadruple blocks) (Figure 1). The inclusion criteria consisted of being a COVID-19 patient who had been discharged from the hospital in the past 24 hours, age of ≥ 30 years, willingness to participate in the study, access to telephone, ability to communicate by telephone, fluency in Persian, and Iranian citizenship.

The statistical sample size was estimated according to the data obtained from a study by Najafi et al. (13). Taking into account the assumptions ($\alpha = 0.01$, Power = 0.99), the sample size of 30 was calculated for each group according to the following formula:

$$n = \frac{(z_{1-\frac{\alpha}{2}} + z_{1-\beta})^2 + (s_1^2 + s_2^2)}{d^2}$$

Written informed consent was taken from all participants after explaining the research objectives and ensuring the confidentiality of personal information.

Data were collected using a questionnaire on demographic characteristics (age, gender, marital status, level of education, occupational status, history of smoking, and comorbidity) and a researcher-made scale consisting of 17 items on the self-efficacy of COVID-19 patients in self-care. This scale measured an individual's beliefs and ability to overcome different situations. Each question was scored based on a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Questions 1, 3, 8, 9, 13, and 15 were scored reversely. Therefore, the maximum and minimum scores that a person could gain in this scale were 85 and 17, respectively. The qualitative content validity of the questionnaire was approved by faculty members of Nursing and Midwifery School in Kashan University of Medical Sciences. The scale was completed before the intervention and two weeks after the intervention by 10 COVID-19 patients via telephone and reliability of the scale was confirmed by obtaining a Cronbach's alpha value of 0.82.

In the experimental group, patients were trained through telephone counseling one, five, and 10 days after discharge. The self-care training was based on the instructions of the WHO and the Ministry of Health and Medical Education of Iran (14), which included the following: examining patients' problems, making necessary recommendations for medications, examining drugs' side effects, nutritious advice, physical activities, strengthening the immune system, quarantine and prevention of disease transmission, how to disinfect surfaces using disinfectants, how to use personal protective equipment (such as masks and gloves), sexual counseling, and warning signs for recurrence. Of course, the specific needs of each patient were also examined, and possible solutions were presented to them. This training confirmed by an infectious diseases specialist and two faculty members at the nursing department (15). The average length of telephone conversations was 30 minutes, and could vary depending on the patient's needs. If more time was needed, to avoid fatigue of the patient and the researcher, counseling was done in the next call, the time of which was determined based on the patient's request. In addition, the researcher's phone number was provided to the patients 24 hours a day for unforeseen events. The control group, like other patients, received routine hospital training. Subjects in the control group also benefited from the trainings that were provided through television or social media. Therefore, in addition to the usual training, the experimental group also enjoyed the advantages of counseling, questions and answers, and training based on the needs assessment. Patients completed the questionnaire three times; at discharge (before the intervention), and two and four weeks after discharge from the hospital by telephone. Data were analyzed in SPSS software (version 11.5) using the Chi-square test, repeated-measures ANOVA, and t-test. The significance level was set at 0.05.

Results

The mean age of the participants was 49.00 ± 13.41 years in the experimental group and 50.80 ± 13.13 years in the control group. Moreover, 53.30% of the participants in the experimental group and 56.70% of the participants in the control group were men. In addition, 83.3% of the participants in the experimental group and 80% of those in the control group were married. Result of the Chi-square test and t-test showed no significant difference in the variables of age, gender, marital status, level of education, occupation, history of smoking, and underlying diseases between the study groups ($P > 0.05$) (Table 1).

Results of the independent t-test showed a significant difference in self-efficacy scores between the study groups at time of discharge ($P = 0.29$). In addition, there was a significant difference in self-efficacy scores two weeks ($P = 0.01$) and four weeks ($P = 0.001$) after discharge from the hospital. According to the results of the

repeated-measures ANOVA, the self-efficacy score in the experimental group increased significantly over time. Furthermore, group and time had significant effects on the self-efficacy score ($P < 0.05$) (Table 2).

Discussion

The findings of the present study showed that telenursing increased self-efficacy in self-care behaviors of patients with COVID-19. Xiao et al. (2020) conducted a study on self-efficacy in medical staff working with COVID-19 patients. In this study, self-efficacy improved sleep quality, increased self-confidence, and controlled psychological stress among the subjects (16). In line with our findings, Petrelli et al. (2020) reported that telenursing increased self-efficacy of patients with insulin pumps during the COVID-19 pandemic (17). In a recent study, telehealth was introduced as a suitable tool for educating patients with COVID-19 (18). Wolthers et al. (2020) reported telephone consultation as a substitute for face-to-face consultation during the COVID-19 pandemic (19). Ferretti et al. also found that the use of telephone counseling was effective in caring for COVID-19 patients (20). The results of similar studies on patients with myocardial infarction (21), ulcerative colitis (22), and cirrhosis (23) showed that self-care training increased patients' self-efficacy. So far, the focus of studies has been on self-care training and its effects on self-efficacy in chronic diseases, but the nature of COVID-19 disease is different due to the very high risk of transmission and the lack of a definitive treatment. These characteristics have made this disease the most serious threat to public health in the world. Therefore, in the case of COVID-19, the focus of research has been on prevention, patients' identification, disease control and management, patient care and support, and transmission routes (24).

In the present study, telenursing and telephone counseling by a nurse could improve self-efficacy in self-care among COVID-19 patients. The effects of telenursing and telephone counseling on various subjects have been studied. Studies on prevention of readmission (25), adherence to medication (26), and schizophrenia (27) indicated the positive effect of telenursing. Nevertheless, a study claimed that telephone counseling, in comparison with clinical counseling, had fewer benefits for patients (9). In our study, patients were involved in self-care activities via telenursing in order to overcome COVID-19-related problems and to achieve self-efficacy. We believe that this intervention could be beneficial for COVID-19 patients who have limited interaction with others due to quarantine. In this study, self-efficacy scores in the control group reduced significantly two weeks after discharge. This finding could be related to the fact that COVID-19 patients suffer from complications as well as weakness and fatigue, and are afraid of the possibility of transmission to family members (28). Considering the COVID-19 pandemic and the heavy burden of the disease (29), strengthening self-efficacy in patients' self-care could be effective in controlling the disease and reducing disease transmission.

Conclusion

In the present study, telenursing had positive effects on self-efficacy of COVID-19 patients in self-care. Considering the COVID-19 pandemic and the heavy burden of the disease, strengthening self-efficacy in patients' self-care could be effective in controlling the disease and reducing disease transmission. Therefore, it is recommended that hospitals be equipped with a unit consisting of nurses that provide the necessary instructional and supportive services for COVID-19 patients via telenursing as part of the post-discharge care. The results of this study should be interpreted in light of several limitations. Due to the unknown nature of COVID-19 and continuous changes in symptoms, complications, and consequently the educational content provided to these patients, it is necessary to rely on the results of the latest studies in this field to constantly revise the instructional content.

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Ethical statement

This study was approved by the Research Ethics Committee of Kashan University of Medical Sciences (ethical code: IR.KAUMS.NUHEPM.REC.1399.022). Written informed consent was taken from all participants after explaining the research objectives and ensuring the confidentiality of personal information.

Conflict of interest

The authors declare that there is no conflict of interest regarding publication of this article.

Author contributions

Conceptualization: Azade Safa, Mahdiah Sabery, Neda Mirbagher Ajorpaz. Methodology, analysis, research a review: Azade Safa, Neda Mirbagher Ajorpaz,

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References

- Shi Y, Wang G, Cai XP, Deng JW, Zheng L, Zhu HH, et al. An overview of COVID-19. *J Zhejiang Univ Sci B*. 2020; 21(5):343-360. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Yang Y, Peng F, Wang R, Yange M, Guan K, Jiang T, et al. The deadly coronaviruses: The 2003 SARS pandemic and the 2020 novel coronavirus epidemic in China. *J Autoimmun*. 2020; 109:102434. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Seyed Hosseini E, Riahi Kashani N, Nikzad H, Azadbakht J, Hassani Bafrani H, Haddad Kashani H. The novel coronavirus Disease-2019 (COVID-19): Mechanism of action, detection and recent therapeutic strategies. *Virology*. 2020; 551:1-9. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Luan RS, Wang X, Sun X, Chen XS, Zhou T, Liu QH, et al. Epidemiology, Treatment, and Epidemic Prevention and Control of the Coronavirus Disease 2019: a Review. *Sichuan Da Xue Xue Bao Yi Xue Ban*. 2020; 51(2):131-138. [[View at publisher](#)] [[Google Scholar](#)]
- Purabdollah M, Ghasempour M. Tele-Nursing New Opportunity for Nursing Care in COVID-19 Pandemic Crisis. *Iran J Public Health*. 2020; 49(Suppl1): 130-131 [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Blais AS, Pelletier J, Moore K. Telephone consultations in urology: Who, when, where, and why? *CUAJ*. 2017; 11(12):E453-E456. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Midtbø V, Raknes G, Hunskaar S. Telephone counselling by nurses in Norwegian primary care out-of-hours services: a cross-sectional study. *BMC FAM Pract*. 2017; 18(1):84. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Cusack L, Brennan M, Weissenberg L, Moore K. Breast clinic triage tool: telephone assessment of new referrals. *Breast*. 2012; 21(2):215-7. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Forsblom E, Ruotsalainen E, Ollgren J, Järvinen A. Telephone consultation cannot replace bedside infectious disease consultation in the management of Staphylococcus aureus Bacteremia. *Clin Infect Dis*. 2013; 56(4):527-35. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- D'Souza MS, Karkada SN, Parahoo K, Venkatesaperumal R, Achora S, Cayaban ARR. Self-efficacy and self-care behaviours among adults with type 2 diabetes. *Appl Nurs Res*. 2017; 36:25-32 [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Rina Amelia. The Model of Self Care Behaviour and the Relationship with Quality Of Life, Metabolic Control and Lipid Control of Type 2 Diabetes Mellitus Patients in Binjai City, Indonesia. *Open Access Maced J Med Sci*. 2018 25; 6(9): 1762–1767. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- McMichael TM, Currie DW, Clark S, Pogosjans S, Kay M, Schwartz NG, Lewis J, Baer A, Kawakami V, Lukoff MD, Ferro J. Epidemiology of Covid-19 in a long-term care facility in King County, Washington. *New England Journal of Medicine*. 2020; 382(21):2005-11. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Najafi SM, Vahedparast H, Hafezi S, Saghafi A, Farsi Z, Vahabi S. Effect of self-care education on quality of life in patients suffering from myocardial infarction. *JCCN*. 2008; 1(1): 35-9. [[View at publisher](#)] [[Google Scholar](#)]
- Pourghasemi HR, Pouyan S, Heidari B, Farajzadeh Z, Fallah Shamsi SR, Babaei S, et al. Spatial modeling, risk mapping, change detection, and outbreak trend analysis of coronavirus (COVID-19) in Iran (days between February 19 and June 14, 2020). *Int J Infect Dis*. 2020; 98:90-108. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Chakeri A, Jalali E, Ghadi MR, Mohamadi M. Evaluating the effect of nurse-led telephone follow-ups (tele-nursing) on the anxiety levels in people with coronavirus. *J Family Med Prim Care*. 2020; 9(10):5351-5354. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Xiao H, Zhang Y, Kong D, Li S, Yang N. The Effects of Social Support on Sleep Quality of Medical Staff Treating Patients with Coronavirus Disease 2019 (COVID-19) in January and February 2020 in China. *Med Sci Monit*. 2020; 26:e923549. [[View at publisher](#)] [[DOI](#)] [[Google Scholar](#)]
- Petrelli F, Cangelosi G, Scuri S, Pantanetti P, Lavorgna F, Faldetta F, et al. Diabetes and technology: A pilot study on the management of patients with insulin pumps during the COVID-19 pandemic. *Diabetes Res Clin Pract*. 2020; 169:108481. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Wijesooriya NR, Mishra V, Brand PLP, Rubin BK. COVID-19 and telehealth, education, and research adaptations. *Paediatr Respir Rev*. 2020; 35:38-42. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Wolthers TO, Wolthers OD. Telephone consultation as a substitute for face-to-face consultation during the COVID-19 pandemic. *Dan Med J*. 2020; 67(7):A04200300. [[View at publisher](#)] [[Google Scholar](#)]
- Ferretti S, Gatto A, Pansini V, Curatola A, Capossela L, Curre V, et al. Telephone consultation during Coronavirus outbreak in a Pediatric Emergency Department: methodological approach of a tertiary care center in a COVID-19 hospital setting. *Eur Rev Med Pharmacol Sci*. 2020; 24(21):11440-11444. [[View at publisher](#)] [[Google Scholar](#)]
- Golmohamadi F, Aghakhani N, Khadem vatan K, Aalinejad V. The effect of self-care education on the self-efficacy in myocardial infarction hospitalized patients in Seyed Al-Shohada educational and treatment center, URMIA, 2017. *Nurs Midwifery J*. 2018; 16 (6):412-422. [[View at publisher](#)] [[Google Scholar](#)]
- Magharei M, Jaafari S, Mansouri P, Safarpour A, Taghavi SA. Effects of Self-Management Education on Self-Efficacy and Quality of Life in Patients with Ulcerative Colitis: A Randomized Controlled Clinical Trial. *Int J Community Based Nurs Midwifery*. 2019; 7(1):32-42. [[View at publisher](#)] [[Google Scholar](#)]
- Mansouri P, Ghadami M, Najafi SS, Yektatalab S. The effect of Self-Management Training on Self-Efficacy of Cirrhotic Patients Referring to Transplantation Center of Nemazee Hospital: A Randomized Controlled Clinical Trial. *Int J Community Based Nurs Midwifery*. 2017; 5(3):256-263. [[View at publisher](#)] [[Google Scholar](#)]
- Jin Y, Yang H, Ji W, et al. Virology, Epidemiology, Pathogenesis, and Control of COVID-19. *Viruses*. 2020; 12(4):372. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Harrison PL, Hara PA, Pope JE, Young MC, Rula EY. The impact of postdischarge telephonic follow-up on hospital readmissions. *Popul Health Manag*. 2011; 14(1):27-32. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Kamrani F, Nikkhah S, Borhani F, Jalali M, Shahsavari S, Nirumand-Zandi K. The effect of patient education and nurse-led telephone follow-up (telenursing) on adherence to treatment in patients with acute coronary syndrome. *Iranian J of Cardiovascular Nursing*. 2015; 4(3): 16-24. [Persian] [[View at publisher](#)] [[Google Scholar](#)]
- Uslu E, Buldukoglu K. The Effect of Tele-Nursing Practices to the Schizophrenia Patient Care: A Systematic Review. *Turk Psikiyatri Dergisi*. 2016.1; 27(1). [[View at publisher](#)] [[Google Scholar](#)]
- Alyami M, Henning M, Krägeloh CU, Alyami H. Psychometric Evaluation of the Arabic Version of the Fear of COVID-19 Scale. *Int J Ment Health Addict*. 2020; 1-14. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]
- Ge H, Wang X, Yuan X, et al. The epidemiology and clinical information about COVID-19. *Eur J Clin Microbiol Infect Dis*. 2020; 39(6):1011-1019. [[View at publisher](#)] [[DOI](#)] [[PMID](#)] [[Google Scholar](#)]

Table 1. Comparison of demographic characteristics between the two study groups

Variables		Experimental (n=30)	Control (n=30)	P-value*
		N (%)	N (%)	
Gender	Female	14 (46.70)	13 (43.30)	0.15*
	Male	16 (53.30)	17 (56.70)	
Educational level	Less than high school diploma	4 (13.3)	6 (20)	0.75*
	High school diploma and higher	26 (86.7)	24 (80)	
Marital status	Single	3 (10)	3 (10)	0.05*
	Married	25 (83.3)	24 (80)	
	Widowed	2 (6.6)	3 (10)	
Comorbidities	Yes	23 (76.7)	24 (80)	0.08*
	No	7 (23.3)	6 (20)	
Occupation status	Employed	8 (26.6)	13 (43.3)	0.73*
	Self-employed	6 (20)	6 (20)	
	Farmer	1 (3.3)	1 (3.3)	
	Pensioner	5 (16.7)	3 (10)	
	Unemployed	2 (6.7)	2 (6.7)	
	Homemaker	8 (26.7)	5 (16.7)	
History of smoking	Yes	8 (26.7)	10 (33.3)	0.12*
	No	22 (73.3)	20 (66.7)	

* Chi-Square ** Independent t-test

Table 2. Comparison of demographic characteristics between the two study groups

Group		At time of discharge	Two weeks after discharge	Four weeks after discharge	P- value *		
		Mean±SD	Mean±SD	Mean±SD	Time	Time × group	Group
Self-efficacy	Experimental	47.86±6.84	62.23±5.24	78.46±3.38	P<0.001	P<0.001	P<0.001
	Control	46.13±5.66	45.11±4.21	44.03±5.36			
	t- test**	t=1.32, P=0.29	t=3.21, P=0.01	t=3.86, P=0.001			

* Repeated Measure ANOVA; ** Independent t-test, SD: standard deviation

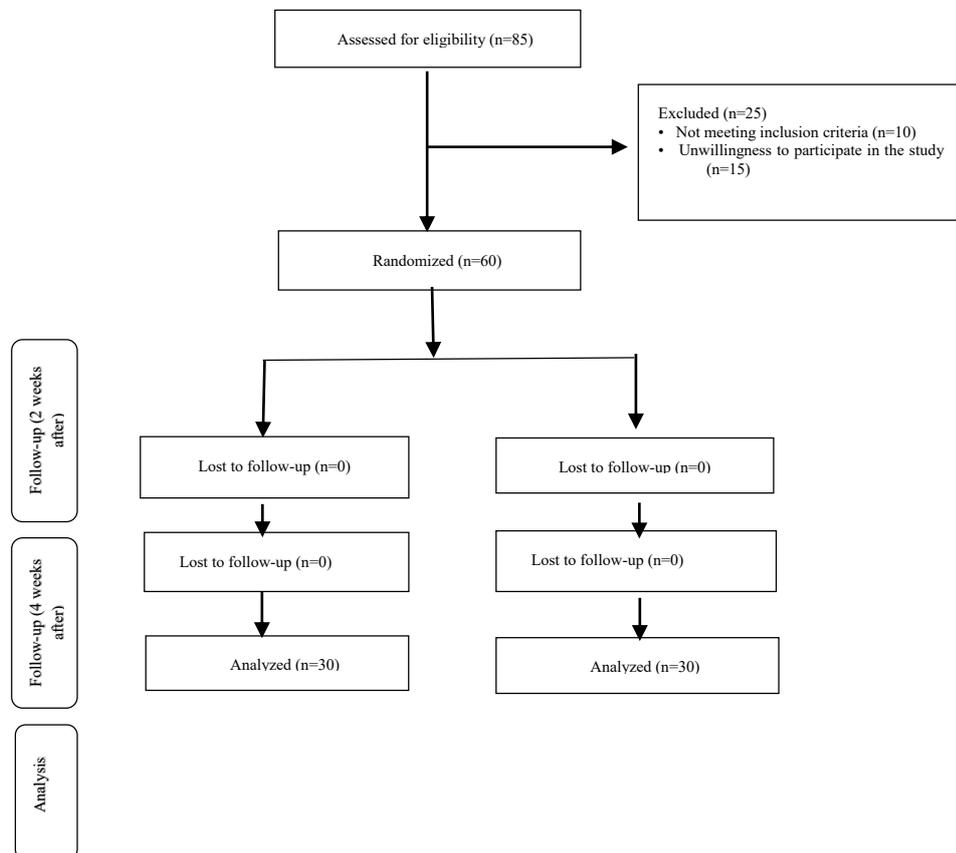


Figure 1. The CONSORT flow diagram

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