DOI: https://doi.org/10.54393/pbmj.v7i04.1078

PAKISTAN BIOMEDICAL JOURNAL
https://www.pakistanbmj.com/journal/index.php/pbmj/index
ISSN (P): 2709-2798, (E): 2709-278X
Volume 7, Issue 4 (April 2024)

Original Article

Gratitude, Self-Efficacy and Self-Care Behaviors among Patients with Cardiovascular Diseases

Sadia Khan[1], Nudra Malik[1*] and Raumish Masud Khan[2]

[1]Department of Applied Psychology, Lahore College for Women University, Lahore, Pakistan
[2]Department of Applied Psychology, Kinnaird College for Women, Lahore, Pakistan

ARTICLE INFO

Keywords:
Gratitude, Self-Care, Cardiovascular Diseases, Inclusive Healthcare, Self-Efficacy

How to Cite:
Khan, S., Malik, N., & Masud Khan, R. (2024). Gratitude, Self-Efficacy and Self-Care Behaviors among Patients with Cardiovascular Diseases: Gratitude, Self-Efficacy and Self-Care Behavior. Pakistan BioMedical Journal, 7(04). https://doi.org/10.54393/pbmj.v7i04.1078

***Corresponding Author:**
Nudra Malik
Department of Applied Psychology, Lahore College for Women University, Lahore, Pakistan
nudra.malik@lcwu.edu.pk

Received Date: 23rd March, 2024
Acceptance Date: 28th April, 2024
Published Date: 30th April, 2024

ABSTRACT

Cardiovascular disease (CVD) is a complex disease with persistent course of treatment having serious consequences for the patients' wellbeing. Positive psychological factors can play a significant role in improving CVD outcomes. **Objectives:** To better understand the intricate relationships among gratitude, self-efficacy, and self-care behaviors in individuals diagnosed with cardiovascular diseases. **Methods:** A quantitative cross-sectional research design was employed for the study. 160 patients with CVD aged between 40 to 60 years (M=49.79, SD=5.59) were selected for the study through purposive sampling. The Gratitude Questionnaire, Self-Care Behavior Scale-9 and General Self Efficacy Scale were used to measure gratitude, self-care behaviors, and self-efficacy respectively. **Results:** Results revealed a significant relationship between gratitude, self-care behaviors and self-efficacy. The findings also indicated self-efficacy to be a significant predictor of self-care behaviors. **Conclusions:** The study advocates for inclusive healthcare interventions that emphasize the role of gratitude and self-efficacy on self-care behaviors for enhancing wellbeing of CVD patients. It contributes to the understanding of the psychological dynamics within CVD patients emphasizing the role of interventions that promote holistic well-being.

INTRODUCTION

Cardiovascular diseases (CVD) are a leading cause of mortality all over the world affecting millions of individuals and imposing a significant burden on the healthcare systems. Approximately 17.9 million individuals suffered from CVDs in 2019 only and accounted for one-third of mortalities globally. However, more alarming is the fact that about three quarters of these deaths occurred in low- and middle-income countries [1]. This calls for a critical need to devise strategies aimed at reducing prevalence and/or adverse impact of CVDs on people. Pakistan also struggles with the rising numbers of CVD cases and lacks a policy to prevent and manage it effectively. A lot of research literature has examined the role of psychological conditions like depression, anxiety, stress and hostility on the onset, progression and outcomes of CVD [2]. However, more recently, an increasing number of studies are also focusing on the positive psychological traits that lead to better health and influence positive self-care behaviors in CVD patients [3]. These traits are observed to be associated with lower CVD risk factors and conditions. A heightened sense of wellbeing is also associated with reduced risk of secondary cardiovascular events and mortality rates [4]. Psychological traits that have positive impact on mental and physical health include optimism, life satisfaction, hope, gratitude and emotional vitality. Amongst these traits, gratitude interventions are the ones observed to be most effective in cardiology practice. Gratitude is a positive emotional response that is

DOI: https://doi.org/10.54393/pbmj.v7i04.1078

characterized by an appreciation of positive aspects of life and a feeling of thankfulness for the received life benefits [5]. Growing gratitude research has demonstrated a wide range of benefits for CVD including better immunological and cardiovascular health. It is also associated with greater self-care and reduced disease discomfort [6]. Understanding the profound impact of gratitude on cardiovascular health is pivotal, yet studies investigating this relationship remain limited. Early research has indicated that individuals who attributed their heart attack to external factors are more likely to experience subsequent incidents, emphasizing the psychological dimension of cardiovascular health [7]. Further comprehensive reviews have underscored gratitude's potential in improving biomarkers associated with cardiovascular diseases. These studies collectively suggest that integrating gratitude into the self-care practices of cardiovascular disease patients may hold significant promise in enhancing their overall well-being and health outcomes [8]. Self-efficacy is an individual's confidence in his/her capability to achieve certain actions or behaviors necessary to accomplish desired results in managing their cardiovascular health. In the realm of cardiovascular health, self-efficacy emerges as a pivotal determinant of self-care behaviors among patients grappling with heart-related conditions. A series of studies have highlighted the profound impact of self-efficacy on various facets of cardiovascular management [9]. Research has indicated that higher levels of gratitude in individuals influence their self-efficacy and consequently reinforces treatment regimen specifically medication adherence in asymptomatic heart failure patients [10]. Similarly, studies emphasize that increased self-efficacy and understanding of one's condition significantly increases treatment compliance in patients with CVD. Literature has strongly highlighted the essential role of self-efficacy in practicing adherence to recommended treatment regimens and overall disease management in chronic diseases. All these findings demonstrate self-efficacy as an indispensable factor in shaping self-care behaviors and serve as a critical tool in enhancing the wellbeing and health outcomes in CVD patients [11]. Such valuable insights serve as a basis for holistic approach to cardiovascular care that includes not only medical interventions but also reinforcing self-efficacy to empower patients on their journey to better heart health. Self-care behaviors are a range of deliberate and proactive behaviors that people undertake for effective management of their condition and enhance their wellbeing. They include monitoring of vital functions, regular exercise, prescribed medication adherence, dietary modifications and timely interventions and medical care when needed [12]. As per recent empirical evidence, adherence to prescribed treatment regimen in CVD patients is largely influenced by perceived control, self-care confidence and disease knowledge in shaping adherence to recommended practices [13]. Strengthening of self-care behaviors for CVD patients is required for enhancing their quality of life and treatment outcomes [14]. Adherence to treatment regimen and self-care not only helps in stabilization of their condition but also lowers down the probability of repeated hospitalizations and complications. Moreover, self-care practices also empower the individuals in taking a proactive role in their health and adopting self-control in managing their disease. This underscores the need to effectively identify, promote and support self-care behaviors and make them a part of the care plan for CVD patients.

The current study aimed to examine the relationship between gratitude, self-efficacy and self-care behaviors in individuals having CVD. Furthermore, the study endeavored to uncover the predictive role of both self-efficacy and gratitude in influencing self-care behaviors within this context.

The current study aimed to examine the relationship between gratitude, self-efficacy and self-care behaviors in individuals having CVD. Furthermore, the study endeavored to uncover the predictive role of both self-efficacy and gratitude in influencing self-care behaviors within this context.

METHODS

The current study adopted a cross-sectional research design. Participants were selected based on specific variables of interest. The sample selection followed the non-probability purposive sampling approach. The total number of participants included in the study were 160 with age range of 40 to 60 years (M=49.79, SD=5.59). The sample size was determined by using the G power formula. The participants were recruited from the OPD of the hospital settings. The participants were taken from the District Head Quarter Hospital, Mianwali, Pakistan. The sample was drawn from the population of CVD patients who were having the disease for at least 6 months or above. The participants who were diagnosed with any psychological illness or refused to participate in the research or did not meet the inclusion criteria were excluded from the sample. After seeking consent, the participants were asked to fill the demographic sheet in which demographical information was required from the participants for instance age, gender, education, marital status, socioeconomic class, occupation, duration of disease and type of disease. The Gratitude Questionnaire Six Item form is a short self-report questionnaire which is used to assess the level of gratitude that people experience in their routine life activities. Individuals are asked to answer each

DOI: https://doi.org/10.54393/pbmj.v7i04.1078

of the six statements on a 7-point Likert scale ranging from (1= "strongly agree", 7= "strongly disagree"). To ensure appropriate responses, two of the six items are reversely scored. It has internal reliability between .82 and .87 [15]. The European Heart Failure Self-Care Behavior Scale (EHFScBs) consisting of nine items is a self-report standardized scale that assesses self-care behavior of patients with CVDs. The participants mark their response on a five point Likert scale from totally agree to totally disagree. Initially the EHFScBS consisted of 19-item which are now reduced to 12-item and 9-item version. It has good internal consistency reliability of .77 [16]. The General self-efficacy scale is a self-administered scale which is designed to assess perceived self-efficacy in the individuals while facing challenging daily life problems and stressful life events. It consists of 10-items on which the responses are made on a 4-point scale. It has the reliability ranging from .76 to .90 [17]. The study adhered to ethical standards throughout the execution. All participants provided informed consent, and we obtained necessary permissions to use the assessment tools. The study received ethical approval from the Convener, Research Ethics, Institutional Review Board of Lahore College for Women University vide letter no. ORIC/LCWU/19. The hospital authorities also granted approval for data collection on their premises. Before administering the scales, participants received a clear explanation of the study's purpose and nature. We assured them of complete confidentiality and explained that the acquired information would only be used for research purposes and informed consent was obtained. These steps were taken to maintain the ethical guidelines and integrity of the study and protect the rights of the participants. The data were analyzed using SPSS version 26. Frequencies and percentages were calculated for socio demographic and clinical characteristics of sample. Next, internal consistency reliability of the measures used in the study was done. Bivariate correlation was applied to examine the relationship among study variables and last, multiple linear regression was run to determine the predictive role of gratitude and self-efficacy on self-care behaviors.

RESULTS

Table 1 consists of details of demographic characteristics of the participants. The sample consisted of 160 cardiovascular patients including males (N = 79) and females (N = 81). The mean age of patients was 49.79. All of the participants were married (100%). Maximum number of participants' education level was primary (32.5%), and then matriculation (18.8%), graduate (18.8%), intermediate (16.3%), and middle (13.8%). Most of the participants belongs to middle class (136%), lower class (10%) and upper class (5%). 36.9% participants were working, 45.6% non-working, and 17.5% self-employed. Most common type of cardiovascular disease among the patients was heart failure (33.1%), then ischemic heart disease (24.4%), hypertension (19.4%), other (14.4%), angina (8.8%). Almost no participant come up with stroke. The duration of disease of most of the patients was more than one year (73.1%), and 26.9% had the duration from 6 months to 1 year.

Table 1: Demographic Characteristics of Participants (N=160)

Variables	F (%)
Age	
Mean ± SD	49.79 ± 5.59
Gender	
Male	79 (49.4)
Female	81 (50.6)
Education Level	
Primary	52 (32.5)
Middle	22 (13.8)
Matriculation	30 (18.8)
Intermediate	26 (16.3)
Graduation	30 (18.8)
Marital Status	
Married	160 (100)
Occupation	
Working	87 (54.4)
Not Working	73 (45.6)
Type of Disease	
Stroke	14 (8.8)
Angina	53 (33.1)
Heart Failure	31 (19.4)
Hypertension	39 (24.4)
Ischemic Heart Disease	23 (14.4)
Duration of Disease	
6 Months to 1 Year	43 (26.9)
More than One Year	117 (73.1)

Note: F = frequency, % = Percentage, SD = Standard Deviation

Table 2 gives details of the scales used in the study including number of items, mean, standard deviation and Cronbach's Alpha values of the study scales. All the scales were observed to have good reliability.

Table 2: Descriptive Statistics and Cronbach's Alpha of Study Scales (N=160)

Scales	N	Mean ± SD	α
Gratitude Questionnaire	6	33.54 ± 5.92	.85
Self-care Behaviors Scale	9	28.67 ± 4.25	.63
General Self-Efficacy Scale	10	30.33 ± 5.99	.87

Note: N = No. of items, α = Cronbach's alpha

It was hypothesized that there will be a significant relationship among self-efficacy, gratitude and self-care behaviors in individuals with cardiovascular disease. Results in table 3 show that there was a significant positive correlation between gratitude and self-efficacy (r=.69,

DOI: https://doi.org/10.54393/pbmj.v7i04.1078

p<.01), and self-care behaviors (r=.49, p<.01), which meant that the higher the gratitude among cardiovascular patients, the higher will be the self-efficacy and self-care behaviors among them. Moreover, there was a significant positive correlation between self-efficacy and self-care behaviors (r=.67, p<.01), which indicated that the higher the self-efficacy among cardiovascular patients, the more will they adhere to self-care behaviors. Furthermore, the result had shown a significant positive correlation between education and self-care behaviors among cardiovascular patients (r=.20, p<.05), which reflected that as the education increases, self-care behaviors also increases. It had also been shown that there was significant negative correlation between the duration of disease and self-care behaviors (r=-.17, p<.05), which indicated that as the duration of disease increases, the patients becomes less concerned about their self-care behaviors.

Table 3: Correlations among Study Variables (N=160)

Measures	Mean ± SD	1	2	3	4	5	6
Gratitude	33.54 ± 5.92	-	-	-	-	-	-
Self-Efficacy	30.33± 5.99	.69**	-	-	-	-	-
Self-Care Behaviors	28.67 ± 4.25	.49**	.67**	-	-	-	-
Age	49.79 ± 5.59	.09	-.04	.01	-	-	-
Education	2.75 ± 1.52	.07	.12	.20*	-.04	-	-
Duration of Disease	1.73 ± .44	-.17*	-.05	-.05	-.09	-.05	-

Note: SD = Standard Deviation
**p < .01, *p<.05

It was hypothesized that self-efficacy and gratitude will predict self-care behaviors in the patients with cardiovascular disease. Results in table 4 show the impact of gratitude, self-efficacy, age education, occupation and duration of disease on self-care behaviors among cardiovascular patients. The R2 value of .49 revealed that the predictor variables explained 49% variance in the outcome variable with F(2877.44) = 21.06, p<.001. The findings revealed self-efficacy as a significant positive predictor of self-care behaviors (β=.65, p<.001) whereas gratitude had no significant effect on self-care behaviors (β=.04, p>.05). It indicated that increase in self-efficacy will increase the self-care behaviors in cardiovascular patients. Moreover, education was seen to be the significant positive predictor of self-care behaviors (β=.52, p<.01), whereas age (β=, p>.05), occupation (β=, p>.05) and duration of disease (β=, p>.05) did not have any significant effect on self-care behaviors.

Table 4: Linear Regression on Gratitude and Self-Efficacy as Predictors of Self-Care Behaviors (N=160)

Measures	B	SE	β	R^2	F
Constant	-	1.49	9.84***	.49	21.06
Gratitude	.03	.06	.02	-	-
Self-Efficacy	.65	.06	.46***	-	-
Age	.04	.04	.03	-	-
Education	.19	.18	.52**	-	-
Occupation	.17	.36	.80	-	-
Duration of Disease	.001	.57	.01	-	-

Note: B = Unstandardized Beta, SE = Standard Error, β = Standardized Beta
***p < .001, **p<.01

DISCUSSION

The study aimed at finding the relationships between self-efficacy, gratitude, and self-care behaviors in individuals diagnosed with cardiovascular conditions. The study's findings revealed significant relationships among self-care behaviors, gratitude and self-efficacy. This finding is in line with similar studies and showed a relationship between gratitude and self-care behaviors like treatment adherence through self-efficacy [18]. Additionally, self-efficacy had a stronger relationship to self-care behaviors as compared to gratitude, emphasizing its importance in motivating individuals to engage in proactive health practices, a principle well-established in existing research [19]. Notably, self-efficacy also emerged as a significant predictor of self-care behaviors, underscoring its pivotal role in motivating proactive health practices. However, the relationship of gratitude with self-care behaviors was insignificant. This finding is inconsistent with most of the recent literature which have indicated a significant influence of gratitude on self-care in CVD [20]. However, there have been studies which didn't find any relationship between the two emphasizing the need for further exploration into potential moderating factors [21]. Our results indicate that perceived efficacy plays a significant role in shaping self-care behaviors related to CVD management. Specifically, it was found that individuals who had higher levels of efficacy beliefs engaged more in proactive self-care behaviors like dietary adjustments, medicine adherence, inclusion of physical activity in daily routine, and regular checking of vital functions [22]. This finding strengthens the previous literature that one's belief in one's ability to manage their disease efficiently is a significant factor of self-care behaviors in CVD. Self-efficacy beliefs served as a stronger predictor of behaviors related to self-care than gratitude or demographic variables [23]. This emphasizes the significance of psychological factors in influencing health-related behaviors and outcomes among individuals with CVD. Education was also found to be a significant predictor of self-care behaviors in CVD patients in our study. This is consistent with previous studies and indicate that higher levels of education are more likely to make the patients adopt better lifestyle and indulge in proactive behaviors like taking healthy diet, adhering to medication and other treatment regimen. It suggests that education has its

DOI: https://doi.org/10.54393/pbmj.v7i04.1078

significance in promoting health literacy, and facilitate informed decisions about positive health outcomes [24]. The results highlight the need for addressing self-efficacy beliefs for promotion of self-care behaviors among patients with CVD. Strategies like skills training and education that improve individuals' confidence in their ability to manage their condition should be incorporated by healthcare professionals. Our study also stresses the need to tailor interventions that could address barriers to self-care and facilitate positive health outcomes for patients with CVD. Empowering the individuals to manage their condition effectively would lead to reduced hospitalizations and utilization of healthcare services.

CONCLUSIONS

This study has advanced our understanding of the relationships between self-efficacy, gratitude and self-care behaviors in individuals with cardiovascular conditions. It indicated a significant relation among these variables and revealed self-efficacy to be a significant predictor of self-care behaviors in CVD. By shedding light on these intricate dynamics, the study contributes to the effectiveness of positive attributes and suggests use of more positive psychology interventions in this population for enhancing their overall health and well-being.

Authors Contribution

Conceptualization: SK, NM
Methodology: SK, NM, RMK
Formal analysis: NM, RMK
Writing-review and editing: SK, NM, RMK

All authors have read and agreed to the published version of the manuscript.

Conflicts of Interest

The authors declare no conflict of interest.

Source of Funding

The author received no financial support for the research, authorship and/or publication of this article.

REFERENCES

[1] World Health Organization. Health topics: Cardiovascular diseases. Fact Sheet. 2013 [Last cited: 25th Mar 2024]. Available at: http://www.who.int/cardiovascular_diseases/en/.

[2] Kubzansky LD, Huffman JC, Boehm JK, Hernandez R, Kim ES, Koga HK *et al.* Positive psychological well-being and cardiovascular disease: JACC health promotion series. Journal of the American College of Cardiology. 2018 Sep; 72(12): 1382-96. doi: 10.1016/j.jacc.2018.07.042.

[3] DuBois CM, Beach SR, Kashdan TB, Nyer MB, Park ER, Celano CM *et al.* Positive psychological attributes and cardiac outcomes: associations, mechanisms, and interventions. Psychosomatics. 2012 Jul; 53(4): 303-18. doi: 10.1016/j.psym.2012.04.004.

[4] DuBois CM, Lopez OV, Beale EE, Healy BC, Boehm JK, Huffman JC. Relationships between positive psychological constructs and health outcomes in patients with cardiovascular disease: A systematic review. International Journal of Cardiology. 2015 Sep; 195: 265-80. doi: 10.1016/j.ijcard.2015.05.121.

[5] Emmons RA and McCullough ME. Counting blessings versus burdens: an experimental investigation of gratitude and subjective well-being in daily life. Journal of Personality and Social Psychology. 2003 Feb; 84(2): 377. doi: 10.1037//0022-3514.84.2.377.

[6] Wang X and Song C. The impact of gratitude interventions on patients with cardiovascular disease: a systematic review. Frontiers in Psychology. 2023 Sep; 14: 1243598. doi: 10.3389/fpsyg.2023.1243598.

[7] Tennen H, Urrows S, Higgins P. Person and contextual features of daily stress reactivity: Individual differences in relations of undesirable daily events with mood disturbance and chronic pain intensity. Journal of Personality and Social Psychology. 1994 Feb; 66(2): 329-40. doi: 10.1037//0022-3514.66.2.329.

[8] Cousin L, Redwine L, Bricker C, Kip K, Buck H. Effect of gratitude on cardiovascular health outcomes: a state-of-the-science review. The Journal of Positive Psychology. 2021 May; 16(3): 348-55. doi: 10.1080/17439760.2020.1716054.

[9] Hatef M, Sharif Nia H, Mousavinasab N, Esmaeili R, Shafipour V. Self-efficacy and prediction of associated factors in patients with chronic diseases. Journal of Mazandaran University of Medical Sciences. 2018 Jul; 28(162): 86-94.

[10] Gallagher S, Solano AC, Liporace MF. State, but not trait gratitude is associated with cardiovascular responses to acute psychological stress. Physiology & Behavior. 2020 Jul; 221: 112896. doi: 10.1016/j.physbeh.2020.112896.

[11] Mobini S, Allahbakhshian A, Shabanloei R, Sarbakhsh P. Illness perception, self-efficacy, and medication adherence in patients with coronary artery disease: A path analysis of conceptual model. SAGE Open Nursing. 2023 Jun; 9: 23779608231171772. doi: 10.1177/23779608231171772.

[12] Riegel B, Moser DK, Buck HG, Dickson VV, Dunbar SB, Lee CS *et al.* Self-care for the prevention and management of cardiovascular disease and stroke: A scientific statement for healthcare professionals from the American Heart Association. Journal of the American Heart Association. 2017 Aug; 6(9): e006997.

DOI: https://doi.org/10.54393/pbmj.v7i04.1078

doi: 10.1161/JAHA.117.006997.

[13] Heo S, Moser DK, Lennie TA, Riegel B, Chung ML. Gender differences in and factors related to self-care behaviors: a cross-sectional, correlational study of patients with heart failure. International Journal of Nursing Studies. 2008 Dec; 45(12): 1807-15. doi: 10.1016/j.ijnurstu.2008.05.008.

[14] Bagheri-Saweh MI, Lotfi A, Salawati Ghasemi S. Self-care behaviors and related factors in chronic heart failure patients. International Journal of Biomedicine and Public Health. 2018 Jan; 1(1): 42-7. doi: 10.22631/Ijbmph.2018.56100.

[15] McCullough ME, Emmons RA, Tsang JA. The grateful disposition: a conceptual and empirical topography. Journal of Personality and Social Psychology. 2002 Jan; 82(1): 112. doi: 10.1037//0022-3514.82.1.112.

[16] Jaarsma T, Strömberg A, Mårtensson J, Dracup K. Development and testing of the European heart failure self-care behaviour scale. European Journal of Heart Failure. 2003 Jun; 5(3): 363-70. doi: 10.1016/S1388-9842(02)00253-2.

[17] Schwarzer R and Jerusalem M. Generalized self-efficacy scale. In: Weinman J, Wright S, Johnston M. Measures in health psychology: A user's portfolio. Causal and control beliefs. Windsor, UK: NFER-NELSON. 1995: 35-7.

[18] Cousin L, Buck H, Benitez B, Mills P, Redwine L. A structural equation model of gratitude, self-efficacy, and medication adherence in patients with stage B heart failure. Journal of Cardiovascular Nursing. 2020 Nov; 35(6): E18-24. doi: 10.1097/JCN.0000000000000721.

[19] Peyman N, Shahedi F, Abdollahi M, Doosti H, Zadehahmad Z. Impact of self-efficacy strategies education on self-care behaviors among heart failure patients. The Journal of Tehran University Heart Center. 2020 Jan; 15(1): 6. doi: 10.18502/jthc.v15i1.3332.

[20] Celano CM, Beale EE, Beach SR, Belcher AM, Suarez L, Motiwala SR *et al.* Associations between psychological constructs and cardiac biomarkers after acute coronary syndrome. Psychosomatic Medicine. 2017 Apr; 79(3): 318-26. doi: 10.1097/PSY.0000000000000404.

[21] Moieni M, Irwin MR, Haltom KE, Jevtic I, Meyer ML, Breen EC *et al.* Exploring the role of gratitude and support-giving on inflammatory outcomes. Emotion. 2019 Sep; 19(6): 939. doi: 10.1037/emo0000472.

[22] Nuraeni A, Sugiharto F, Anna A, Sari E, Mirwanti R, Trisyani Y *et al.* Self-efficacy in self-care and its related factors among patients with coronary heart disease in Indonesia: a rasch analysis. Vascular Health and Risk Management. 2023 Dec: 583-93. doi: 10.2147/VHRM.S427488.

[23] Sugiharto F, Nuraeni A, Trisyani Y, Putri AM, Armansyah NA, Zamroni AH. A scoping review of predictors associated with self-efficacy among patients with coronary heart disease. Vascular Health and Risk Management. 2023 Dec: 719-31. doi: 10.2147/VHRM.S435288.

[24] González B, Lupón J, Domingo MD, Cano L, Cabanes R, De Antonio M *et al.* Educational level and self-care behaviour in patients with heart failure before and after nurse educational intervention. European Journal of Cardiovascular Nursing. 2014 Oct; 13(5): 459-65. doi: 10.1177/1474515113510810.