IOSR Journal of Nursing and Health Science (IOSR-JNHS)
e- ISSN: 2320–1959.p- ISSN: 2320–1940 Volume 7, Issue 2 Ver. VII (Mar-Apr .2018), PP 40-47
www.iosrjournals.org

Reliability And Validity of The Arabic Version of Cardiac Patients' Learning Needs Inventory (AR-CPLNI); Among Acute Myocardial Infarction Patients

Falastine R. Hamdan
Assistant professor / Head of Applied Science Department of Applied Science, Al- Balqa Applied University, Salt, 19117,Jordan
Corresponding Author: Dr. Falastine R. Hamdan

Abstract
Background: *Unique and effective approaches for patient knowledge are required because they will reduce the inpatient hospital stay at hospital and decrease the complications post Acute Myocardial infarction(AMI). Using reliable and valid tools to define cardiac patients' learning needs will help people who care providers in determining relationship programs.*
Aim: *This study aimed at conducting a cross cultural adaptation of the needs for Cardiac patients Learning Needs (CPLN),also to validate it and calculate its reliability.*
Methodology: *The study followed a non-experimental and an explorative design. Perceptions of patients were calculated at a specific point in time. Validity of AR-CPLNI and its reliability were examined through appropriate psychometric tests. Logical validity was adopted as the validity of the tool. Coefficient alpha and item-total correlation were applied for determining internal consistency of AR-CPLNI. Repeatability coefficient of AR-CPLNI- was calculated by determining the correlation coefficient between the two occasions of testing within a period of 48hours span through the technique of Pearson Correlation.*
Results: *The majority of patients (154, 76%) were males while (48, 24%), were females. Most (128, 64.0%), of patients were (>=50 years) old. Logical validity rendered a value of 0.96. The overall Coefficient alpha ranged between0.71to 0.93, with a mean of 0.96for thesubscales of AR- CPLNI inventory. Pearson total correlations for the items of the inventory was positive and statistically significant, and ranged between 0.87to 0.97, with a mean of 0.92,for the subscales of the inventory.*
Conclusion: *The edition of the AR-CPLNI adapted used in Jordan in Arabic language had the same linguistic, conceptual, and semantic characteristics of the initial version and showing sufficient reliability and consistency in determining the needs of learning for diagnosed Jordanian patients with AMI.*
Keywords: *Learning needs, acute myocardial infarction, CPLNI, Validity, reliability*

Date of Submission: 26-03-2018 Date of acceptance: 12-04-2018

I. Introduction

Cardiovascular disease (CVD)is considered among the chief reasons of death worldwide[1], and it is conjectured that it will remain as the main cause of disease in the world by 2020[2]. CVD is responsible for 31% of Fatalities in the Eastern areas of the Mediterranean Region (EMR). In Jordan,a corresponding rate of (35%) is reported [2].In comparison with other cardiovascular disorders, Acute myocardial infarction (AMI) is the main disease which causes the highest percentage of fatalities among both female and male individuals i n the USA[3]. The same applies to Jordan for both genders[2].

Advanced medical technology incorporated with communities need for healthy life styles prolonged individuals lifetime were accompanied by the challenge of maintaining a qualitative lifetime among those suffering from chronic cardiac diseases. This fact justifies the necessity of enhancing the awareness and knowledge of patients and their families through appropriate health education modules [4]. The most important and vital aspect in patients' education is determining patients' learning needs [5]. There is a gap in the need for learning between the present level of development and the specified competencies by the learner[6].Primarily nurses are encountered mostly with patients post having their diseases. Consequently, they have an important role in the actions relating to health education[1]. The prepared educational modules by nurses must take in considerations patients points of view of what they want to learn about, otherwise the process of learning would be failed[7]. Patients should participate in the development of educational materials and models so they can identify their learning needs about their condition.[7,8]Although evidence exist concerning the necessity of determining the learning needs of patients, research about the appropriateness of specific tools are lacking .

Unique and effective approaches for education of patients are required, as they will decrease the inpatient stay at hospital, and alleviate the complications post Acute Myocardial infarction(AM)I[9]. Applying validated tools with sufficient reliability to determine the needs of cardiac patients' in terms of knowledge will help healthcare providers in designing suitable educational programs. The lack of Arabic tools that are used to measure cardiac patients' learning needs necessitated conducting this study to validate an Arabic version of Cardiac Patient Learning Needs (AR-CPLNI) among AMI patients. So, the study aimed to develop an Arabic valid version of the (CPLN) inventory with sufficient reliability among Jordanian AMI patients.

II. Methodology

The study followed the non-experimental and an explorative design. The data were collected cross-sectionally, through the evaluation of the perceptions of patients' perceptions a specific point in time, for establishing the validity and reliability of AR-CPLNI, psychometric tests were employed.

Sample

A Convenient sample was used in this study consisting of of male and female patients diagnosed with AMI after 48- 72 hours for allowing to Coronary Care Unit (CCU) between the 1st of October 2014 until the end of March 2015. 20-70 years old patients were included in the study, hemodynamically stable; diagnosed and confirmed AMII; able to communicate in Arabic; mentally competent; admitted through the emergency room (ER), and after pain was controlled, admission procedures are completed and cardiac markers are clear. For the test-retest application, an instrument of a sample consist of 30 patients was enough[9,10,11]. The sample of the study included 200 AMI patients.

Data Collection Instrument

Cardiac Patients Learning Needs Inventory (CPLNI) was developed by Gerard (1984), and was employed in various settings for the purposes of measuring the perceptions of patients and healthcare providers in terms of the significance of needs for awareness and learning[10].The inventory contains 43 items divided into eight subsections. All the items of the tool have a similar beginning phrase. The items are answered on a Likert scale, based on their perceived importance from the perspective of respondents. A Cronbach' alpha of 0.91[10] was calculated for the tool as a whole, with a limited variation (0.77-0.85) among the eight subsections. Gerard & Peterson (1984)provided evidence concerning the validation of the tool through a review of the experimental literature related to the tool. The tool was assessed by lowest scores of items were less importance for the patient, while high scores were more important[10]. The Arabic adaptation of CPLNI was piloted by the researchers at Coronary Care Unit (CCU) via face-to-face interview. For the purposes of calculating repeatability coefficient, the interviews with an interval of 48 hr were adequate as it allowed the patients to be unable to recollect the answers provided during the first testing occasion, and decreased the possible impacts of lengthy interval.[11]

Statistical Analysis

Frequencies and percentages were the means of demonstrating the data related to the socio-demographics**.** For making sure of the opinions of experts "Content Validity Index" was used. For analyzing the instrument's reliability and validity, repeatability coefficient and Coefficient alpha analysis and item-total correlation analysis were measured through the Pearson correlation technique. The SPSS version 17 was used in the analyze data with a level of significance $p<0.05$.

Procedure of Content Validity

Cross-cultural adaptation for procedure of content validity were followed by stages prescribed by the literature as: forward translation, synthesis of target text versions, retranslation into source language, panel validation by experts, validating the tool semantically and piloting[12]**.** Original English version of CPLNI-Arabic translation, was done independently by the principal author and two professors specialist in English, who were acquainted with the study's purposes and the constructs of the tool. The principal author and the English specialists compared and reviewed the professors specialist in English translations in order to obtain a consensus version. Two English native-speakers, who were proficient in the two languages and cultures, retranslated the tool into its source language[13.14]. The final version was adopted after comparing both translations to the original English version of the tool.

All versions of the tool were evaluated and revised by a panel of two expert professors of nursing at Jordan University of Science and Technology (JUST) and two cardiologists at the same university whom were principal investigator and fluent in English in order to determine its content validity. To assess sameness of the original and the translated version, the experts reviewed and compared the original version of the tool, the Arabic translated versions, their retranslations into the source language and provided their relevant comments.

The adopted version was read and discussed. Changes were made accordingly. The expert adopted the first version of the instrument to be used in Arabic.

Piloting and the validating of the tool semantically were carried out for the selected version of the tool.[13,14]Toensure the comprehensibility of thee tool and the necessity of additional changes to be made, expert opinions were tapped. Concerning the comprehensibility of the tool, Expert opinions and recommendations were consulted, and they supported the linguistic and content validity. Piloting was carried out through a sample of 15 patients who fulfill the criteria adopted in sampling for the present study. Jordanian patients did not suggest any modifications of the instrument. No additions or changes were recommended to the tool through the participants of piloting. Upon the conclusion of the process of cross sectional adaptation, content and face validation were carried out, and consequently the reliability of the tool was explored. A total number of seven nurses participated take part in the process of validation, of which four were specialist in cardiology, and three in CPLNI. These experts stated that the tool's items version were formulated comprehensibly, precisely formulated and comprehensively expressed the needs for learning among AMI patients.

III. Reliability

All the items of the subsections of the tool and their congruity measuring the problem show the internal consistency of realibility.[15] In AR-CPLNI's reliability analysis, repeatability and internal consistency evaluation were carried out. a number of 30 patients who participated in the sample was believed to be suffecient[1]. The first interview was carried after 24-72 hours after admission for 200 consecutive patients admitted with AMI, while the interview for the second time happened after two days before discharge. The time interval was necessary as it made the patients unable to recollect their original answers of the first interview, and as it reduced the impacts of a lengthy interval on the knowledge of the participating patients[11]. To evaluate the repeatability coefficient of the tool, the correspondence between the two cases of the test application was analyzed through Pearson Correlation. In order to measure the internal consistency of the tool, the item-total correlation and Coefficient alpha analyses were carried out.

IV. Results

The sample consisted of 200AMI patients. The majority (154, 76%) were males while(48, 24%), were females. Most (128, 64.0%), of patients were (>=50 years)old and were married (191, 95.5%). Educational level results shows that only (7,3.5%) were unable to read or write in Arabic. More than half (129, 64.5%) of patients' income was (<500 JD). Out of 200 patients (121) live in city by a percentage of (60.5%). More than half (116,58%) were employed. Regarding the past medical diagnosis ;more than half of patients were diagnosed with Hypertension (107,53.5%). Nearly two thirds(122, 61.0%)of patients not diagnosed with Diabetes Mellitus. Half(100,50%), of patients had history of hyperlipedemia. Finally, only (70,35%) had previous history of Coronary Heart Diseases (CHD) as shown in the table below.

Table (1): Socio-demographic and Clinical Findings

Variable		Patients (n=200)	
		Frequency	Percent
Gender	Male	152	76.0
	Female	48	24.0
Age	<50 year	72	36.0
	>=50 year	128	64.0
Marital Status	Married	191	95.5
	Single	4	2.0
	Divorced	3	1.5
	Widowed	2	1.0
Educational Level	Graduate school	14	7.0
	Bachelor	53	26.5
	Diploma	30	15.0
	High School	50	25.0
	Less than High School	46	23.0
	Unable to read or write	7	3.5
Family Income/ month	<500	129	64.5
	>=500	71	35.5
Area of Living	City	121	60.5
	Village	79	39.5
Employment	Yes	116	58.0
	No	84	42.0
Hypertension	Yes	107	53.5
	No	93	46.5
Diabetes	Yes	78	39.0
	No	122	61.0
Hyperlipedemia	Yes	100	50.0
	No	100	50.0
Coronary Heart Disease (CHD)	Yes	70	35.0
	No	130	65.0

Table (2) shows the distribution of the AR-CPLNI subsections. Each one is rated on a scale with points ranging between 0- 5. In the initial evaluation, the subsection with the least mean was "anatomy and physiology" (3.27); the subsections having highest means were "medication information" (4.43), "risk factors" (4.26), "symptom management" (3.04), "dietary information" (4.04) subscales. Following the acquittal, the subsections with the lowest means also was for "anatomy and physiology" (3.51), while the highest was for "Risk factors" (3.95), "dietary information" (3.88), "medication information" (3.86),"physiological factors" (3.86) subsections**.**

Table (2): Comparisons of original Subsections' Scores of the tool, three Modified versionsand A-CPLNI

Item	Gerard and Peterson (1984) Original CPLNI		Karlik and Yarcheski (1987) Modified CPLNI-1		Chan (1990) Modified CPLNI-2		Timmins and kaliszer (2003) Modified CPLNI-3	Hamdan & Almomani (2015) AR-CPLNI	
	CCU (n:16)	AD (n:15)	CCU (n:15)	AD (n:15)	Service (n=30)	AD (n=26)	Service (n:27)	Service (n=200)	AD (n=30)
Introduction to the CCU	4.30(4)*	4.46(2)*	4.13(4)*	3.93(4)*	-	-	-	3.83(4)*	3.65(5)*
Anatomy and Physiology	4.22(6)*	4.42(3)*	4.23(2)*	4.03(2)*	3.45(2)*	3.96(4)*	4.44(4)*	3.27(8)*	3.51(8)*
Psychological Factors	4.39(2)*	4.33(5)*	3.98(8)*	3.78(7)*	3.32(5)*	3.85(6)*	4.13(7)*	3.43(7)*	3.86(3)*
Risk Factors	(RF)+ 4.53(1)*	(RF)+ 4.47(	(RF)+ 4.38(1)*	(RF)+ 4.18	3.59(1)*	4.17(1)*	4.52(3)*	4.26(2)*	3.95(1)*

		1)*		(1)*					
Medication Information	4.39(2)*	4.37(4)*	4.20(3)*	4.18(1)*	3.35(4)*	4.09(2)*	4.53(2)*	4.43(1)*	3.86(3)*
Diet Information	4.17(7)*	4.01(8)*	4.07(7)*	4.01(3)*	3.15(7)*	4.02(3)*	4.35(6)*	4.04(3)*	3.88(2)*
Physical Activity	4.34(3)*	4.17(7)*	4.08(8)*	3.89(5)*	3.17(6)*	3.90(5)*	3.71(8)*	3.78(5)*	3.60(6)*
	-	-	-	-	-	-	4.67(1)*	-	
	4.32(5)*	4.24(6)*	4.11(5)*	3.83(6)*	3.41(3)	3.82(7)*	4.13(5)*	-	
Other Pertinent Information	-	-	-	-	-	-	-	3.69(6)*	3.58(7)*

***The order of subscale importance. AD: After discharge**

Validity

Results show the internal consistency and the descriptive statistics of the CPLNI in the two testing times, with a contrastive assessment of the mean scores of both testing. No significant differences were found in the mean scores between testing occasions in any subsection, which emphasises the stability of the tool. The Corrected Item-Total Correlation of the items of the tool with its correspondent subsection and with the instrument as a whole was calculated, and the values must not be less than(0.30)**.** Based on the table scores all values are more than (0.30), which indicates that paragraphs measures the domains to which they relate (Table 3).

Table (3) Corrected Item-Total Correlation Between the Item and its subsection and Between the Item and the tool as awhole

Domain	**Item**	**Corrected Item-Total Correlation between**		**mean±SD (median) (n=200)**	**mean±SD (median) (n=30)**
		Item and Domain	**Item and Total**		
Introduction to CCU	Why I am in the coronary care unit?	0.465	0.330	4.33±.78(4)	4.26±1.33(4)
	What tests are done to determine if I have had a heart	0.65	0.56	4.43±.79(5)	4.38±1.18(5)
	Why I have an intravenous line I.V؟	0.74	0.53	3.63±1.14(4)	3.62±1.104(4)
	Why my activity is limited?	0.75	0.55	3.60±1.17(4)	3.61±1.22(4)
	What are the usual nursing routines and coronary care unit	0.62	0.40	2.88±1.40(3)	2.96±1.29(3)
	What to do if I have chest pain?	0.62	0.55	4.10±1.07(4)	4.14±1.03(5)
Anatomy and physiology	Why do I have chest pain?	0.76	0.62	3.54±1.35(`4)	3.58±1.29(4)
	What my heart looks like?	0.81	0.56	2.74±1.48(3)	2.81±1.17(3)
	How my heart works?	0.87	0.65	2.94±1.49(4)	3.02±1.20(3)
	What causes a heart attack?	0.90	0.75	3.29±1.53(4)	3.39±1.16(4)
	What happens when someone has a heart attack?	0.85	0.73	3.59±1.30(3)	3.67±0.69(4.5)
	How my heart heals	0.81	0.69	3.54±1.38(4)	3.59±1.22(4)
	Why my heartbeat may be irregular or I may have	0.85	0.75	3.28±1.45(4)	3.36±0.935(4)
Psychological factors	The normal psychological response to having a serious	0.80	0.63	3.28±1.36(4)	3.38±0.98(4)
	The importance of talking to someone about my fears,	0.80	0.69	3.16±1.43(3)	3.28±1.15(4)
	What effect stress has on my heart?	0.93	0.81	3.59±1.28(4)	3.68±1.04(4)
	What I can do to reduce stress while in the	0.92	0.80	3.52±1.34(4	3.58±1.04(4)

	hospital?			)	
	What I can do to reduce stress when I go home?	0.92	0.80	3.62±1.36(4)	3.64±1.18(4)
Risk factors	What the term "risk factor" means	0.86	0.52	4.11±0.85(4)	4.04±1.39(4)
	Which risk factors may have contributed to the onset of my heart disease	0.86	0.57	4.19±0.89(4)	4.16±1.07(4)
	What I can do to decrease my chances of having another	0.86	0.69	4.42±0.73(4)	4.38±1.05(5)
	How these risk factors affect my heart	0.82	0.67	4.30±0.68(5)	4.27±0.95(4)
Medication information	General rules about taking medications	0.83	0.43	±.	4.40±1.11(4)
	Why am I taking each of my medications?	0.86	0.41	4.38±0.73(5)	4.35±1.09(4)
	What the side effects of each medication are?	0.86	0.38	4.41±.0.81(4)	4.32±1.07(4)
	What to do if I have problems with my medication?	0.82	0.44	4.48±0.63(5)	4.40±1.11(4)
Diet information	General rules about eating	0.85	0.63	4.10±0.91(5)	4.07±1.04(4)
	How diet affects my heart disease?	0.91	0.64	4.01±0.92(4)	4.00±0.99(4)
	What the words cholesterol and triglycerides mean?	0.88	0.70	3.97±1.3(4)	3.98±1.05(4)
	What foods contain cholesterol and triglycerides?	0.84	0.65	4.09±0.97(4)	4.08±0.96(4)
	What my diet restrictions are, if any?	0.84	0.63	4.09±0.97(4)	4.09±0.91(4)
	How to adapt the recommended diet to my lifestyle?	0.81	0.67	3.87±1.08(4)	3.90±0.96(4)
Physical activity	Why I am not able to do as much physically as I was before	0.87	0.68	3.86±1.11(4)	3.84**±0.**97(4)
	General guidelines for physical activity	0.90	0.76	3.74±1.16(4)	3.70±0.973(4)
	What my physical activity restrictions are, if any?	0.93	0.75	3.85±1.15(4)	3.80±1.16(4)
	How to tell if I can increase my activity?	0.91	0.73	3.76±1.16(4)	3.72±1.22(4)
	When can I engage in sexual activity?	0.80	0.56	3.69±1.35(4)	3.72±0.96(4)
Other pertinent information	How to take my pulse	0.77	0.69	2.95±1.54(3)	3.01±1.25(4)
	The signs and symptoms of angina and a heart attack?	0.82	0.71	3.83±1.20(4)	3.85±1.04(4)
	The signs and symptoms of congestive heart failure	0.90	0.79	3.89±1.17(4)	3.88±1.05(4)
	When to call the doctor?	0.91	0.77	3.79±1.22(4)	3.78±1.08(4)
	If any other tests will be done after I leave the hospital?	0.88	0.78	3.93±0.98(4)	3.88±1.13(4)
	The reason for further testing after I go home?	0.84	0.80	3.75±1.17(4)	3.70±1.14(4)
	Where my family can go to learn C.P.R.?	0.86	0.80	3.71±1.26(4)	3.71±1.25(4)

Reliability:

To test the reliability of AR- CPLNI, the test-retest reliability analysis method was used, and the calculation of internal consistency through the use of Coeffecient alpha equation (Cronbach's-α). The Coefficient alpha for the tool as a whole was 0.96 with range of (0.71-0.93) concerning the eight subsections (Table 4,5). The item-total correlation coefficient for all items of the tool showed positive values, and was statistically significant at 0.92 ranged from 0.87 to 0.97. All values were more than (0.60) which entails consistency between all items of the domain. The item-total correlation values of the tool are correlated with reported corresponding statistics in the literatures[8,18,19].

Table (4): The Values of Pearson Correlation and Cronbach's Alpha Coefficients

Number	**Domain**	**The value of Pearson Correlation Coefficient**	**The value of Cronbach's Alpha Coefficient**
The First	Introduction to CCU	0.89	0.71
The Second	Anatomy and physiology	0.94	0.93
The Third	Psychological factors	0.97	0.92
The Fourth	Risk factors	0.96	0.87
The Fifth	Medication information	0.87	0.86
The Sixth	Diet information	0.92	0.92
The Seventh	Physical activity	0.97	0.93
The Eighth	Other pertinent information	0.89	0.93
Overall		0.92	0.96

Table 5: Internal Reliability (Cronbach's α) of the original tool and AR-CPLNI

Number	Domain	Original CPLNI (1984) Cronbach's α* n:20	The AR- CPLNI of Cronbach's Alpha Coefficient n=200
The First	Introduction to CCU	-	0.71
The Second	Anatomy and physiology	0.69	0.91
The Third	Psychological factors	0.69	0.92
The Fourth	Risk factors	0.86	0.87
The Fifth	Medication information	0.89	0.86
The Sixth	Diet information	0.89	0.92
The Seventh	Physical activity	0.81	0.93
The Eighth	Other pertinent information	0.84	0.93
Overall		0.91	0.96

V. Discussion

Translation and validation of an scale to assess the learning needs among the patients in a specific health area requires enormous work. It is necessary not only to adapt the instrument from a conceptual and cultural point of view, but also bring it close, as much as possible, to the reality of the target-patients[16]. In the case of Jordanian AMI patients, based on the results of the present study, it was found that there are regional, social and cultural differences in the learning needs and culture discussed at the theoretical level. Spector (2003),indicated that culture has an important impact on how patients access and respond to information related heath care; people depend on personal experiences and traditions when they learn from their own culture how to be healthy and recognize illness, and how to be ill[17]. The meanings of health and illness are associated to the values of culture and how they are shaped and perceived. Hence most reviewed literatures were conducted in western cultures[7,18,19]; conducting this study in an eastern Arabic country makes it available for use the CPLNI in Jordan in Arabic language to determine AMI patients' learning needs. The validity and adaptation of the CPLNI result from patient's understand and coping with disease and information of medical treatment-related information[20].In order to enhance the treatment effectiveness and its capability in terms of function, and reducing re-admission to hospital based on recurring AMI attack as well as reducing the inpatient stay at hospital, health education among AMI provided prior to discharge. The previous studies are consistent with theresults.[17,18,21,22] Furthermore, providing educational programs after AMI based on patients learning needs will enhance patients' responsibility in caring for their own health and will guarantee will planned rehabilitation programs[23].

The results related to the content validity as well as the reliability of the tool showed satisfactory levels for the CPLNI[10] inventory. In order to prepare a comprehensible Arabic adaptation of CPLNI and make it comprehensible for AMI patients in Jordan. In this study, the CVI value of each Arabic AR-CPLNI item was calculated, and the value reported was0.96, which shows the presence of unanimity among experts concerning the items of the tool. This agreement concerning the tool shows its high level of content validity[18,19]. The Coefficient alpha higher value of 0.96 reported for the AR- CPLNI, in comparison with the original CPLNI 0.91[10] and the reused CPLNI 0.95was reported[24] (Table3).The other method used for evaluating the internal consistency of the tool in the present study incorporated the item-total correlation. Each the subsections of the adapted version showed sufficient internal consistency, with

Coeffecient alpha value higher than 0.70. The correlation coefficients for all items of the Arabic version of the tool were found to be statistically significant, ranging from(0.87) to(0.97) (Table 4). The results of this study show that AR-CPLNI has an internal consistency similar to previous studies [18,19]. The reported repeatability coefficients of the subsections of AR-CPLNI were between 0.71 and 0.96, which reflects AR-CPLNI is a highly reliable tool(Table 4). The original tool repeatability correlations were not calculated[10]. Providing training and support for patients ought to begin when the patients admitted to hospital due to the acute stage of AMI and in the post-discharge span ought to continue.

VI. Conclusion

The version of the AR-CPLNI used in Jordan, had the same linguistic, conceptual, and semantic characteristics of the original tool and exhibited satisfactory reliability and stability values. It is necessary to conduct the current study in order to assess the validity and reliability of AR-CPLNI, for the purposes of developing adequate educational programs. Moreover, studies of this nature can be quite useful in the creation of strategies to stimulate AMI ' patients adherence to cardiac rehabilitation programs and can also interfere in the success of this intervention. The AR- CPLNI is a tool capable to assess the educational needs of AMI patients, with a satisfactory level of internal consistency. The findings indicate that AR-CPLNI is capable of delivering the vital information for developing and carrying out an individualized educational program in a safe manner, in order to meet the essential educational needs of patients with acute myocardial infarction. Limitation of the current study included the participation of an AMI patient group who live in a single city in the northern

district in Jordan. Therefore, it should be replicated in other districts of Jordan with different sampling groups

References

[1]. Rosamond W, Flegal K, Furie K, Go A, Greenlund K, Haase N (2008).Heart disease and stroke statistics--2008 update: a report from the American Heart Association Statistics Committee and Stroke Statistics Subcommittee. Circulation; 117(4):e25-146.

[2]. World health Organization (2017). Cardiovascular Disease: Fact Sheet http://www.who.int/topics/cardiovascular_diseases/en/

[3]. Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2015 on CDC WONDER Online Database, released December 2016. Accessed at http://wonder.cdc.gov/mcd-icd10.html.

[4]. Tasocak, G. (2003). Patient education. FNHYO publication no:9, Istanbul: I.U. Directorate of Printing and Publishing, 1

[5]. Jackson, E.W. (Eds.), Cheney, D.L. (1987). Patient Teaching Learning Needs Discharge Preparation Tips and Checklist, Nurse's Reference Library: Spring House Corporation Book Division.

[6]. Knowles MS. The Adult Learner: A neglected Species.3rd ed. (1989). Houston: Gulf Publishing Company.

[7]. Galdeano LE, Rossi LA, Spadoti Dantas RA. (2010). Deficient Knowledge Nursing Diagnosis: Identifying the Learning Needs of Patients with Cardiac Disease. International Journal of Nursing. 21(3):100-7.

[8]. Timmins F. A review of the Information Needs of Patients with Acute Coronary Syndromes (2005). Nursing Critical Care.10 (4):174-83.

[9]. Erefe, D. (2002). Research in Nursery, Principle, Process and Methods. The Features of Data Collecting Tools. HEMARG publish Number:1, Istanbul: Odak Offset, 169-88.

[10]. Gerard, P.S., Peterson, L.M. (1984) Learning Needs Of Cardiac Patients. Journal of Cardiovascular Nursing; 20 (2), 7-11.

[11]. Fayers PM, Machin D. Quality of Life. Assessment, Analysis, and Interpretation. The Assessment, Analysis, and Interpretation of Patient-Reported Outcomes. 2nd ed. Chichester: John Wiley & Sons; 2007. Scores and Measurements: Validity, Reliability, Sensitivity; p. 77-10)

[12]. Beaton DE, Bombardier C, Guillemin F, Ferraz MB. (2000). Guidelines for the Process of Cultural Adaptation of Self Report measures: 25 (24):3186-91.

[13]. Brislin, R.W. (1970). Back-translation for Cross-Cultural Research. Journal of Cross-Cultural Psychology, **1**, 185- 216. doi:10.1177/135910457000100301

[14]. Cha, E.S., Kim, K.H. and Erlen, J.A. (2007). Translation of Scales in Cross-Cultural Research: Issues and Techniques. Journal of Advanced Nursing, 58, 386-395. doi:10.1111/j.1365-2648.2007.04242.x

[15]. Polit, D.F. and Beck, C.T. (2008) Nursing research: Generating and assessing evidence for nursing practice. 8th Edition, Wolters Kluwer Health/Lippincott Williams & Wilkins, Philadelphia.

[16]. Guillemin F, Bombardier C, Beaton D. Cross-cultural adaptation of health related quality of life measures: literature review and proposed guidelines. J ClinEpidemiol. 1993; 46 (12): 1417-32.

[17]. Spector, R. E. (2003). Cultural diversity in health and illness (6th ed.). Upper Saddle River, NJ: Prentice Hall Health.

[18]. Galdeano,L., Rossi, L., , Dantas, R., Rodrigues, M., Furuya, R. (2012). Adaptation and validation of Cardiac Patients' Learning Needs Inventory for Brazilian patients. Acta Paul Enferm ;25(1):116-121.

[19]. Uysal, H., Enç, N. (2012). A Turkish Version of the Cardiac Patients' Learning Needs Inventory; Patient Questionnaire (TR-CPLNI): Reliability-Validity Assessment. International Journal of Caring Sciences;5(3): 264-279.

[20]. Galdeano L, Rossi L, Dantas R. (2010). Deficient knowledge nursing diagnosis: identifying the learning needs of patients with cardiac disease. International Journal of Nursing Terminology Classification. 21(3):100-7.

[21]. Gibbons, R., Balady, G., Bricker, G., Froelicher,V., Mark, D., McCallister, B., et al. (2002). ACC/AHA 2002 Guideline Update for Exercise Testing. Circulation, 106, 1883-1892. Available at: http://content.onlinejacc.org/cgi/reprint/40/8/1531.pdf

[22]. McVeigh, G., Bleakney, G., Cupples, M., Downey, B., Doyle, S. (2006). Guidelines for Cardiac Rehabilitation in Northern Ireland. Crest. Available at: http://www.gainni.org/Library/Guidelines/cardiac-rehab-guidelines.pdf

[23]. Karlik, B.A., Yarcheski, A. (1987). Learning Needs of Cardiac Patients: A partial Replication Study. St. Louis: Heart & Lung: The Journal of Critical Care, 16(5), 544- 551.

[24]. Buckley, T., McKinley, S., Gallagher, R., Dracup, K., Moser, D.K., Aitken, L.M. (2007). The effect of education and counseling on knowledge, attitudes and beliefs about responses to acute myocardial infarction symptoms. European Journal of Cardiovascular Nursing, 6, 105-111.

Dr. Falastine R. Hamdan. "Reliability And Validity of The Arabic Version of Cardiac Patients' Learning Needs Inventory (AR-CPLNI); Among Acute Myocardial Infarction Patients"." IOSR Journal of Nursing and Health Science (IOSR-JNHS) , vol. 7, no.2, 2018, pp. 40-47