

Assessment of Patients Compliance Regarding Therapeutic Regime with Coronary Heart Disease in Al- Najaf City

تقييم مطاوعة المرضى للنظام العلاجي عند الإصابة بأمراض القلب التاجية في مدينة النجف

Ahmed Kadhim Khashalah Al-Zurfy, Master student in the Department of Adult Nursing / College of Nursing / University of Babylon
Dr. Fakhria Jaber Muhbes, Ph.D /Assist. Prof. Department of Adult Nursing/ College of Nursing / University of Babylon
E-mail: ahmednoory622@yahoo.com

الخلاصة:

خلفية البحث: أمراض القلب التاجية وتعرف أيضاً بأمراض الشرايين التاجية وسببها ترسب أو تراكم اللويحات على جدران الشرايين وتعرقل سريان الدم الغني بالأوكسجين للوصول لعضلة القلب وتكون هذه اللويحات خليط من الدهون والأملاح.
الهدف: تهدف الدراسة إلى تقييم مطاوعة المريض حول النظام العلاجي للمرضى المصابين بأمراض القلب التاجية وإيجاد العلاقة بين مطاوعة المرضى حول النظام العلاجي والصفات الديموغرافية وكذلك إيجاد العلاقة بين مطاوعة المرضى حول النظام العلاجي ونوع المرض.
المنهجية: أجريت دراسة وصفية في محافظة النجف/ مركز النجف لجراحة القلب والتداخل القسطاري، للفترة من الرابع من كانون الأول، ٢٠١٤ ولغاية السابع والعشرون من أيار، ٢٠١٥. جمعت عينة غير احتمالية "غرضية" من (١٥٠) مريض يعاني من أمراض القلب التاجية، والمراجعين لمركز النجف لجراحة القلب والتداخل القسطاري. جمعت المعلومات من خلال استخدام الاستبانة التي تم تطويرها بعد تحديد صدقها وثباتها وباستخدام تقنية المحاورة مع المرضى. حددت ثبات استمارة الاستبانة من خلال اجراء الدراسة المصغرة و حددت مصداقيتها من خلال مجموعة مكونة من (١٩) خبير. و تم وصف وتحليل البيانات باستخدام اساليب الاحصاء الوصفي والاستنباطي.
النتائج: أظهرت نتائج الدراسة إن التقييم النهائي لمطاوعة المرضى للتوصيات العلاجية كان متوسط بنسبة ٥٠.٧%.
الاستنتاج: نستنتج من هذه الدراسة بان (نوع المرض، النظام العلاجي، العوامل الاجتماعية والاقتصادية) لها تأثير على مطاوعة المريض.
التوصيات: تؤكد الدراسة على الإرشاد والمتابعة يجب أن يستمر، على سبيل المثال في الزيارات المنزلية عن طريق الزائر الصحي، العيادات الاستشارية أو البطاقة الصحية يُمكن أن تساعد المرضى على التأقلم مع النظام العلاجي.
مفردات البحث: تقييم، مطاوعة المرضى، النظام العلاجي وأمراض القلب التاجية.

Abstract:

Background: Coronary heart diseases (CHD), also known as coronary artery disease (CAD), are caused by the buildup of plaque in the arteries that supply oxygen-rich blood to the heart. Plaque, a mixture of fat, cholesterol, and calcium deposits, can build up in the arteries over many years.

Objective of study: The study aims to: Assess patient's compliance about therapeutic regime with coronary heart disease and find out the relation between patient's compliance about therapeutic regime and patient demographic data, and find out the relation between patient's compliance about therapeutic regime and their type of disease.

Methodology: Descriptive Study is carried out in Al-Najaf City/ Al-Najaf Center for Cardiac Surgery and Trans Catheter Therapy, from December, 4th, 2014 to May, 27th, 2015. A non-probability (Purposive Sample) of (150) coronary heart disease patients, those who visited Al-Najaf Center for Cardiac Surgery and Trans Catheter Therapy. The data were collected through the utilization of the developed questionnaire after the validity and reliability are estimated, and by means of interview technique. Reliability of the questionnaire is determined through a pilot study and the validity through (19) experts. The data analyzed through the use of the descriptive and inferential statistical analysis procedures.

Result:The findings of the present study indicate that the overall assessment for the patient's compliance therapeutic regime is middle at 50.7%.

Conclusion: The study conclude if that the factors (type of diseases, therapeutic regime, socioeconomic states) to effect patient compliance.

Recommendations: The study recommended that reinforcement should be employed, for example at home visits, visits to the outpatient's clinic or by telephone can help patients to cope with their therapeutic regimen.

Key words: Assessment, Patients Compliance, Therapeutic Regime, Coronary Heart Disease.

INTRODUCTION

Coronary heart disease is one of the most common causes of death in the world and is becoming increasingly widespread as life expectancy increases⁽¹⁾. About 335,000 People a year die of coronary heart disease either in the emergency room or without ever reaching the hospital, usually due to a heart attack and ventricular fibrillation or tachycardia⁽²⁾. Patients possessing medication more than approximately 75% of the time are judged to be compliance. Provided that patients obtained their medication from a closed pharmacy system (e.g., Health Maintenance Organization), the method provides a reasonably objective measure of compliance that can be simply applied in large studies⁽³⁾. Health outcome and cost-effectiveness analyses incorporating measures of medication usage have been hampered by the lack of uniformity in standards of definitions and measurements used to describe the concepts of medication compliance or persistence⁽⁴⁾.

World health organization (WHO) focuses on the fact that efficient treatment is not always enough to keep optimal outcome. In addition to the efficient treatment the patient compliance to that treatment is important aspect that will keep on optimal outcome more than patient awareness or their knowledge is basic element, in helping them in compliance to the therapeutic regimen⁽⁵⁾.

OBJECTIVES:

The study aims to:

- 1- Assess of patient compliance about therapeutic regime after coronary heart disease.
- 2- Find out the relation between patient compliance about therapeutic regime and patient demographic data.
- 3- Find out the relation between patient compliance about therapeutic regime and their type of disease.

METHODOLOGY

Descriptive study was carried out through the present study in order to achieve the objectives. The period of the study is from December, December, 4th, 2014 to May, 27th, 2015. The study is conducted in Al-Najaf City at Al-Najaf Center for Cardiac Surgery and Trans Catheter Therapy. A Non-Probability (Purposive Sample) of (150) with coronary heart disease patients, those who visited Al-Najaf Center for Cardiac Surgery and Trans Catheter Therapy for treatment or follow up or both, were included in the study sample. The data had been collected through the utilization of the developed questionnaire after the validity and reliability were estimated, and by means of structured interview technique with the subjects who were individually interviewed. Data collection process has been performed from February, 1st, 2015 until the March, 3rd, 2015. Each subject takes off approximately (20-30) minute to complete the interview.

The Study Instrument:

A questionnaire is adopted and developed by after extension literature review and review the articles which were related to this field. The final study instrument consists of three parts:

Part 1: Demographic Data:

A demographic data sheet, consists of (6) items, which included age, gender, marital status, residency, and socio-economic status included occupational status, level of education, family type, type of housing, and possession of car.

Part 2: Clinical Data:

The second part of the questionnaire is comprised of (5) items, which included diagnosis, duration of the disease, number of previous hospitalizations, whether the patients received health education regarding the therapeutic Regime or not, and sources of received health education.

Part 3: Patients Compliance Regarding Therapeutic Regime:

This part of the questionnaire is comprised of (4) domains, including the Dietary Recommendations Domain, which measures through (5) sub-domains, reflects the different food groups include the grain and consists of (4) items, vegetables & fruit and consists of (5) items, milk product and eggs and consists of (6) items, meat, livestock and fish and consists of (6) items, and Fluids (juice, tea and coffee) and consists of (6) items. Healthy Behaviors Domain is comprised of (8) items which measure the different behaviors of the ischemic heart disease patients. Medications Domain, which is adopted from the Morisky Medications Adherence Scale, consists of (7) items. And Follow up Domain which consists of (8) items. All the domains, except the medication domain are adopted and developed with the aid of many scientific studies and guidelines ⁽⁶⁾.

The statistical data analysis approaches was used in order to analyze the data of the study under application of the statistical package (SPSS) ver. (20), and the Microsoft excel (2010). Data were presented using descriptive the in from of frequencies and Percentages. Summary Statistics tables including: Mean, Mean of scores (M.S), standard deviation (SD). Relative sufficiency (R.S): used to assess of patients' compliance regarding therapeutic regime with coronary heart disease by three grades (good, fair, poor). Person's correlation coefficient: was used to estimate the scale reliability through the application. Chi- square test: used to find out the association between of the patient's compliance and their demographic data and clinical data.

RESULTS

Table 1: Overall Assessment of the Patients' Compliance regarding Therapeutic Regime

Patients' Compliance Main Domains	Rating	Freq.	Perc. %	M.S	S.D	Chi-Square				Asse.
						χ^2	d.f	P-value	Sig.	
Dietary Recommendation	Poor	44	29.3	2.1200	0.83481	5.320	2	0.03	S	fair
	Fair	44	29.3							
	Good	62	41.4							
Healthy Behaviors	Poor	19	12.5	2.1200	0.60112	61.320	2	0.000	H.S	good
	Fair	94	62.5							
	Good	37	25							
Medications	Poor	43	28.7	1.9933	0.75526	6.760	2	0.02	S	fair
	Fair	65	43.3							
	Good	42	28							

Follow Up	Poor	56	37.5	1.8800	0.78510	4.320	2	0.121	N.S	poor
	Fair	56	37.5							
	Good	38	25							
Overall assessment of the patients' compliance	Poor	37	24.7	2.0000	0.70473	18.760	2	0.04	S	fair
	Fair	76	50.7							
	Good	37	24.7							

Note: - N (150); H.S (high significant at M.S 2.3733); S (significant at M.S 2.0000 -2.1467); N.S (non significant at M.S 2.0001)

Table (1) Shows that the majority of patients' overall responses were good at the *healthy behaviors domain*, fair at the *dietary domain* and *medications domain*, and poor at the *follow up domain*. Furthermore, the overall assessment for the patients' compliance regarding therapeutic regimen with coronary heart diseases was fair.

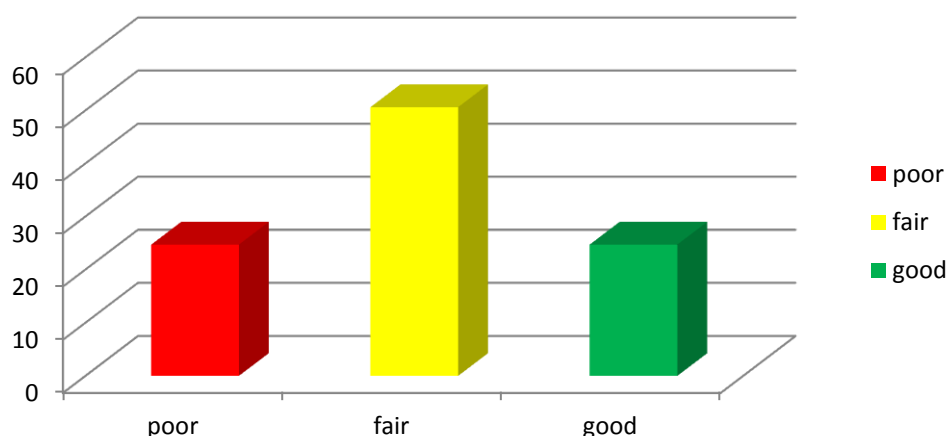


Figure (1) Distribution of the study subjects by their overall compliance regarding therapeutic regime with coronary heart diseases.

Table (2) Association between the Patients' Demographical Data with their Overall Assessment of the Patients' Compliance regarding Therapeutic Regime:-

Demographic Characteristics	Rating	Overall Patients' Compliance			M.S	S.D	Chi-Square			
		Good	Fair	Poor			χ^2	d.f	P-value	Sig.
Age groups/ years	24 - 37	6	10	5	2.0267	0.71369	17.440	4	0.011	S
	31 - 51	10	19	9						
	52 - 65	24	45	22						
Gender	Male	22	43	21	2.0067	0.70944	18.760	2	0.000	H.S
	Female	16	32	16						
	Single	2	4	1	2.0267	0.70422	20.440	6	0.000	H.S

Marital Status	Married	30	58	28						
	Widow	6	12	5						
	Divorced	1	2	1						
Residency	Rural	23	42	22	2.0200	0.71859	15.960	2	0.000	H.S
	Urban	17	31	15						
Occupational Status	Governmental employee	11	20	10	2.0133	0.71406	17.320	6	0.331	N.S
	Free job	6	12	6						
	Retired	5	10	5						
	Unemployed	17	32	16						
Level of education	Can not to read and write	9	17	8	2.0467	0.71735	16.360	12	0.000	H.S
	Able to read and write	6	10	5						
	Primary school	10	19	9						
	Intermediate school	4	6	3						
	Secondary school	4	6	3						
	Institutes or College	8	15	7						
	Master or doctorate	1	0	0						

Note: -HS: high significant at p-value less than 0.01, S: significant at value less than 0.05, and NS: Non- significant at P>0.05.

Table (2) show there association between the overall patients' compliance regarding therapeutic regime was a high significant with their (gender, marital status, residency, and level of education) at p-value less than 0.01, there was a significant (age) at p-value less than 0.05, moreover, no-significant association with their (occupational status) at p-value more than 0.05.

Table 3: Association between the Patients Clinical Data with their Overall Assessment of the Patients' Compliance regarding Therapeutic Regime

Clinical Data	Rating	Patients' Overall Compliance			M.S	S.D	Chi-Square			
		Good	Fair	Poor			χ^2	d.f	P-value	Sig.
Diagnosis	Angina	23	44	22	2.0133	0.71406	17.320	2	0.123	N.S
	MI	16	30	15						
Duration of the disease / Years	1 - 5	34	66	32	2.0267	0.70422	20.440	4	0.012	S
	6 - 10	2	4	1						
	11 - 15	3	6	2						
Number of	1 - 5	33	64	31	2.0200	0.70919	18.840	2	0.000	H.S

hospitalizations	6 - 10	6	11	5						
Receiving a health education	Yes	34	66	32	2.0200	0.70919	18.840	2	0.0012	S
	No	5	9	4						
Sources of received health education	Other	5	9	4	2.0200	0.70919	18.840	2	0.0012	S
	Physician	34	66	32						

Table(3) shows there association between the overall patients' compliance regarding therapeutic regime a high significant with their clinical data including (Number of Hospitalizations) at p-value less than 0.01, there was a significant (duration of the disease)receiving a health education at p-value less than 0.05, no-significant association with their (diagnosis) at p-value more than 0.05.

Table 4: Association between the Patients Socio-economic statuses with their Overall Assessment of the Patients' Compliance regarding Therapeutic Regime

Socio-economic status	Patients' Overall Compliance			M.S	S.D	Chi-Square				Asse.
	Good	Fair	Poor			χ^2	d.f	P-value	Sig.	
High economic = 87- 100	12	23	11	1.9783	0.71458	5.783	2	0.058	S	Fair
Mild economic = 71 - 86	15	27	13	1.9636	0.71915	6.255	2	0.043	S	Fair
Low economic = 55 -70	13	24	12	1.9796	0.72139	5.429	2	0.06	N.S	Poor
Overall Socio-economic status	1	100	49	1.6667	0.47298	16.667	2	0.010	S	Fair

Table (4) shows patients' socio-economic status responses are fair at the high economic and mild economic, poor at the low economic.

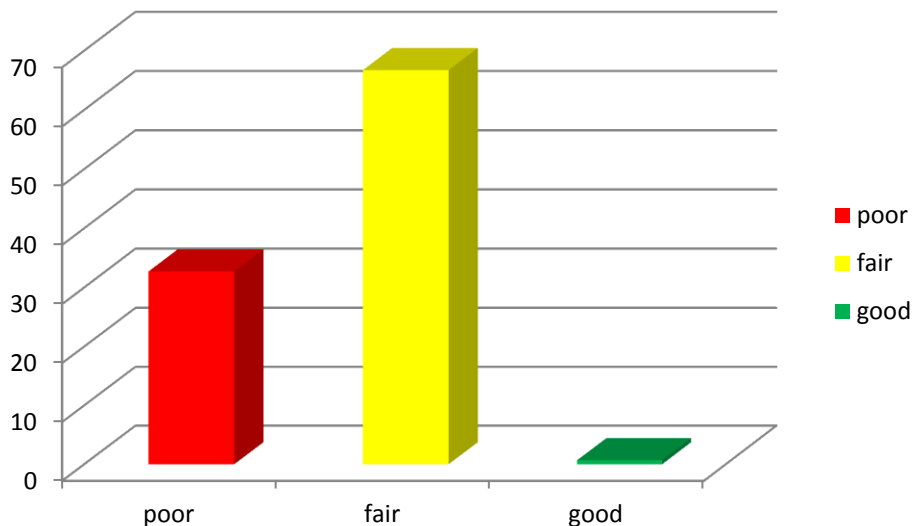


Figure (2) Distribution of the study subjects by their put the level of socio-economic of the Patients' Compliance regarding Therapeutic Regime with coronary heart diseases

DISCUSSION

The majority of patients at age (52 - 65) years, this result was supported by ⁽⁷⁾, studies of other cardiovascular conditions suggested important differences in the relationship between symptom severity and quality of life in older versus younger patients.

The majority of patients were males. This result comes along with ⁽⁸⁾ who mentioned that the male was the dominant gender for patients with coronary heart diseases.

The high percentages of patients were married. This result indicates found that the highest percentage is for married patients ⁽⁹⁾.

The results of the present study show that the majority of the sample living at urban residential area. This result comes along with other studies which indicated that the majority of the patient's subjects were resided in big cities rather than the countryside ⁽¹⁰⁾, state that the majority of the patients were lived in urban residential area. The individuals in rural residential areas, were more prone to get coronary heart diseases due to the risk factors that were more focused in urban than in rural areas such as the psychological stress ⁽¹¹⁾. Concerning with educational levels, the higher percentage were for those who were graduated from secondary schools. This result agrees with ⁽¹²⁾, which presented that the majority of their study subjects were secondary school graduated. Occupational status, the highest percentage was for the unemployed (housewife, unskilled workers as laborers, farmers, casual workers) followed by the employed patients. While for the employee this result is supported with ⁽¹³⁾, the results indicate that the highest percentages were for unemployed patients.

In regarding to the diagnosis, the results indicate that the higher percentages were for angina. This result is supported with ⁽¹⁴⁾; the results indicate that the higher percentages were for patients those who were suffering from heart diseases. The number of previous hospitalization, the higher percentage is for those who were admitted to the hospital two times previously. Also ⁽¹⁵⁾ mention that health care workers, in general, and physicians, in particular, occupy positions of enormous influence in helping patients take positive lifestyle actions to

lower their risk of CHD. The overall assessment of the patients compliance regarding therapeutic regime and the social and economic factors were fair, the overall assessments of these factors were fair. These results were supported with the ⁽¹⁶⁾, whose study results indicate that the level of patients' compliance to therapeutic regime (50%). In the United States, only 51% of the patients treated compliance to the prescribed treatment ⁽¹⁷⁾.

These study results were supported with ⁽¹⁸⁾, the results of their study indicate that there was a significant effect of the patients' gender on their compliance to the recommendations provided by the health care providers ⁽¹⁹⁾. Found that there was a non significant effect of the patients' level of education, marital status, and their clinical data, on their compliance to therapeutic regime ⁽²⁰⁾. Find that there was a non significant effect of the patients' age, gender and the number of visits on their compliance ⁽²¹⁾. Found that there was a non significant effect of the patients' gender and the marital status on the patients' compliance to therapeutic regime. They also found that there was a non significant effect of the patients' age and there information about the therapeutic regime and that affects the patients' compliance ⁽²²⁾, the results of their study indicate that there was a significant There were significant between the economic status and the patients compliance ⁽²³⁾, they find that the patients education, social support and economic factors affecting patients compliance to therapeutic regime. ⁽²⁴⁾ they focused on the negative consequences associated with the poor communication between the chronic disease patients and the health care providers, they find that the patients information and their relationship with the health staff these will affecting their compliance to the therapeutic regime. ⁽²⁵⁾, found that there was a significant effect of the patients' economic status, level of information about these recommendations, social support, cognitive factors, and other factors, and their compliance to the therapeutic regime.

CONCLUSION:

The study was formulated to predict an effect of the patient's centered factors, disease and therapy, and the social and economic factors, on the patient's compliance to therapeutic regime. The study confirmed that there was a deficient in the patients' compliance to therapeutic regime.

RECOMMENDATIONS:

- 1-** An intensive comprehensive wide population-based (national level) studies could be conducted to assess the factors which affect the patients' compliance to therapeutic regime with the coronary heart diseases, with suitable solutions for these factors to improve the level of patient's compliance.
- 2-** A health education programs should be implemented to increase the patients' knowledge about the importance of compliance to therapeutic regime and the factors that may affect patient's compliance and the possible solutions for this problem.
- 3-** Reinforcement should be employed, for example at home visits, visits to the outpatients' clinic or by telephone can help patients to cope with their therapeutic regimen.

REFERENCES:

- 1- Handler C.; Coghlan, G.; *Hand Book Living with Coronary Disease*, London, 2007, p.p. 10, 11.
- 2- Cooper, A; Skinner, J; Nherera, L; Feder, G; Ritchie, G; Kathoria, M; Turnbull, N; Shaw, G; MacDermott, K; Minhas, R; Packham, C; Squires, H; Thomson, D; Timmis, A; Walsh, J; Williams, H; White, A; *Post Myocardial Infarction Secondary prevention in primary and secondary care for patients following a myocardial infarction*, Post MI Full Guideline – Final Version – May 2007, p.p. 186.
- 3- Naderi, S.; Jonathan, P.; Bestwick.;David,S.; Wald.; Adherence to Drugs That Prevent Cardiovascular Disease, *American Journal of Medicine*, 125 (9), 2012, P.: 883.
- 4- Cramer, J.; Roy, A.; Burrell, A.; Fairchild, C.; Fuldeore, M.; Ollendorf, D.; Wong, P.; *Medication Compliance and Persistence: Terminology and Definitions; International Society for Pharmacoeconomics and Outcomes Research*, 2008, 11 (1), p.p. 44.
- 5- Jin, J.; Sklar, E.; Sen, M.; Li, C.: Factors Affecting Therapeutic Compliance: A Review from the Patient’s Perspective, *Therapeutics and Clinical Risk Management*, 2008: 4(1), p.p. 269–286.
- 6- British Heart Foundation, How healthy is your diet? Questionnaire, 2012.
- 7- Heran, B. S; Chen, J; Ebrahim, S; Moxham, T; Oldridge, N; Rees, K; Thompson, D. R; Taylor, R. S; and Taylor, R. S; *Exercise-based cardiac rehabilitation for coronary heart disease (Review)*, 2011, 8, p.p. 6 – 8.
- 8- Atsushi Hozawa; Thomas Houston; Michael W. Steffes; Rachel Widome; O. Dale Williams; Carlos Iribarren; Mark J. Pletcher; Martha L. Daviglius; Jeffrey Carr; David R. Jacobs; *The association of cigarette smoking with self-reported disease before middle age: The Coronary Artery Risk Development in Young Adults (CARDIA) study*, *Preventive Medicine*, 2006, 42, p.p. 193 – 194.
- 9- Weston,N. M; *Identifying Perceptions of Health promotion Barriers and Benefits In Individuals at Risk for Coronary Heart Disease*, Published Thesis, Montana University\ College of Nursing, p.p. 28 – 31.
- 10- Oladapo, O. O; Salako, L;Sadiq, L; Soyinka, K; and Falase, A. O; *Knowledge of Hypertension and other Risk Factors for Heart Disease among Yoruba Rural Southwestern Nigerian Population*, *British Journal of Medicine & Medical Research*, 2013, 3(4), p.p. 993 –
- 11- Dijkstra, A. F; Verdonk, P; &Lagro-Janssen, A. L. M; *Gender bias in medical textbooks: examples from coronary heart disease, depression, alcohol abuse and pharmacology*, Blackwell Publishing Ltd 2008, *Medical Education* 2008,42, p.p. 1024 – 1025.
- 12- Weilu, Z.; Yong, L.; Yongping, Y.; Zhenjun, G.; Qiangsun, Z.; Lei, Z.; Yi, C.; Ke, M.; Dezhong,X.; *Health-related quality of life in Chinese patients with coronary heart disease after percutaneous coronary intervention with stent*, *Academic Journals, China*, 2011, 6(6), p.p. 1232, 1237.
- 13- Hofer, S; Saleem, A; Stone. J; Thomas, R; Tulloch, H; Oldridge, N; *The MacNew Heart Disease Health-Related Quality of Life Questionnaire in Patients with Angina and Patients with Ischemic Heart Failure*, *International Society for Pharmacoeconomics and Outcomes Research*, 2012, 15, p.p. 147 – 148.
- 14- Ice. R; *Physical Therapy*; *Journal of the American Physical Therapy Association and long-Term compliance*, USA, 2012, 65(12), p.p. 1832, 1836, 1837.
- 15- Brown,M. T; and Bussell,J. K; MD; *Medication Adherence: WHO Cares? Foundation for Medical Education and Research*, 2011, 86(4), p.: 304.
- 16- Daly,C; Clemens, F; Sendon, J. L. L; Tavazzi, L; Boersma, E; Danchin, N; Delahaye, F; Gitt, A; Julian, D; Mulcahy, D; Ruzyllo, W; Thygesen, K; Verheugt, F; Fox, K. M; *Gender Differences in the Management and Clinical Outcome of Stable Angina*,*American Heart Association*, 2006,113, p.p. 490 – 941.

- 17- European Heart Journal; *European Guidelines on cardiovascular disease prevention in clinical practice (version 2012)*, 2012, **33**, p.p. 1697 – 1698.
- 18- Erhardt, L; and Mourad, J. J; *Adherence to Antihypertensive and Lipid-lowering Therapy – Impact on Clinical Practice*, European Cardiology, 2008 p.: 14.
- 19- Bitton, A; Choudhry, N. K; Matlin, O. S; Swanton, K; Shrank, W, H; *The Impact of Medication Adherence on Coronary Artery Disease Costs and Outcomes: A Systematic Review*, American Journal of Medicine, 2013, 126(4), p.p. 356 – 357.
- 20- Alagaw, A; Godana, W; Taha, M; and Dejene, T; *Factors Associated with Antiretroviral Treatment Adherence among Adult Patients in Wolaita Soddo Hospital*; Journal of Tropical Diseases, 2013, 1(4), p.p. 2 – 4.
- 21- Kelley, K; Kemple, A; Rush, C; Sarliker, S. E; *Coronary Heart Disease, Health of Washington State*, Washington State Department of Health, 2013, p.p. 2 – 4.
- 22- Naqvi, H; *‘Living with Heart Disease’ Survey of Primary Care Coronary Heart Disease Patients in Bristol: Summary of Key Findings*, National Health Service ,2004, P.P. 20 – 21.
- 23- World Health Organization. *Chronic disease and health promotion*. Available from www.who.int/chp/about/en/index.html 2010.
- 24- Mottillo, S; Filion, K. B; Genest, J; Joseph, L; Pilote, L; Poirier, P; et al; *The metabolic syndrome and cardiovascular risk a systematic review and meta-analysis*, Journal of the American College of Cardiology, 2010, 56(11), p.p. 13, 32.
- 25- Zyoud, S. H; Al-Jabi, S. W; Sweileh, W. M ; and Morisky, D. E; *Relationship of treatment satisfaction to medication adherence: findings from a cross-sectional survey among hypertensive patients in Palestine*, Health and Quality of Life Outcomes, 2013, 11(191), p.p. 5 – 6.