Original Article

Compliance on Therapeutic Regimen among Heart Failure Patients attending in Cardiac Center, Kathmandu

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Abstract

Heart failure is a chronic, progressive condition in which heart muscle is unable to pump enough blood. The incidence and prevalence of heart failure is increasing gradually to a high. Quality of life of heart failure patient is based on compliance to therapeutic regimen. So this study was done to assess the status of compliance on therapeutic regimen among heart failure patients attending Shahid Gangalal National Heart Center (SGNHC), Kathmandu.

The descriptive cross-sectional study design was used for the study. Two hundred fifty patients who were clinically diagnosed with heart failure and under treatment for more than three months attending the outpatient department of SGNHC were selected by non-probability purposive sampling technique for data collection. Patients' compliance status was assessed by using semi – structured interview question and modified Evangelist's Heart Failure Compliance Questionnaire. Data was analyzed by using the descriptive and inferential statistics.

This study revealed that 58.8% of heart failure patients had received compliance counseling from the health care professionals; 98% of patients had compliance on medicine, 94% on follow up, 79.2% on diet, 46.8% on fluid restriction, 26.4% on exercise and only 8% on weight measurement. Overall compliance on therapeutic regimen of heart failure patients was 57.6%. Ethnicity (p=0.000) and religion (p=0.005) were statistically significant with overall compliance among heart failure patients.

This study showed that the majority of heart failure patients had compliance to follow-up, medicine and diet, only a minority of them had compliance to weight measurement, fluid restriction and exercise. Only, more than half of the heart failure patients had compliance on overall therapeutic regimen. Thus, all heart failure patients need to receive compliance counseling from the time of first diagnosis of heart failure in health care setting for their compliance on all aspects.

Key words: Compliance, Heart failure patients, Therapeutic regime

Introduction

Heart failure is a chronic condition that demands patients remain to be fully compliant to a lifelong therapeutic regimen to achieve optimal outcomes. Multiple medications are required in heart failure to reduce the morbidity and mortality. The longer the patient survives the less the compliance. The most common cause of heart failure exacerbation and frequent hospital admission is believed to be noncompliance with the medication (Wu, Moser, Chung & Lennie, 2008).

In developing countries, around 2% of adults suffer from heart failure, but in people over the age of 65 years, this rate increases to 6-10%. Study done on self-care status in heart failure patients found that 43% of them were unaware

of potentially harmful effects of salt during the treatment, more than 40% of participants did not takes their weight (Baghianimoghadam et al., 2013).

Similarly, the study on compliance in heart failure patients done on Netherlands showed that overall compliance was 72%. Highest compliance was noted on medication and appointment keeping (>90%). Compliance with diet was 83%, fluid restriction 73%, exercise 39% and lowest was 35% on weight measures (Martje, Tiny, Veegar & Drik, 2005). Besides these, another study done in Iran on a relationship between awareness of disease and adherence to therapeutic regimen among cardiac patients showed that medication adherence was noted in 79%, diet adherence in 60% and physical activity adherence in 61% (Heydari, Ziaee & Gazrani, 2014).

Based on the scientific evidence, compliance with therapeutic regimen on medicine, follow up, diet, exercise, fluid restriction and weight measurement helps to maintain the good quality of life in heart failure patients. So, it is necessary for the health professionals to be aware of the need of patients' compliance to therapeutic regimen.

Methodology

This study used quantitative, descriptive cross-sectional study design. The study was carried out at Shahid Gangalal National Heart Center (SGNHC). The population of the study was heart failure patients who were diagnosed for more than 3 months, under treatment and came for follow up. The sample size was calculated by using the Cochran's formula by taking the prevalence of compliance of heart failure on therapeutic regimen, p=47.2%=0.47 (Sreeja & George, 2016) and finite population of SGNHC (as SGNHC OPD in average has a flow of 720 cases/month). Non- probability purposive sampling method was used to select 250 heart failure patients. The researcher developed the semi-structured interview questionnaire to collect the information

regarding sociodemographic and disease related variables and used modified version of Evangelista's heart failure compliance questionnaire for assessing compliance on therapeutic regimen. Validity of the instrument was established by consulting with expert cardiologists Dr. Chandramani Adhikari, Dr. Sujeeb Rajbhandari and Matron Krishna Kumari Subedi of SGNHC. Pretesting of the instrument was done among 25 patients receiving heart failure treatment who attended the medical outpatient department of SGNHC and they were excluded in the final study. Some necessary changes were done in questionnaire after the pretesting.

Research approval was taken from Research Committee of Maharjgunj Nursing Campus, Maharajgunj. Ethical clearance was obtained from Institutional Review Board of Tribhuvan University, Institute of Medicine and Institutional Review Committee of SGNHC. After getting formal permission from the SGNHC, the objective of the study was explained to each respondent. Both verbal and written consent was obtained from each respondent before data collection. Data was collected from 8th September to 6th October, 2016. Face to face interview was done. The average time required to complete the interview was about 20-30 minutes. Privacy was maintained by taking interview in a separate room. Confidentiality was maintained by using code number in each form and also assured that the information obtained was used for study purpose only.

The collected data was checked daily and organized for completeness and accuracy. Data was then edited, classified, coded, entered and analyzed by using SPSS version 16. Data was analyzed by using descriptive statistics (frequency, percentage, mean, and standard deviation). Chi square and Fisher Exact test were used to determine the association between compliance on therapeutic regimen and the selected variables.

Results

Table 1 : Socio-demographic Characteristics of Respondents

n=60

Characteristics	Frequency	Percent
Age (in Years)		
>60	113	45.2
≥61	137	54.8
Mean ± SD =59.7± 13.619		
Sex		
Male	148	59.2
Female	102	40.8
Marital Status		
Married	197	78.8
Single	53	21.2
Level of Education		
Literate	149	59.6
Illiterate	101	40.4
Type of Family		
Nuclear	113	45.2
Joint	137	54.8
Ethnicity		
Brahmin/Chhetri	113	45.2
Adibasi/Janajati	105	42
Madhesi	16	6.4
Dalit	14	5.6
Muslim	2	0.8
Religion		
Hinduism	226	84.6
Buddhism	26	10.4
Christianity	6	2.4
Islam	2	0.8
Family Income		
Sufficient for less than 1 year	161	64.1
Sufficient for 1 year and surplus	89	35.6
Duration of Heart Failure		
Less than 5 year	188	75.2
More than 5 year	62	24.8
Received Compliance Counseling		
Yes	147	58.8
No	103	41.2

Table 1 shows that 54.8% of the respondents were above the age of 61 years with the mean age of 59.7, SD ± 13.619. Among them, 59.2% were male, 78.8% were married, 59.6% were literate and 54.8% were from joint

family. Similarly, 45.2% of them were from Brahmin and Chhetri and 42% were Adibasi and Janjati. Among them, 86.4% were Hindu and 0.8% were Muslim. Regarding family income, nearly two third (64.1%) of the respondents had sufficient income for less than one year. Similarly, the majority (75.2%) of them had less than 5 years of history of diagnosis of heart failure and only 58.8% of them received compliance counseling from health professional.

Table 2: Respondents' Compliance on Therapeutic Regimen

n=250

Variables	Compliance		Non-compliance	
	Frequency	Percentage	Frequency	Percent
Medicine	245	98	5	2
Follow-up	235	94	15	6
Diet	198	79.2	52	20.8
Fluid Restriction	117	46.8	133	53.2
Exercise	66	26.4	184	73.6
Measuring Weight	20	8	230	92
Overall Compliance*	144	57.6*	106	42.2

Compliance on follow up, medicine and any other two items

Table 2 shows that 98% of respondents had compliance on medicine, 94% on follow-up, 79.2% on diet, 46.8% on fluid restriction, 26.4% on exercise and only 8% on weight measurement. Similarly, only 57.6% had overall compliance on therapeutic regimen among heart failure patients.

Table 3 : Association of Overall Compliance on Therapeutic Regimen of Respondents and Selected Variables

n=250

Selected Variables	Total	Compliance	Noncompliance	Chi-square	P- value
Age (Years)					
< 60	113	63	50`	0.288	0.591
≤ 61	137	81	56		
Sex					
Male	148	83	65	0.343	0.558
Female	102	61	41		
Marital Status					
Married	242	139	103	-	0.538+
Single Status	8	5	3		
Education					
Literate	149	92	57	0.595	2.107
Illiterate	101	52	49		

Selected Variables	Total	Compliance	Noncompliance	Chi-square	P- value
Type of Family					
Nuclear	113	69	44	0.012	1.314
Joint	137	75	62		
Ethnicity					
Brahmin/Chhetri	113	79	34	12.798	0.000
Others	137	65	72		
Religion					
Hindu	216	132	84	8.017	0.005
Non-Hindu	34	12	22		
Economic status					
Sufficient for <1 year	161	86	75	3.241	0.072
Sufficient for > 1year	89	58	31		
Duration of Heart Failure					
< 5 year	188	108	80	0.007	0.932
> 5 year	62	36	26		
Received Compliance Counseling					
Yes	147	91	56	2.707	0.100
No	103	53	50		

Level of significance < 0.05   **+Fisher exact test**

Table 3 shows that there was no association between overall compliance on therapeutic regimen of heart failure patients and age (p=0.591), sex (p=0.558), marital status (p=0.538), education (p= 2.107), type of family (p=1.314) and economic status (p=0.072). Similarly, there was no association between their overall compliance on therapeutic regimen and duration of heart failure (p=0.932) and whether receiving compliance counseling or not (p=0.100). There was association between the respondents overall compliance on therapeutic regimen with their ethnicity (p=0.000) and religion (p=0.005).

Discussion
Socio-demographic Characteristics

Demographic findings of the study revealed that 59.2% of patients were males and 40.8% females whose mean age was 59.7±13.619. The findings of this study showed that 78.8% of them were married, 59.6% were literate. Regarding the economic status, 64.1% of the respondents' had household income sufficient for less than 1 year and 35.6% had household income sufficient for 1 year and surplus. Similarly, 54.8% of patients belong to a joint family and 45.2% were from a nuclear family. Regarding ethnicity, 45.2% of the respondents were from Brahmin and Chhetri followed by Adibasi/Janjati (42%). Among them, 86.4% of the respondents were from Hindu religion.

The study showed that 75.2% were diagnosed with heart failure for less than 5 years and 24.8% were more than 5 years. This finding is supported by the study conducted by the (Al-khadher & Fadl-elmula, 2015), who showed that among 132 patients, 38.63% were diagnosed for less than 1year, 50% were diagnosed as 1-3 years and 11.37% were diagnosed as more than 4 years. The findings of this study showed that 58.8% of the respondents had received compliance counseling from the health care professionals and 41.2% did not receive any counseling.

Present study showed that 98% of heart failure patients had compliance on medicine, 94% had compliance on follow-up, 79.2% on diet, 46.8% on restriction of daily fluid intake, 26.4% on performing exercise and 8% on measuring weight. This finding is supported by the study conducted by (Al-khadher & Fadl-elmula, 2015), which showed that among 132 patients, medications compliance was 88.6%, follow-up appointment keeping was 81.8%, daily weighing was 16.6%, performing exercise was 12.12% and restriction of daily fluid intake was 10.6%. This study finding showed that only 57.6% of patients had overall good compliance on therapeutic regimen. However, in the study conducted by Van Der Wal et al.,(2006), the overall good compliance on therapeutic regimen was 72% among 501 heart failure patients.

The findings of this study showed significant association between overall compliance on therapeutic regimen and ethnicity (p=0.000) and religion (p=0.005). The findings of this study showed that there was no association between overall compliance on therapeutic regimen and marital status (p=0.538), education (p=2.107), source of income (p=1.277), types of family (p=1.314), economic status (p=0.072), duration of heart failure (p=0.932), received compliance counseling (p=0.100) and overall compliance on therapeutic regimen. Due to different cultural aspects, ethnicity and religion has significant association between overall compliance on therapeutic regimen and may be due to unaware of disease condition other factors has no association.

Conclusion

Our study showed that the majority of patients with heart failure had good compliance with follow-up, medicine and diet. Only a minority of them has compliance with weight measurement, fluid restriction and exercise. Similarly, only more than half of the respondents has overall good compliance on therapeutic regimen. This study also showed that there is significant association between compliance on therapeutic regimen and ethnicity and religion. It is necessary to educate all the heart failure patients about the compliance to therapeutic regimen from the beginning of the diagnosis to improve the quality of life.

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