Research Article

Adherence to therapeutic regimen among patients with cardiovascular diseases in selected community area Dehradun, Uttarakhand

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Received: February 27, 2018; **Accepted:** March 21, 2018

ABSTRACT

Background: Adherence to therapeutic regimen is an important element of self-care behaviors in cardiac patient. Adherence simply means to which patients taking medication, following diet and changing lifestyle as recommended by the health-care professional. **Objectives:** (1) To assess adherence to therapeutic regimen among patients with cardiovascular diseases (CVDs), (2) to identify factors contributing adherence to therapeutic regimen among patients with CVDs, (3) to identify factors contributing non-adherence to therapeutic regimen among patients with CVDs, and (4) to identify association between adherence to therapeutic regimen and selected sociodemographic variables of patients with CVDs. **Materials and Methods:** Quantitative approach was used in the present study. A total of 105 samples were selected using purposive sampling technique from community area (Rajiv Nagar, Doiwala) Dehradun, and data were collected by interview method and using structured questionnaire on sociodemographic variables, clinical profile of patients, and adherence to therapeutic regimen. The data were analyzed using descriptive and inferential statistics. **Results:** Finding of the present study showed that majority (90.5%) of the participants were diagnosed with hypertension, approximately half (48.57%) of them were performing exercise, majority (79.05%) restricted the salt in diet, half (50.5%) of the participants were adhering to medication, majority (82.86%) went for regular follow-up, and 69.52% of them practiced stress management technique. It was found that there was a significant association between gender and exercise performed, salt restriction and gender, medication and educational qualification, and also between stress management technique and age at statistically significant level of $P < 0.005$. **Conclusion:** Most of the participants were suffering from hypertension, majority of them went for regular follow-up, practiced stress management technique, approximately half of them performed exercise, restrict salt in diet, and half of the participants adhered to medication. Association was found between therapeutic regimen and selected sociodemographic variables.

KEY WORDS: Adherence; Therapeutic Regimen; Patients with Cardiovascular Disease

INTRODUCTION

Cardiovascular diseases (CVDs) involve reduction of blood supply to vital organs such as heart, brain, lungs, and kidneys as results of thrombosis or atherosclerosis.[1] The country wise statistics of the WHO on non-communicable diseases (NCDs) estimates that NCDs account for 53% of the total deaths in India, out of which eight CVDs have a major share of 24%.[2] The prevalence of hypertension is highest in Africa (46%) while the prevalence in the Americas is 35%.[3] The estimated number of Indians with hypertension was 120 million in the year 2000, which is likely to expand to 200 million by 2025.[4] In India, hypertension is directly responsible for 51% of all stroke deaths and 47% of coronary heart disease deaths.[5]

Epidemiological evidence suggests that dietary changes associated with the nutritional transition, specifically the

Access this article online	
Website: http://www.ijmsph.com	Quick Response code
DOI: 10.5455/ijmsph.2018.0206621032018	

Table 1a: Frequency and percentage distribution of sociodemographic variables of study participants, *n*=105

Variables	Frequency (%)
Gender	
Male	32 (30.47)
Female	73 (69.52)
Age (years)	
30–50	52 (49.52)
51–70	53 (50.47)
Educational qualification	
No formal education	61 (58.09)
<5th class	16 (15.24)
10th pass	20 (19.05)
12th pass	3 (2.85)
Graduation and above	5 (4.76)
Marital status	
Married	87 (82.86)
Widowed	15 (14.28)
Divorced	3 (2.86)
Occupation	
Private	39 (37.14)
Government	11 (10.48)
Housewife	55 (52.38)
Monthly family income in rupees	
5000–10,000	82 (78.09)
10,001–15,000	12 (11.48)
15,001–20,000	7 (6.67)
Above 20,000	4 (3.80)
Type of family	
Nuclear	73 (69.52)
Joint	32 (30.48)
Religion	
Hindu	98 (93.33)
Muslim	5 (4.76)
Sikh	1 (0.95)
Christian	1 (0.95)
Dietary pattern	
Vegetarian	26 (24.76)
Non-vegetarian	71 (67.61)
Eggetarian	8 (7.61)

Personal habits	Yes (F & %)	No (F & %)
Presently smoking	22 (20.95)	83 (79.05)
Smoking since (*n*=22) (years)		
1–10	11 (50)	
11–20	7 (31.81)	
21–30	4 (18.18)	
Cigarette/bidi per day		
2–4 piece/day	15 (68.18)	
5 piece–1 packet/day	7 (31.81)	
History of smoking in the past (*n*=83)	22 (26.51)	61 (73.49)
Exposed to the secondhand smoking	18 (17.14)	87 (82.86)
Drink alcohol presently	24 (22.85)	81 (77.14)
since (*n*=24) (years)		
1–10	10 (41.67)	
11–20	10 (41.67)	
>20	4 (16.67)	
Frequency of alcohol consumed		
daily	6 (25)	
1–3 times/week	18 (75)	
History of drinking alcohol in the past (*n*=81)	10 (12.35)	71 (87.65)
Chew tobacco presently		
since (*n*=13) (years)	13 (12.38)	
<1–10		92 (87.62)
11–20	10 (76.92)	
Frequency of chewing tobacco	3 (23.07)	
1–3 times/day	11 (84.61)	
4–6 times/day	2 (15.38)	
History of using tobacco in the past (*n*=92)	5 (5.43)	87 (94.57)
*Multiple response		
No addiction		73 (69.52)

(Contd...)

Table 1a: *(Continued)*

*Precipitants gave more than one response

increase consumption of energy dense diets high in unhealthy fats, oils, sodium, and sugars, have contributed to an increase in CVD incidence in low- and middle-income countries. Excessive and harmful intake of alcohol clearly increases CVD risk.[6]

Therapeutic regimen is the various aspects of managements which include drugs therapy, dietary management, exercise, and cessation of social habits such as smoking and alcohol.[7] The prevention and early treatment of heart disease must involve a multifactorial approach and needs to be ongoing throughout the lifespan. The person who has modifiable risk factors should be encouraged and motivated to make the lifestyle changes to reduce the risk of heart disease. If the person is effectively following the lifestyle modification, it can reduce the risk and complication associated with heart disease.[8]

Need for the Study

CVDs have been gaining importance in India recently because of increased incidence of the disease over the years. It is the first among top five causes of deaths in Indian population.[9] The WHO quoted the statement by Haynes *et al*. that "increasing the effectiveness of adherence interventions may have a far greater impact on the health of the population

than any improvement in specific medical treatments."[10] A study by Abuabker on level of adherence to lifestyle modification and medication among 144 male hypertensive patients revealed that adherence to exercise was 20.1%, a healthy diet was 11.8%, and medications was 34.7%. Patients of ages <65 years were found to be more adherent to a healthy diet compare to elderly ones.[11]

The investigator hypothesized that there would be a significant association between adherence to therapeutic regimen and selected socio demographic variables.

MATERIALS AND METHODS

A quantitative approach with descriptive survey research design was used in the present study. A total of 105 samples were selected using purposive sampling technique from community area (Rajiv Nagar, Doiwala) Dehradun, the inclusion criteria were - (1) patients diagnosed with hypertension or coronary artery disease or myocardial infarction, (2) patients taking treatment since past 1 month or more, and (3) patients who were 30 years–70 years of age. The exclusion criteria were - (1) patients who refused to participate in the study and (2) patients who were cognitively impaired. Data were collected by interview method and using structured questionnaire on socio demographic variables, clinical profile of patients, and adherence to therapeutic regimen. The data were analyzed using descriptive and inferential statistics.

Table 1b: Frequency and percentage distribution of clinical profile of study participants, *n*=105

Variables	Frequency (%)
Medical diagnosis	
Coronary artery disease	8 (7.62)
Hypertension	95 (90.5)
Myocardial infarction	2 (1.90)
History of illness (years)	
<1	7 (6.67)
1–5	71 (67.61)
6–10	19 (18.09)
>10	8 (7.62)
Following treatment	
<1	18 (17.14)
1–5	71 (67.61)
5–10	11 (10.48)
>10	5 (4.76)
Comorbidity	48 (45.71)
DM	27 (56.25)
Joint pain	9 (18.75)
Hyperthyroidism	8 (16.67)
Asthma	3 (6.25)
Tuberculosis	1 (2.08)
No	57 (54.29)
Previous instruction received	105 (100)
Other alternative treatment	
Ayurveda	11 (10.48)
Homeopathy	8 (7.62)

RESULTS

Frequency and Percentage Distribution of Socio demographic Variables of Study Participants

Table 1a shows that majority (69.52%) of the CVDs patients were female and half (50.47%) of them were in the age group

Table 2a: Frequency and percentage distribution of CVDs patients according to adherence to therapeutic regimen (exercise) *n*=105

Therapeutic regimen (exercise)	Yes (F & %)	No (F & %)
Performing exercise	51 (48.57)	54 (51.43)
Types of exercises performed (*n*=51)*		
Walking	44 (86.27)	
Jogging	7 (13.73)	
Cycling	4 (7.84)	
*Multiple response		
Number of days of walking in a week (*n*=44)		
Everyday	29 (65.91)	
Twice a week	1 (2.27)	
Thrice a week	14 (31.82)	
Number of minutes of walking in a day		
<30 min	12 (27.27)	
30 min	24 (54.55)	
45 min	8 (18.18)	
Number of days of jogging in a week (*n*=7)		
Everyday	1 (14.29)	
Thrice a week	4 (57.14)	
More than thrice a week	2 (28.57)	
Number of minutes of jogging in a day		
<30 min	3 (42.86)	
30 min	4 (57.14)	
Number of days of cycling in a week (*n*=4)		
Everyday	2 (50)	
Thrice a week	2 (50)	
Number of minutes of cycling in a day		
<30 min	2 (50)	
30 min	2 (50)	

*Precipitants gave more than one response

of 51–70 years. Half (58.09%) had no formal education, most (82.86%) of them were married, half (52.38%) were housewife, and majority (78.09%) of them were having monthly family income between 5000 and 10,000 rupees. Majority (69.52%) belonged to nuclear family, most (93.33%) were Hindu, and majority (67.61%) were non-vegetarian.

The participants gave multiple responses in personal habits, majority (69.52%) did not take any kind of addiction, 22 (20.95%) were presently smoking, out of 22, half 11 (50%) of the participants were smoking since past 1–10 years and 15 (68.18%) used cigarette 2–4 pieces/day. Out of 83, 22 (26.51%) of participants had the history of smoking in the past and 17.14% of them exposed to the second hand smoking.

24 (22.86%) of the participants were presently drinking alcohol, out of 24, approximately half 10 (41.67%) of the participants were drinking alcohol since past 1–10 years and majority 18 (75%) consumed alcohol 1–3 times/week. Out of 81, 10 (12.35%) of them had the history of drinking alcohol in the past.

13 (12.38%) of the participants were presently using tobacco, out of 13, majority 10 (76.92%) of the participants were using tobacco since past <1–10 years and majority 11 (84.61%) chew tobacco 1–3 times/day. Out of 92, 5 (5.43%) of them had the history of using tobacco in the past.

Table 2b: Frequency and percentage distribution of CVDs patients according to adherence to therapeutic regimen (diet) *n*=105

Therapeutic regimen (diet)	Yes F & %	No F & %
Number of times eating meal in a day		
2 times	25 (23.81)	
3 times	80 (76.19)	
Eat snacks or junk food in between diet	29 (27.62)	76 (72.38)
Routinely uses butter or ghee for cooking	38 (36.19)	67 (63.81)
Takes extra butter or ghee in diet	11 (10.48)	94 (89.52)
Kind of oil used in cooking food*		
Refine oil	31 (29.5)	
Mustard oil	79 (75.23)	
*Multiple response		
Drink coffee or tea	101 (96.19)	4 (3.81)
Restricts the salt in diet	83 (79.05)	22 (20.95)
Eats salty foods such as pickle, papad, and chutney along with food	68 (64.76)	37 (35.24)
Types of meat consumed by non-vegetarian (*n*=71)*		
Chicken	52 (73.2)	
Fish	19 (26.8)	
Mutton	7 (9.86)	
*Multiple response		
Eating fried foods such as paratha, puri, and pakorie	56 (53.33)	49 (46.67)

Frequency and Percentage Distribution of Clinical Profile of Study Participants

Table 1b shows that most (90.5%) of the CVDs patients were diagnosed with hypertension, more than half (67.61%) were suffering since 1 year–5 years, more than half (67.61%) of them were taking treatment since 1 year–5 years, 60.42% had diabetes, 20.83% had joint pain, and 16.67% had hyperthyroidism as co morbidity. 100% of the participants received previous information regarding therapeutic management from health professional, 10.48% of the participants were taking Ayurvedic medicine as an alternative treatment.

Frequency and Percentage Distribution of CVDs Patients According to Adherence to Therapeutic Regimen (Exercise)

Table 2a shows that approximately half 51 (48.57%) of the CVDs patients performed exercises. The participants gave multiple responses in type of exercise they performed, out of 51, participants 44 (86.27%) performed walking, 7 (13.73%) jogging and 4 (7.84%) cycling as exercise, out of 44 participants, 29 (65.91%) performed walking every day and half 24 (54.55%) performed walking 30 min in a

Table 2c: Frequency and percentage distribution of CVDs patients according to adherence to therapeutic regimen (medication, follow-up, and stress management) *n*=105

Therapeutic regimen (medication, follow-up, and stress management)	Yes F & %	No F & %
Taking medicine regularly	53 (50.5)	52 (49.5)
Regular follow-up	87 (82.86)	18 (17.14)
Practiced stress management technique	73 (69.52)	32 (30.48)
Measures for relieving stress (*n*=73)		
Meditation	9 (12.33)	
Yoga	7 (9.59)	
Deep breathing	13 (17.81)	
Cry	22 (30.14)	
Television	11 (15.07)	
Other	11 (15.07)	
Reasons for stress*		
Workload in job area	2 (1.90)	
Family problem	80 (76.2)	
Money problem	19 (18.1)	
Unexpected disease outcome	8 (7.62)	
*Multiple response		

*Precipitants gave more than one response

Table 2d: Comparison of CVDs patients according to adherence and non-adherence to therapeutic regimen *n*=105

Therapeutic regimen	Frequency (%)	
	Adherence	Non-adherence
Performing exercise	51 (48.57)	54 (51.43)
Restricting salt in diet	83 (79.05)	22 (20.95)
Taking medicine regularly	53 (50.5)	52 (49.5)
Visiting health-care facility for regular follow-up	87 (82.86)	18 (17.14)
Practicing stress management technique	73 (69.52)	32 (30.48)

Table 3: Frequency and percentage distribution of CVDs patients according to factors contributing adherence to therapeutic regimen *n*=105

Therapeutic regimen	Factors contributing adherence	Frequency (%)
Exercises (walking, jogging, and cycling)*		
Motivation for doing exercise (*n*=51)		
Multiple response	Health professional	30 (58.82)
	Family member	18 (35.29)
	Friends	7 (12.07)
Regular follow-up (*n*=87)	Health professional	42 (48.28)
	Family members	34 (39.08)
	Friends	11 (12.64)

*Precipitants gave more than one response

day. Out of 7 participants, approximately half 4 (57.14%) performed jogging thrice a week and 4 (57.14%) of the participant performed jogging 30 min in a day. Out of 4 participants, half 2 (50%) performed cycling everyday and 2 (50%) performed thrice a week, and half 2 (50%) performed cycling <30 min and half 2 (50%) performed 30 min in a day.

Frequency and Percentage Distribution of CVDs Patients According to Adherence to Therapeutic Regimen (Diet)

Table 2b shows that majority (76.19%) of the CVDs patients ate meal 3 times a day, majority (72.38%) of them eat healthy food, one-third (36.19%) used butter or ghee for routine cooking, 10.48% take extra butter or ghee in diet, participants gave multiple responses in kind of oil they used in cooking food, but majority (75.23%) of them used mustard oil in cooking food, most (96.19%) drink tea or coffee, majority (79.05%) restricted salt in their diet, 64.76% eat salty food along with food ones in a week, out of 71 participants, majority 52 (73.2%) eat chicken, participants gave multiple responses in types of meat they consumed and half (53.33%) eat fried food.

Table 4: Frequency and percentage distribution of CVDs patients according to factors contributing non-adherence to therapeutic regimen *n*=105

Factors contributing non-adherence	Frequency (%)
Not performing exercise (*n*=54)	
Busy	35 (64.81)
Bone and Joint pain	11 (20.37)
Do not know	3 (5.56)
Lazy	2 (3.70)
Weakness	1 (1.85)
Breathing problem	1 (1.85)
Do not want	1 (1.85)
Not restricting salt in diet (*n*=22)	
No taste without salt	21 (95.45)
Do not know to restrict salt	1 (4.55)
Not going for regular follow-up (*n*=18)	
Busy	8 (44.44)
Money problem	7 (38.89)
Health-care facility is far	3 (16.67)
Not taking regular medication (*n*=52)	
Forgetfulness	17 (32.69)
Money problem	24 (46.15)
Do not want to take	8 (15.38)
Busy	4 (7.69)

Frequency and Percentage Distribution of CVDs Patients According to Adherence to Therapeutic Regimen (Medication, Follow-up, and Stress Management)

Table 2c illustrates that half 50.5% of the CVDs patients were taking medicine regularly, majority (82.86%) of them visited health-care facility for regular follow-up, majority 73 (69.52%) of them practiced stress management technique, out of 73 participants, 22 (30.14%) of them cry to relieve stress, 13 (17.81%) of them practiced deep breathing technique to relieved stress, participants gave multiple responses about the reason for stress, but majority 80 (76.2%) of them had stress due of family problem.

Comparison of CVDs Patients According to Adherence and Non-adherence to Therapeutic Regimen

Table 2d illustrates that approximately half 48.57% of the CVDs patients performed exercise, whereas 51.43% did not, majority 79.05% restricted salt in diet, whereas 20.95% did not, half 50.5% of the participants had medicine regularly, whereas 49.5% of the them did not, majority 82.86% visited health-care facility for regular follow-up, whereas 17.14% did not, and 69.52% practiced stress management technique, whereas 30.48% did not.

Table 5a: Analysis of association between adherence to therapeutic regimen (exercise) and selected sociodemographic variables *n*=105

Variables	Df	Exercise		χ^2 value	*P* value
		Yes *n*=51	No *n*=54		
Gender					
Male	1	21	11	5.36	0.02*
Female		30	43		
Age (years)					
30–50	1	21	31	2.76	0.10
51–70		30	23		
Educational qualification					
No formal education	1	25	36	3.36	0.05
Formal education		26	18		
Marital status					
With husband	1	43	44	0.15	0.50
Separated		8	10		
Occupation					
Working	1	26	24	0.45	0.50
Non-working		25	30		
Type of family					
Nuclear	1	34	39	0.38	0.50
Joint		17	15		
Dietary pattern					
Vegetarian	1	15	11	1.15	0.50
Non-vegetarian		36	43		

df=1, $P<0.05$, $\chi^2=3.84$ *significant

Frequency and Percentage Distribution of CVDs Patients According to Factors Contributing Adherence to Therapeutic Regimen

Table 3 shows that out of 51 CVDs patients, 30 (58.82%) were given motivation for doing exercises by health professional and 18 (35.29%) by family members. In this, the participants gave multiple responses. Out of 87 participants, 42 (48.28%) were given motivation by the health professional to visit health-care facility for regular follow-up and 34 (39.08%) by family members.

Frequency and Percentage Distribution of CVDs Patients According to Factors Contributing Non-adherence to Therapeutic Regimen

Table 4 shows that out of 54 CVDs patients, majority 35 (64.81%) and 11 (20.37%) did not performed exercise because they were busy and had bone and joint pain. Out of 22, majority 21 (95.45%) did not restrict salt in diet due to tasteless without salt. Out of 18 participants, 8 (44.44%) did not visit to health-care facility for regular follow-up because they were busy and 7 (38.89%) had money problem. Out of 52 participants, 24 (46.15%) were not able to take medicine regularly due to money problem and 17 (32.69%) due to forgetfulness.

Association between Adherence to Therapeutic Regimen and Selected Socio demographic Variables of Patients with CVDs

Table 5a-e finding of the study illustrates that there was significant association between exercise performed and gender. There was significant association between salt restriction and gender. There was significant association between adherence to medication and educational qualification. There was no significant association between follow-up and selected socio demographic variables. There was significant association between stress management technique and age.

DISCUSSION

Adherence to Therapeutic Regimen (Exercise)

Finding of the study showed that approximately half 51 (48.57%) of the participants performed exercises. Finding of the study was consistent with the study conducted by Ibrahim. Results showed that only 29 (20.1%) of the patients admitted adherence to regular exercise 30 min per day for at least 5 days per week.[12] Study conducted by Heydari *et al.* showed that 61% of the participants were poor adherence to physical activity.[13]

Table 5b: Analysis of association between adherence to therapeutic regimen (diet) and selected sociodemographic variables *n*=105

Variables	df	Restrict salt		χ^2 value	*P* value
		Yes *n*=83	No *n*=22		
Gender					
Male	1	21	11	5.007	0.02*
Female		62	11		
Age (years)					
30–50	1	38	14	2.22	0.10
51–70		45	8		
Educational qualification					
No formal education	1	46	15	1.16	0.50
Formal education		37	7		
Marital status					
With husband	1	66	21	2.089#	0.148
Separated		17	1		
Occupation					
Working	1	36	14	2.86	0.10
Non-working		47	8		
Type of family					
Nuclear	1	56	17	0.789	0.50
Joint		27	5		
Dietary pattern					
Vegetarian	1	23	3	1.171#	0.50
Non-vegetarian		60	19		

χ^2=3.84, *P*<0.05, df=1 #Yates correction, *significant

Adherence to Therapeutic Regimen (Diet)

Finding of the study showed majority 79.05% restricted salt in their diet, 64.76% ate salty food ones in a week, out of 71, majority 52 (73.2%) ate chicken.

A study conducted by Devi *et al*. showed that 32.58% were consuming chicken and fish, 47% of the subjects consume more salty foods, and 60.2% of the subject restricted salt in their diet.[14] A study conducted by Ibrahim revealed that only 17 (11.8%) patients which were poor adherence to a healthy hypertensive diet.[12]

Adherence to Therapeutic Regimen (Medication, Follow-up, and Stress management)

Finding of the study showed that half (50.5%) of the participants were taking medicine regularly.

A study conducted by Kabir *et al*. results showed that good compliance with drug treatment was observed in 54.2% of the respondents.[15] Another study by Ibrahim showed that 50 (34.7%) were adherence to medications.[12] A study by Heydari *et al*. (2014) results showed that 79% were good medication adherence.[13]

Factors Contributing Adherence to Therapeutic Regimen

Finding of the study showed that out of 51 CVDs patients approximately half 30 (58.82%) were motivated for doing exercise by health professional. Out of 87 participants, 42 (48.28%) were motivated to visit health-care facility for regular follow-up by the health professional and 11 (12.64%) by friends, respectively.

A study conducted by Pauline and Owumi showed that only 51% of the subjects reported high compliance. Factors associated with high self-reported compliance included regular clinic attendance and social support from family members or friends.[16]

Factors Contributing Non-adherence to Therapeutic Regimen

Finding of the study showed that out of 54 CVDs patients 35 (64.81%) did not perform exercise because they were busy, out of 18 participants, 8 (44.44%) did not visit to health-care facility for regular follow-up because they were busy. Out of 52 participants, 35 (47.95%) were not taking medicine regularly because they had no money to buy medicine.

Table 5c: Analysis of association between adherence to therapeutic regimen (medication) and selected sociodemographic variables *n*=105

Variables	df	Medication		χ^2 value	*P* value
		Yes *n*=53	No *n*=52		
Gender					
Male	1	16	16	1.004	0.94
Female		37	36		
Age (years)					
30–50	1	25	27	0.237	0.62
51–70χ		28	25		
Educational qualification					
No formal education	1	38	23	8.13	0.004*
Formal education		15	29		
Marital status					
With husband	1	42	45	0.98	0.321
Separated		11	7		
Occupation					
Working		36	14	0.276	0.10
Non-working	1	37	18		
Type of family					
Nuclear	1	51	22	0.013	0.50
joint		22	10		
Dietary pattern					
Vegetarian	1	19	7	0.21	0.50
Non-vegetarian		54	25		

χ^2=3.84, df=1, *P*<0.05 *significant

Finding of the present study was consistent with the study conducted by Pauline and Owumi results showed that noncompliant to therapeutic regimen is due to factors such as forgetfulness (8.4%), lack of funds to purchase drugs (6.8%), and having a busy schedule (3.6%).[16] The study conducted by Ibrahim results showed that noncompliant to therapeutic regimen is due to lack of motivation (21.2%), difficulty in preparing a specific diet (28.3%), and 20.0% stated that lack of knowledge regarding exercise.[17]

Association between Adherence to Therapeutic Regimen and Selected Socio demographic Variables of Patients with CVDs

Finding of the study illustrates that there was a significant association between therapeutic regimen and socio demographic variable, i.e., gender, age, and educational qualification.

Finding of the study was consistent with the study conducted by Ibrahim showed that there was significant association found between monthly income and therapeutic regimen, i.e., diet and exercise.[12] The study by Pauline and Owumi showed that there was a significant association between education and therapeutic regimen.[16]

Strength and Limitations of this Study

- Investigator went door-to-door to identify the CVD patients in the selected community.
- Adherence to medical regimen is very important to prevent complications related to cardiovascular disease; therefore, this study is significant.
- Study conducted in selected community area with small sample size limits the generalization.
- Adherence to therapeutic regimen was assessed by self-report of patients and not directly observed by investigator.
- Researcher did not find any written instruction with study participants regarding therapeutic regimen for management of CVDs except for medication.

CONCLUSION

The most common cardiovascular disease prevalent in the selected community was hypertension. Majority of the CVD patient's restricted salt in their diet, went for regular follow-up, and practiced stress management technique. Approximately half of the CVD patients performed exercise. Half of the CVD patients adhered to medication prescribed by physician.

Table 5d: Analysis of association between adherence to therapeutic regimen (follow-up) and selected sociodemographic variables *n*=105

Variables	Df	Follow-up		χ^2 value	*P* value
		Yes *n*=87	No *n*=18		
Gender					
Male	1	26	6	0.084	0.50
Female		61	12		
Age (years)					
30–50	1	43	9	0.0019	0.50
51–70		44	9		
Educational qualification					
No formal education	1	48	13	1.78	0.50
Formal education		39	5		
Marital status					
With husband	1	72	15	0.003#	0.50
Separated		15	3		
Occupation					
Working	1	42	8	0.087	0.50
Non-working		45	10		
Type of family					
Nuclear	1	60	13	0.075	0.50
Joint		27	5		
Dietary pattern					
Vegetarian	1	23	3	0.330#	0.50
Non-vegetarian		64	15		

#Yates correction χ^2=3.84, df=1, *P*<0.05

Table 5e: Analysis of association between adherence to therapeutic regimen (stress management technique) and selected sociodemographic variables *n*=105

Variables	Df	Stress management technique		χ^2 value	*P* value
		Yes *n*=73	No *n*=32		
Gender					
Male	1	20	12	1.072	0.50
Female		53	20		
Age (years)					
30–50	1	42	10	6.149	0.01*
51–70		31	22		
Educational qualification				3.59	006
No formal education	1	38	23		
Formal education		35	9		
Marital status					
With husband	1	63	24	1.88	0.50
Separated		10	8		
Occupation					
Working	1	27	23	0.474	0.56
Non-working		26	29		
Type of family					
Nuclear	1	35	38	0.614	0.433
joint		18	14		
Dietary pattern					
Vegetarian	1	14	12	0.157	0.69
Non-vegetarian		39	40		

χ^2=3.84, df=1, *P*<0.05 *significant

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How to cite this article: Devi LK, Prakash K, Chauhan V. Adherence to therapeutic regimen among patients with cardiovascular diseases in selected community area Dehradun, Uttarakhand. Int J Med Sci Public Health 2018;7:519-528.

Source of Support: Nil, Conflict of Interest: None declared.