Research article

Comparative study of perceived learning needs of convalescent patients after heart failure with that of nurses' perception in selected hospitals of Mumbai

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Abstract

Heart failure (HF) is a cardiovascular disease of cardinal importance because of several factors: a) an increasing occurrence due to the aging of the population, primary and secondary prevention of cardiovascular events, and modern advances in therapy, b) a bad prognosis: around 65% of patients die within 5 years of diagnosis, c) a high economic cost: HF accounts for 1% to 2% of total health care expenditure. **Aim:** To compare the perceived learning needs of convalescent patients after heart failure with that of nurses' perceptions. **Methods:** A total no. of 80 participants, which included forty convalescent patients after heart failure and forty staff nurses working in medical wards of the municipal hospital were taken as sample by non-probability purposive sampling. A non– experimental comparative design was used. Structured interview schedule for patients and nurses were used that included age, gender, educational status, marital status, occupation, years of registration, total experience of the nurse, experience in medical wards and attendance to any refresher courses. **Results:** The perceptions regarding the learning needs of convalescent patients after heart failure and staff nurses need to be valued. The study's results have added to the nursing knowledge base that such patients and nurses continue to have medication information as top learning need. But the other learning needs do not match with the other rankings given by the nurses and patients.

Key words: Heart failure, convalescent patients, perceived learning, consequences of heart failure

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1. Introduction

Heart failure (HF) is the number one cause of death worldwide [1-3]. HF covers a wide array of disorders, including diseases of the cardiac muscle and of the vascular system supplying the heart, brain, and other vital organs. Heart disease is a common, costly, disabling and deadly condition [4]. In developing countries, around 2% of adults suffer from heart failure, but in those over the age of 65, this increases to 6–10% [4,5]. Mostly due to costs of hospitalization, it is associated with a high health expenditure; costs have been estimated to amount to 2% of the total budget of the National Health Service in the United Kingdom, and more than $35 billion in the United States [6,7]. Heart failure is associated with significantly reduced physical and mental health, resulting in a markedly decreased quality of life [8,9]. With the exception of heart failure caused by reversible conditions, the condition usually worsens with time. Although some patients survive many years, progressive disease is associated with an overall annual mortality rate of 10% [10].

Consequences of HF
Reduction of functional capacity

Functional capacity in HF patients is limited by shortness of breath and fatigue on exertion. A basic pathophysiology of these symptoms can be summarized in two points Fig. 1 [11]. When diastolic dysfunction is developed the failing heart requires a higher LV filling pressure to maintain output, particularly during exertion. The filling pressure of the LV can become high enough to cause stiff lungs or even transudation of fluid into the alveoli leading to breathlessness.

If systolic function is impaired, the failing heart may be unable to increase the stroke volume adequately in response to exercise. In turn, this leads to the inability to perfuse the exercising muscle effectively. The affected skeletal muscle signals the brain, and this sensation is interpreted as fatigue.

Heart failure is a common, costly, disabling and deadly condition. It is associated with high health expenditure and reduced physical and mental health, resulting in a significant decrease in the quality of life.

The re- hospitalisation rate is very high for patients with heart failure as compared to other chronic illnesses and 20-60% of hospital admissions of patients with heart failure are related to poor compliance with prescribed regimen [11].

Advanced heart disease like chronic illnesses, trouble the entire family. Even if many people recover, they may not regain their previous level of functioning. The people with heart failure may need help with daily chores like fixing food, getting dressed, running errands and housekeeping. At some point the helper and caregivers often become involved in providing health care support such as managing medication and coordinating physician visits [12,13].

Thus, heart failure is a disease where the patients have to live with its burden and requires a change in their lifestyle and the patients also need to be educated. Health care providers play a vital role in catering to the health needs of patients with heart failure.
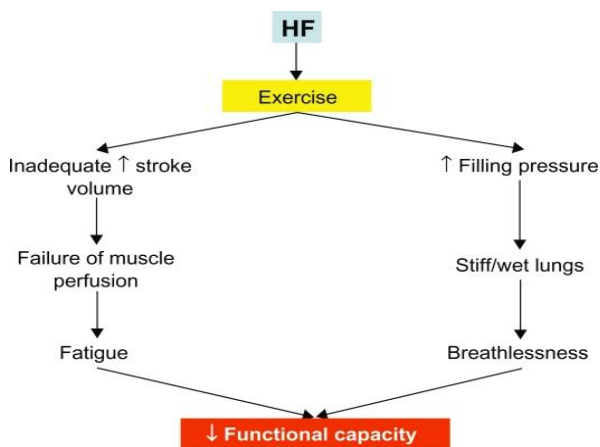

Fig 1: Pathophysiology of symptoms in heart failure.

Statement of problem

"Comparative study of perceived learning needs of convalescent patients after heart failure with that of nurses' perception in selected hospitals of Mumbai".

Aim and objectives

1. To assess the perceived learning needs of convalescent patients after heart failure.

2. To assess the learning needs of convalescent patients after heart failure as perceived by nurses.
3. To relate the perceived learning needs of patients to their selected demographic variables of age, gender, education, and occupation.
4. To relate the perceived learning needs of patients as perceived by nurses to their (nurses') selected demographic variables of age, gender, education, years of experience.
5. To compare the perceived learning needs of convalescent patients after heart failure with that of the nurses.

Hypothesis

H_{01}: There is no significant relationship between the perceived learning needs of patients and their selected demographic variables of age, gender, education, and occupation.

H_{02}: There is no significant relationship between the perceived learning needs of patients as perceived by nurses and their (nurses') selected demographic variables of age, gender, education, years of experience.

H_{03}: There is no significant relationship between the perceived learning needs of convalescent patients after heart failure with that of the nurses

Delimitation

1. The study is concerned only with the perception of learning needs and not the actual performance level.
2. Needs of the patients keep on changing from time to time, hence the study will be carried out on the patients admitted with heart failure, patients prior to discharge and those who come for follow up.

Variables

The variables included in the present study are:

1. Independent variable
   In this study, patients and nurses are the independent variable.
2. Dependent variable
   In this study perceived learning needs of patients with heart failure is the dependent variable

Inclusion criteria:

Patients

1. Patients diagnosed with heart failure in the convalescent phase.
2. Patients admitted in the medical wards.
3. Patients within two days of intended discharge.
4. Patients diagnosed with heart failure in convalescent phase that have come for the follow up in the out -patient department.

5. Patients who are willing to participate in the study.
6. Patients who are conversant in any of the three languages namely English, Marathi and/or Hindi.

Nurses

1. Nurses who are employed in the hospital and have at least six months of experience in medical wards after their training.
2. Nurses who agree to participate in the study.

Exclusion criteria:

Patients

1. Patients who are in acute phase of heart failure.
2. Patients who are not able to converse in English, Marathi and/or Hindi.

Nurses

1. Nurses who have less than six months experience after their training.
2. Nurses who are working in outpatient department, operation theatre, surgical wards and intensive care unit

2. Material and methods:

A total no. of 80 participants, which included forty convalescent patients after heart failure and forty staff nurses working in medical wards of the municipal hospital were taken as sample by non-probability purposive sampling. A non–experimental comparative design was used. The study was conducted in a large municipal hospital. The tools used for the study was a Structured Interview Schedule for demographic data and a Modified Cardiac Learning Needs Inventory (CPLNI).
The Patients Learning Needs Inventory (PLNI) scale is designed to measure patients' perceptions of the learning needs to manage their health care at home at the time of discharge from hospital. Patients learning needs results can help health professionals focus the scope and content of educational interventions, especially because acutely ill individuals have neither the physiological stability nor the cognitive energy to learn about care at home until near the time of discharge [14,15].
Content validity of the tool was established by obtaining the suggestions from the experts. The tool was given to experts from the field of cardiology, cardiovascular nursing, medical surgical nursing and psychology. Many of their suggestions were incorporated in modifying the tool. The tool was further modified as per the suggestions and recommendations of the experts and then the final tool was constructed. Certain items were retained and some additions were done as per the suggestions [16].

The reliability of the tool was measured by coefficient alpha or Cronbach's alpha [16].

As the tool contained summing the item scores, the internal consistency was measured by coefficient alpha or Cronbach's alpha. An administrative approval was obtained from the concerned authority prior to the study [16].

3. Results:

Section I

Description of demographic data

This section deals with demographic data of patients and nurses analyzed in terms of frequency and percentage.

(IA): Demographic data of patients analyzed in terms of frequency and percentage
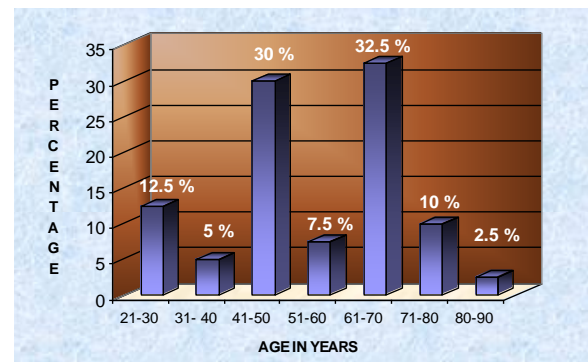
1. Age

Fig 2 Distribution of sample in relation to their age

The Figure 1 describes that the mean age of the convalescent patients after heart failure sample was 54.17 years (minimum = 22 years, maximum = 81 years) it was noted that majority of the sample i.e. 32.5 % belonged to the age group of 61-70 years.
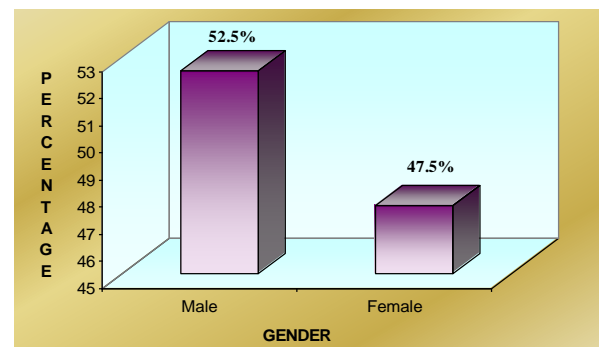
2. Gender

Fig 3 Distribution of sample (patients) in relation to their gender

Figure 3 shows that the sample comprised of 21 (52.5%) males and 19 (47.5%) females.
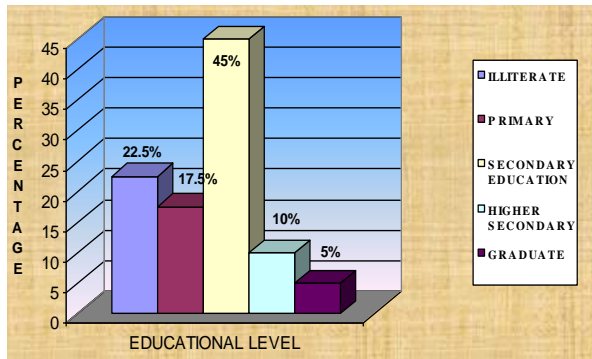
3. Education

Fig 4 Distribution of sample in relation to their education

Figure 4 depicts that 45.0% of the sample was having secondary education and illiterate sample was 22.5%. 17.5% had studied up to primary level, 10.0% up to higher secondary and only 5% of them had studied up to graduation.

3. Marital status

Table No 1: Distribution of sample (patients) in relation to their marital status

n=40

Demographic Variable	Particulars	Frequency	%
Marital Status	Single	1	2.5
	Married	31	77.5
	Widowed	8	20.0

The above Table 1 shows that majority of the sample i.e. 77.5% were married, 20% were widowed, and only 2.5% were single.

4. Occupation

Table No 2: Distribution of sample (patients) in relation to their occupation

n=40

Demographic Variable	Particulars	Frequency	%
Occupation	Private Service	4	10.0
	Government Service	5	12.5
	Business	5	12.5
	Housewife	13	32.5
	Retired	10	25.0
	Unemployed due to illness	3	7.5

From the above table 2 it can be seen that 32.5% were housewives and an equal number was either retired or had left work due to illness. Each 12.5% of the sample was engaged in either government service or having business and 10% were in private service.

(IB): Demographic data of nurses analyzed in terms of frequency and percentage.

1. Age
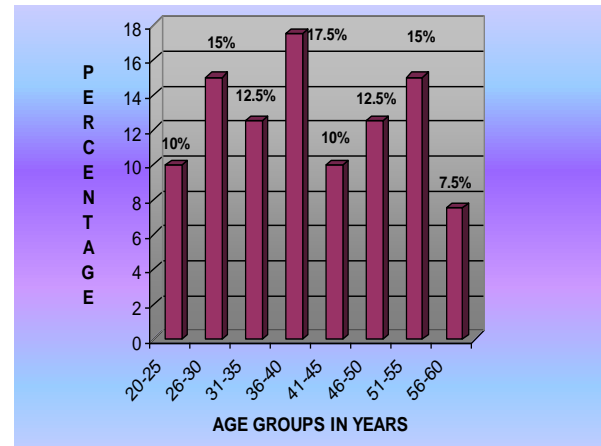
Fig 5 Distribution of sample (nurses) in relation to their age

Figure 5 it can be seen that the mean age of the nurse participants was 40.27 years (minimum age = 24, maximum age = 57). It was noted that majority of the sample i.e. 17.5 % belonged to the age group of 36-40 years.
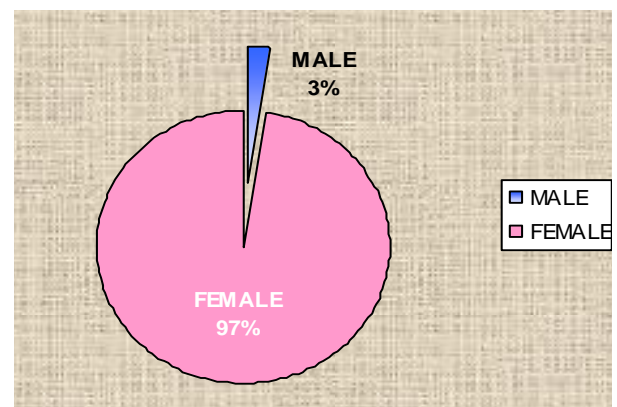
2. Gender

Fig 6 Distribution of sample (nurses) in relation to their gender

Figure 6 shows that the sample comprised maximum of females viz., 39 (97%) and 1 (3 %) male.

3. Professional education

Table No 3: Distribution of sample (nurses) in relation to their Professional education

n=40

Demographic Variable	Particulars	Frequency	%
Professional Qualification	G.N.M.	39	97.5
	P.B.BSc.	1	2.5

From the above Table 3 it is seen that majority of the nurses i.e. 97.5 % were professionally qualified up to General Nursing and Midwifery (G.N.M.) and only 2.5% were qualified up to Post Basic B.Sc. Nursing (PBBSc).
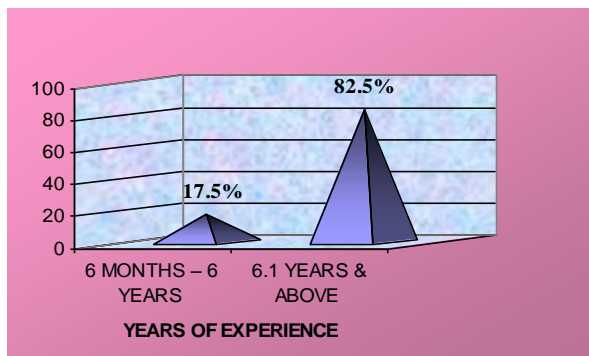
4. Experience

Fig 7 Distribution of sample (nurses) in relation to their experience

Figure 7 depicts that 82.5 % of the nurses had an experience of above 6 years, and 17.5% had experience of 6 months - 6 years.
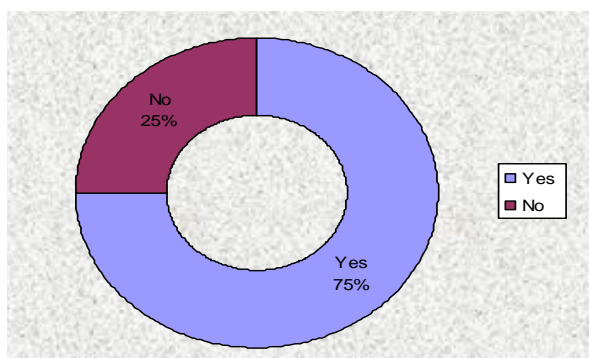
5. Exposure to refresher course

Fig 8 Distribution of sample (nurses) in relation to their exposure to refresher course/s

Figure 8, it can be seen that 75 % of the samples have been exposed to refresher courses as in-service education during their experience.

Section II

Perceived learning needs of convalescent patients after heart failure

Table No 4: Descriptive statistics for patients

n = 40

MCPLNI S.S *	MEAN	S.D
Anatomy and physiology	3.2500	1.597
Heart failure	3.9107	0.1957
Risk factors	3.7125	1.1707
Psychological factors	3.4550	1.2390
Medication information	4.0125	1.0187
Diet information	3.8167	1.02438
Physical activity	3.6250	1.1827
Other information	3.9643	0.9929

Note. * MCPLNI S.S = modified cardiac patient learning needs inventory subscales.

The above Table 4 describes the perceptions of convalescent patients after heart failure regarding their learning needs which were explored using descriptive statistics (i.e., mean and standard deviation).

Section III

Learning needs of the convalescent patients after heart failure as perceived by nurses

Table No 5: Descriptive statistics for nurses

n=40

Mcplni S.S *	Mean	S.D
Anatomy and physiology	3.8000	1.2649
Heart failure	4.2038	0.8545
Risk factors	4.0313	0.8032
Psychological factors	4.0100	0.8326
Medication information	4.3250	0.8443
Diet information	4.1083	0.8668
Physical activity	3.9450	0.7672
Other information	4.1214	0.7260

Note. MCPLNI S.S * = modified cardiac patient learning needs inventory subscales.

The above Table 5 depicts that the nurses' perceptions of learning needs of convalescent patients after heart

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failure were explored using descriptive statistics (i.e., mean and standard deviation).

Section IV

(IV A) Relation of perceived learning needs of convalescent patients after heart failure with their selected demographic variables –

- Age
- Gender
- Education
- Occupation

According to the objective of this study, the relation of perceived learning needs of convalescent patients after heart failure with their selected demographic variables was obtained with the one-way Analysis of Variance (ANOVA) by computing the F-ratio.

(IV a) Relation of perceived learning needs of convalescent patients after heart failure with their age

Table No 6: Analysis of Variance (ANOVA) for variables of MCPLNI by age for patients

n=40

MCPLNI S.S	d.f	F–value	P-value	Result
Anatomy and physiology	39	0.948	0.478	Not Significant
Heart failure	39	1.567	0.188	Not Significant
Risk factors	39	0.836	0.551	Not Significant
Psychological factors	39	0.747	0.616	Not Significant
Medication information	39	0.697	0.674	Not Significant
MCPLNI S.S	d.f	F – value	P - value	Result
Diet information	39	0.941	0.479	Not Significant
Physical activity	39	1.165	0.348	Not Significant
Other information	39	1.504	0.204	Not Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 2.78)

From the above Table 6, it is noted that the calculated f-value was less than tabulated value of 2.78 at 0.05 level of significance at degrees of freedom of 39.

(IV B) Relation of perceived learning needs of convalescent patients after heart failure with their gender

Table No 7: Analysis Of Variance (ANOVA) for variables of MCPLNI by gender for patients

n=40

MCPLNI S.S	d.f	F- value	P- value	Result
Anatomy and physiology	39	1.309	0.260	Not Significant
Heart failure	39	1.178	0.285	Not Significant
Risk factors	39	1.089	0.303	Not Significant
Psychological factors	39	1.557	0.220	Not Significant
Medication information	39	0.073	0.765	Not Significant
Diet information	39	1.347	0.369	Not Significant
Physical activity	39	1.348	0.392	Not Significant
Other information	39	1.241	0.347	Not Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 2.78)

The above table 7 shows that the calculated f-value was less than tabulated value of 2.78 at 0.05 level of significance at degrees of freedom of 39

(IV C) Relation of perceived learning needs of convalescent patients after heart failure with their education

Table No 8: Analysis of Variance (ANOVA) for variables of MCPLNI by education for patients

n=40

MCPLNI S.S	d.f	F- value	P- value	Result
Anatomy and physiology	39	6.129	0.001	Significant
Heart failure	39	4.972	0.003	Significant
Risk factors	39	5.637	0.001	Significant
Psychological factors	39	5.806	0.001	Significant
Medication information	39	3.626	0.031	Significant
Diet information	39	5.270	0.002	Significant
Physical activity	39	1.713	0.169	Not Significant
Other information	39	5.177	0.002	Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 2.78)

The above Table 8 shows that the calculated f-value was more than tabulated value of 2.78 at 0.05 level of significance at degrees of freedom of 39, except for the sub scale of physical activity.

(IV D) Relation of perceived learning needs of convalescent patients after heart failure with their occupation

Table No 9: Analysis of Variance (ANOVA) for variables of MCPLNI by occupation for patients

n=40

MCPLNI S.S	d.f	F-value	P-value	Result
Anatomy and physiology	39	6.453	0.001	Significant
Heart failure	39	5.617	0.002	Significant
Risk factors	39	7.845	0.001	Significant
Psychological factors	39	7.342	0.001	Significant
Medication information	39	8.457	0.001	Significant
Diet information	39	8.945	0.001	Significant
Physical activity	39	6.231	0.001	Significant
Other information	39	9.124	0.000	Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 2.78)

The above Table 9 shows that, the calculated f-value was more than tabulated value of 2.78 at 0.05 level of significance at degrees of freedom 39 for all the eight subscales in the MCPLNI.

Section V

Relation of perceived learning needs of convalescent patients after heart failure as perceived by nurses with their selected demographic variables –

- Age
- Gender
- Education
- Years of experience

According to the objective of this study, the relation of perceived learning needs of convalescent patients after heart failure as perceived by nurses with their selected demographic variables listed above was obtained with the one-way Analysis of Variance (ANOVA).

(V A) Relation of perceived learning needs of patients as perceived by nurses with the age of nurses:

Table No. : 10 Analysis Of Variance (ANOVA) for variables of MCPLNI by age for nurses

n=40

MCPLNI S.S	d.f	F-value	P-value	Result
Anatomy and physiology	39	1.281	0.291	Not Significant
Heart failure	39	1.219	0.321	Not Significant
Risk factors	39	1.077	0.412	Not Significant
Psychological factors	39	2.326	0.257	Not Significant
Medication information	39	0.819	0.579	Not Significant
Diet information	39	1.149	0.359	Not Significant
Physical activity	39	0.592	0.758	Not Significant
Other information	39	1.553	0.185	Not Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 2.78)

The perceived learning needs of convalescent patients after heart failure as perceived by nurses according to the eight subscales in the MCPLNI was compared with the age groups of the nurses with the use of ANOVA (Analysis of variance). The above table 10 depicts that the calculated f-value was less than the tabulated value of 2.78 at degrees of freedom 39 at 0.05 level of significance

(V B) Relation of perceived learning needs of patients as perceived by nurses with their gender

Table No 11: Analysis of Variance (ANOVA) for variables of MCPLNI by gender for nurses

n=40

MCPLNI S.S	d.f	F-value	P–value	Result
Anatomy and physiology	39	0.921	0.343	Not Significant
Heart failure	39	1.581	0.216	Not Significant
Risk factors	39	1.089	0.303	Not Significant
Psychological factors	39	1.235	0.273	Not Significant
Medication information	39	0.739	0.395	Not Significant
Diet information	39	1.259	0.269	Not Significant
Physical activity	39	1.258	0.269	Not Significant
Other information	39	2.196	0.147	Not Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 2.78)

The perceived learning needs according to the eight subscales in the MCPLNI were compared with the gender of the nurses with the use of ANOVA (Analysis of variance) as shown in Table 11. The calculated f-value was found to be less than the tabulated value of 2.78 at degrees of freedom 39 at 0.05 level of significance.

(V C) Relation of perceived learning needs of patients as perceived by nurses with their education

Table No 12: Analysis of Variance (ANOVA) for variables of MCPLNI by education for nurses

n=40

MCPLNI S.S	d.f	F–value	P-value	Result
Anatomy and physiology	39	1.867	0.169	Not Significant
Heart failure	39	1.490	0.239	Not Significant
Risk factors	39	1.456	0.246	Not Significant
Psychological factors	39	0.630	0.538	Not Significant
Medication information	39	1.669	0.202	Not Significant
Diet information	39	1.546	0.280	Not Significant
Physical activity	39	0.694	0.506	Not Significant
Other information	39	1.071	0.353	Not Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 2.78)

The perceived learning needs according to the eight subscales in the MCPLNI was compared with the education of the nurses with the use of ANOVA (Analysis of variance). The above Table 12 shows that the calculated f-value was found to be less than the tabulated value of 2.78 at degrees of freedom 39 at 0.05 level of significance.

(V D) Relation of perceived learning needs of patients as perceived by nurses with their years of experience

Table No 13: Analysis of Variance (ANOVA) for variables of MCPLNI by years of experience for nurses

n=40

MCPLNI S.S	d.f	F-value	P-value	Result
Anatomy and physiology	39	3.867	0.001	Significant
Heart failure	39	1.844	0.172	Not Significant
Risk factors	39	4.342	0.001	Significant
Psychological factors	39	4.589	0.002	Significant
Medication information	39	5.452	0.000	Significant
Diet information	39	7.548	0.002	Significant
Physical activity	39	5.521	0.001	Significant
Other information	39	6.142	0.001	Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 2.78)

The perceived learning needs according to the eight subscales in the MCPLNI was compared with the years of experience of the nurses with the use of ANOVA (Analysis of variance). The table 13 depicts that the calculated f-value was found to be more than the tabulated value of 2.78 at degrees of freedom 39 at 0.05 level of significance except for the subscale of information on heart failure.

(V D i) Relation of perceived learning needs of patients as perceived by nurses with their years of experience in medical ward

Table No 14: Analysis of Variance (ANOVA) for variables of MCPLNI by experience in medical ward for nurses

n=40

Variables	d.f	F-value	P–value	Result
Anatomy and physiology	39	16.441	0.003	Significant
Heart failure	39	12.624	0.020	Significant
Risk factors	39	15.622	0.002	Significant
Psychological factors	39	18.852	0.002	Significant
Medication information	39	12.543	0.001	Significant
Diet information	39	21.562	0.000	Significant
Physical activity	39	20.863	0.000	Significant
Other information	39	18.852	0.002	Significant

(d.f = degrees of freedom, P < 0.05 = Significant, P > 0.05 = Not Significant, Tabulated Value = 2.78)

The above Table 14 shows the comparison of the perceived learning needs according to the eight subscales in the MCPLNI with the years of experience of the nurses in the medical wards by ANOVA (Analysis of variance). The calculated f-value was found to be more than the tabulated value of 2.78 at degrees of freedom 39 at 0.05 level of significance for all the subscales of MCPLNI.

(V D ii) Relation of perceived learning needs of patients as perceived by nurses with their exposure to refresher course/s

Table No 15: Analysis of Variance (ANOVA) for variables of MCPLNI by exposure to refresher course/s for nurses

n=40

MCPLNI S.S	d.f	F- value	P-value	Result
Anatomy and physiology	39	14.691	0.010	Significant
Heart failure	39	9.542	0.001	Significant
Risk factors	39	14.622	0.002	Significant
Psychological factors	39	16.432	0.000	Significant
Medication information	39	10.653	0.001	Significant
Diet information	39	19.745	0.000	Significant
Physical activity	39	18.7430	0.000	Significant
Other information	39	15.452	0.012	Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 2.78)

The above Table 15 depicts comparison of the perceived learning needs according to the eight subscales in the MCPLNI with the exposure of nurses to refresher courses with the use of ANOVA (Analysis of variance). The calculated f-value was found to be more than the tabulated value of 2.78 at 0.05 level of significance for all the eight subscales of MCPLNI. Thus, null hypothesis **(H$_{02}$)** - 'There is no significant relationship between the perceived learning needs of patients as perceived by nurses and their (nurses') selected demographic variable – years of experience' is rejected and thus, research hypothesis **(H$_1$)** is accepted.

Section VI: Comparison of the perceived learning needs of convalescent patients after heart failure with that of the nurses' perceptions

As per the objective, the comparison of the perceived learning needs of convalescent patients after heart failure with that of the nurses' perceptions was carried out with the help of paired t-test.

Table No 16: Paired 't' – test for variables of patients and nurses

n=40

MCPLNI S.S	d.f	t - value	P – value	Result
Anatomy and physiology	39	6.751	0.030	Significant
Heart failure	39	22.213	0.002	Significant
Risk factors	39	19.420	0.002	Significant
Psychological factors	39	16.821	0.001	Significant
Medication information	39	15.567	0.001	Significant
Diet information	39	21.842	0.001	Significant
Physical activity	39	19.624	0.002	Significant
Other information	39	20.458	0.003	Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 2.02)

Table 16 compares the perceived learning needs of convalescent patients after heart failure and that of the nurses by paired 't'-test. It was found that the calculated 't' value was more than table value (2.02) at 0.05 level of significance. The null hypothesis (H$_{03}$) stated as- 'There is no significant relationship between the perceived learning needs of convalescent patients after heart failure with that of the nurses' is rejected and thus, research hypothesis (H$_1$) is accepted.

Table No 17: Wilcoxon's– test for variables of patients and nurses

n=40

MCPLNI S.S	d.f	Z - value	P - value	Result
Anatomy and physiology	39	5.561	0.001	Significant
Heart failure	39	20.213	0.000	Significant
Risk factors	39	17.620	0.002	Significant
Psychological factors	39	15.821	0.001	Significant
Medication information	39	17.567	0.002	Significant
Diet information	39	23.842	0.001	Significant
Physical activity	39	18.624	0.002	Significant
Other information	39	21.458	0.001	Significant

(d.f = degrees of freedom; P < 0.05 = Significant; P > 0.05 = Not Significant; Tabulated Value = 1.96)

Table 17 shows findings of the Wilcoxon's test. It was found that the calculated 'z' value was more than the table value. The null hypothesis (H_{03}) stated as -- 'There is no significant relationship between the perceived learning needs of convalescent patients after heart failure with that of the nurses' is rejected and thus, research hypothesis (H_1) is accepted. It also proves that there is a significant difference between the patients and nurses' perceptions at $p < 0.05$ level.

4. Discussion

Section I: Description of Demographic Data

(IA): Demographic data of patients analyzed in terms of frequency and percentage

The mean age of the convalescent patients after heart failure sample was 54.17 years. It was noted that majority of the sample i.e. 32.5 % belonged to the age group of 61-70 years. The sample comprised of 21 (52.5%) males and 19 (47.5%) females. It was noted that 45% of the sample was having secondary education, 22.5% were illiterate, 17.5% had studied up to primary level, 10% up to higher secondary and only 5% of them had studied up to graduation. 32.5% of the sample was housewives and an equal sample was either retired or had left work due to illness. Each 12.5% of the sample was engaged in either government service or having business and 10% were in private service.

(IB): Demographic data of nurses analyzed in terms of frequency and percentage

The mean age of the nurse participants was 40.27 years. Majority of the sample i.e. 17.5% belonged to the age group of 36-40 years. 2.5 % of sample belonged to the 81-90 years age group. The sample comprised of 1 (3 %) male and 39 (97%) females. Majority, i.e. 97.5 % of the nurses were professionally qualified up to General Nursing and Midwifery and only 2.5% up to Post Basic B.Sc. Nursing. It was noted that 82.5 % of the nurses had an experience of above 6 years, and 17.5% had experience of 6 months - 6 years. It was seen that 75 % of the sample have been exposed to refresher courses as in-service education during their experience.

Section II: Perceived Learning Needs Of the Convalescent Patients after Heart Failure

The categories on the Modified Cardiac Patient's Learning Needs Inventory ranked in order of importance by the patients were medication information ($M = 4.01$, SD = 1.08), other information ($M = 3.96$, SD = 0.99), heart failure (Mean= 3.91, SD= 0.19), diet information ($M = 3.81$, SD = 1.02), risk factors ($M = 3.71$, SD = 1.17), physical activity ($M = 3.62$, SD = 1.18), psychological factors ($M = 3.45$, SD = 1.23) and anatomy and physiology ($M = 3.25$, SD= 1.59). The category ranked most important to learn was medication information. The three most important areas to learn were other information, information on heart failure and dietary information. The least important categories were psychological factors and anatomy and physiology.

Section III: Learning Needs Of The Convalescent Patients After Heart Failure As Perceived By Nurses

The categories on the Modified Cardiac Patient's Learning Needs Inventory ranked in order of importance by the nurses were medications ($M = 4.32$, SD = 0.84), heart failure ($M = 4.20$, SD = 0.85), other information ($M = 4.12$, SD = 0.72), diet information ($M = 4.10$, SD = 0.86), risk factors ($M = 4.03$, SD = 0.80), psychological factors ($M = 4.01$, SD = 0.83), physical activity ($M = 3.94$, SD = 0.76) and anatomy and physiology ($M = 3.80$, SD = 1.26). The category ranked most important as perceived by the nurses was medication information followed by information on heart failure. The three most important areas to learn were information on heart failure, other information and dietary information. The least important categories were physical activity and anatomy and physiology.

Section IV: Relation of Perceived Learning Needs of Convalescent Patients after Heart Failure with Their Selected Demographic Variables

According to the objective of studying the relation between the perceived learning needs of convalescent patients after heart failure with their demographic variables, it was obtained with the one-way Analysis of Variance (ANOVA).

(IV A) Relation of perceived learning needs of convalescent patients after heart failure with their age

It was found that the calculated f-value was less than tabulated value of 2.78 at 0.05 level of significance at degrees of freedom of 39 so, H_{01} was accepted. Thus, there was no statistically significant difference between the perceived learning needs of convalescent patients after heart failure across their age groups.

(IV B) Relation of perceived learning needs of convalescent patients after heart failure with their gender

It was found that the calculated f-value was less than tabulated value of 2.78 at 0.05 level of significance at

degrees of freedom of 39 so, H_{01} was accepted. Thus, there was no statistical significant difference found between the gender and the eight variables of Modified Cardiac Patients Learning Needs Inventory (MCPLNI) showing was no relationship between perceived learning needs of convalescent patients after heart failure with gender of the patients.

(IV C) Relation of perceived learning needs of convalescent patients after heart failure with their education

The calculated f-value was more than tabulated value of 2.78 at 0.05 level of significance at degrees of freedom of 39, except for the sub scale of physical activity. Thus, H_{01} was rejected and H_1 was accepted showing statistically significant difference between education and the perceived learning needs as on the MCPLNI subscales except for subscale of physical activity.

(IV D) Relation of perceived learning needs of convalescent patients after heart failure with their occupation

The calculated f-value was more than tabulated value of 2.78 at 0.05 level of significance at degrees of freedom 39 for all the eight subscales in the MCPLNI. Therefore, H_{01} was rejected and H_1 was accepted. Thus, there was a statistically significant relationship between the perceived learning needs of the convalescent patients after heart failure in relation of their occupation for the all the eight MCPLNI subscales.

To summarize, H_{01} (null hypothesis), stated that there was no significant relationship between the perceived learning needs of patients and their selected demographic variables of age, gender, education, and occupation was tested with ANOVA. It was seen that H_{01} (null hypothesis) was accepted for age and gender as it showed no significant difference between the perceived learning needs of convalescent patients after heart failure. Whereas H_{01} (null hypothesis) was rejected as there was a significant difference between perceived learning needs of convalescent patients after heart failure in relation to education of the patients for all the subscales except for physical activity and in relation to their occupation for all the eight MCPLNI subscales.

Section V: Relation of Perceived Learning Needs Of Convalescent Patients After Heart Failure As Perceived By Nurses With Their Selected Demographic Variables

According to the objective of studying the relation between the perceived learning needs of convalescent patients after heart failure as perceived by nurses with their demographic variables, it was obtained with the one-way Analysis of Variance (ANOVA).

(V A) Relation of perceived learning needs of patients as perceived by nurses with their age

The calculated f-value was found to be less than the tabulated value of 2.78 at degrees of freedom 39 at 0.05 level of significance. Therefore, H_{02} was accepted. It showed that there was no statistically significant difference between the eight subscales on MPCLNI and the age of the nurses showing no relationship between the same.

(V B) Relation of perceived learning needs of patients as perceived by nurses with their gender

The calculated f-value was found to be less than the tabulated value of 2.78 at degrees of freedom 39 at 0.05 level of significance. Therefore, H_{02} was accepted showing statistically no significant difference between the eight subscales on MPCLNI and the gender of the nurses. Thus, no relation was found between the perceived learning needs of patients as perceived by nurses with their gender.

(V C) Relation of perceived learning needs of patients as perceived by nurses with their education

The calculated f-value was found to be less than the tabulated value of 2.78 at degrees of freedom 39 at 0.05 level of significance. Therefore, H_{02} was accepted. It showed that there was no statistically significant difference between the subscales and professional education of the nurses. Thus, it showed no relation of perceived learning needs of patients as perceived by nurses with their education.

(V D) Relation of perceived learning needs of patients as perceived by nurses with their years of experience

The calculated f-value was more than tabulated value of 2.78 at degrees of freedom 39 at 0.05 level of significance except for the subscale of information on heart failure. Therefore, H_{02} was rejected and H_1 was accepted. This showed a statistically significant difference between the perceived learning needs of the convalescent patients after heart failure as perceived by nurses in relation of their years of experience for all the MCPLNI subscales except for information on 'heart failure'.

(V D i) Relation of perceived learning needs of patients as perceived by nurses with their years of experience in medical ward

The calculated f-value was found to be more than the tabulated value of 2.78 at degrees of freedom 39 at

0.05 level of significance for all the subscales of MCPLNI. Thus, H_{02} was rejected and H_1 was accepted. This showed a statistically significant relation between the perceived learning needs of convalescent patients after heart failure as perceived by the nurses according to their years of experience in the medical ward for all the eight subscales of MCPLNI.

(V D ii) Relation of perceived learning needs of patients as perceived by nurses with their exposure to refresher course/s

The calculated f-value was found to be more than the tabulated value of 2.78 at 0.05 level of significance for all the eight subscales of MCPLNI. Therefore, H_{02} was rejected and H_1 was accepted.

This showed a statistically significant difference between the perceived learning needs of convalescent patients after heart failure as perceived by the nurses according to their exposure to refresher course/s for all the eight subscales of MCPLNI. Thus, the perceptions seem to differ when the nurses are exposed to refresher course which is a part of continuous education.

To summarize, H_{02} (null hypothesis) was stated that there was no significant relationship between the perceived learning needs of patients as perceived by nurses and their (nurses') selected demographic variables of age, gender, education, years of experience. H_02 (null hypothesis) was accepted as it showed that there was no significant difference between the perceived learning needs of convalescent patients after heart failure as perceived by the nurses in relation to their age, gender and education. Whereas H_{02} (null hypothesis) was rejected as there was a significant difference between perceived learning needs of convalescent patients after heart failure as perceived by the nurses and their years of experience for all the eight MCPLNI subscales except for the subscale of 'heart failure'; their years of experience in medical wards and their exposure to refresher course/s for the all the eight MCPLNI subscales respectively.

Section VI: Comparison of The Perceived Learning Needs of Convalescent Patients After Heart Failure With That of The Nurses' Perceptions

The paired t-test was used to examine if there is a difference between the patients and nurses perceptions. The calculated 't' value was more than table value (2.02) at 0.05 level it can be stated that there is a significant difference between the patients and nurses perceptions. By applying Wilcoxon's test, it was also proved that there is a significant difference between the patients and nurses perceptions at p<0.05 level. The null hypothesis (H_{03}) was rejected and thus, alternative hypothesis (H_1) is accepted. It shows that there is a statistically significant difference between the

perceptions of convalescent patients after heart failure and the perceived learning needs of the patients after heart failure as perceived by the nurses for the eight subscales of MCPLNI. This finding is consistent with the previous studies which show a disparity between the patients' and nurses' perception.

Conclusion

From the data analysis and review of the literature, there is a consistent finding that study subjects do perceive the area of medication information as a top educational need. The patients in the current study perceived that information regarding medication information was the most important as an educational need (M = 4.01, SD = 1.08). The category ranked least important was anatomy and physiology (M = 3.25, SD= 1.59). The nurses too ranked the category of medications as most important (M = 4.32, SD = 0.84). They rated anatomy and physiology (M = 3.80, SD = 1.26) as least important. The study conducted by Chan et al[60] utilised the CPLNI for assessing the learning needs. It was revealed that the patients ranked the area of medication information as the most important educational need. However in the current study, the least ranked category of anatomy and physiology is a newer finding which could not be related to the quoted studies. Thus, the nurses may strongly emphasize the areas of medication information and other information pertinent to heart failure during discharge teaching. The health education on rest of the aspects can be modified according to the patients' needs.

A relation of perceived learning needs of convalescent patients after heart failure with their demographic variables was explored. It was seen that H_{01} (null hypothesis) was accepted for the variables of age and gender. Whereas H_{01} (null hypothesis) was rejected for education of the patients for all the subscales except for physical activity and with their occupation for the all the eight MCPLNI subscales. Thus, the perceived learning needs seem to differ with the education and occupation of the patients. Also, a relation was explored between perceived learning needs of convalescent patients after heart failure as perceived by nurses with their demographic variables. It was seen that H_{02} (null hypothesis) was accepted in relation to nurses' age, gender and education. Whereas H_{02} (null hypothesis) was rejected with their total years of experience, their years of experience in medical wards and their exposure to refresher course/s. Thus, these variables seem to have a significant effect on the perceived learning needs of the nurses. Further, comparison was done of the perceived learning needs of convalescent patients after heart failure with that of the nurses. It was seen that H_{03} (null hypothesis) was rejected and research hypothesis was accepted as there was a significant difference between both the needs. This shows a disparity between the patients' and nurses' perceptions. These findings were consistent

with the studies carried out on patients with cardiac conditions.

From the study the researcher concluded that the perceptions regarding the learning needs of convalescent patients after heart failure and staff nurses need to be valued. The study's results have added to the nursing knowledge base that such patients and nurses continue to have medication information as top learning need. But the other learning needs do not match with the other rankings given by the nurses and patients. Incorporation of the learning needs in the health education especially before discharge is thus crucial for the effective education of convalescent patients with heart failure.

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