

ปัจจัยทำนายอาการซึมเศร้าในผู้ป่วยที่มีภาวะหัวใจล้มเหลวในประเทศเนปาล Predictors of Depressive Symptoms among Patients with Heart Failure in Nepal

นิพนธ์ต้นฉบับ

Original Article

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บทคัดย่อ

วัตถุประสงค์: เพื่อศึกษาอำนาจการทำนายของอายุ ความคิดทางลบ กลวิธีในการเผชิญปัญหา และการสนับสนุนทางสังคม ต่ออาการซึมเศร้าในผู้ป่วยที่มีภาวะหัวใจล้มเหลวในประเทศเนปาล **วิธีการศึกษา:** การศึกษาเชิงทำนายที่ดำเนินการที่โรงพยาบาลแห่งหนึ่งในเมืองกาฐมาณฑุ ประเทศเนปาล กลุ่มตัวอย่างเป็นคนไข้ 124 คนที่ได้รับการวินิจฉัยว่ามีภาวะหัวใจล้มเหลวอย่างน้อย 6 เดือน และมีระดับความสามารถในการทำกิจกรรม NYHA ระดับ 1 และ 2 เก็บข้อมูลโดยใช้แบบสอบถาม วิเคราะห์ข้อมูลโดยใช้สถิติเชิงพรรณนา และการวิเคราะห์การถดถอยเชิงพหุคูณ **ผลการศึกษา:** กลุ่มตัวอย่างส่วนใหญ่เป็นเพศหญิงร้อยละ 58.9 อายุเฉลี่ย 52.8 ปี (SD = 13.5, range = 22 - 86) พบว่ามีอาการซึมเศร้าสูงถึงร้อยละ 34.7 ปัจจัยที่ศึกษาร่วมกันทำนายอาการซึมเศร้าในผู้ป่วยที่มีภาวะหัวใจล้มเหลวได้อย่างมีนัยสำคัญ ($F_{4,119} = 21.84, P\text{-value} < 0.01, R^2 = 0.423$) และอธิบายความผันแปรของอาการซึมเศร้าได้ถึงร้อยละ 42.3 โดยอายุ ($\beta = 0.14, P\text{-value} < 0.05$) ความคิดทางลบ ($\beta = 0.56, P\text{-value} < 0.01$) และกลวิธีในการเผชิญปัญหา ($\beta = 0.18, P\text{-value} < 0.01$) ทำนายอาการซึมเศร้าอย่างมีนัยสำคัญทางสถิติ **สรุป:** การพบปัจจัยทำนายอาการซึมเศร้าในผู้ป่วยที่มีภาวะหัวใจล้มเหลวช่วยสร้างความตระหนักแก่บุคลากรทางสุขภาพในการดูแลผู้ป่วย และนำไปสู่การพัฒนาแบบหรือโปรแกรมที่มีความเหมาะสมกับอายุ รูปแบบความคิด และกลวิธีในการเผชิญปัญหา เพื่อป้องกันอาการซึมเศร้าและส่งเสริมการมีสุขภาพทางจิตที่ดี

คำสำคัญ : อาการซึมเศร้า, ความคิดทางลบ, กลวิธีในการเผชิญปัญหา, การสนับสนุนทางสังคม, ภาวะหัวใจล้มเหลว, เนปาล

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Introduction

Heart failure is one of the major public health problems with the prevalence of over 26 million worldwide and is estimated to increase globally.¹ Patients with heart failure face with various physical and psychosocial challenges. Physical symptoms such as dyspnea, tiredness, ascites, fatigue, and loss of appetite could lead patients to lose their self-confidence and abilities to carry out activities of daily living, work, and social events. Further, repeated thoughts of inability to control the life-threatening situations and death trigger feeling of fear, emotional distress, and depression.² Studies

have shown a high prevalence of depressive symptoms in patients with heart failure ranging from 21.5% to 68% varied by the definition of depression and scales used.^{3,4} The existence of depressive symptoms has important clinical consequences in heart failure patients by leading them to experience decreased health related quality of life, and increase in health care use, rehospitalization, and death.⁴ Various factors have been found to contribute to depressive symptoms among patients with heart failure including

sociodemographic characteristics as well as psychosocial factors.

Sociodemographic characteristics such as age has been found to be associated with depressive symptoms in patients with heart failure.⁵⁻⁸ Studies have reported inconsistent findings. Some indicated that younger patients had a high prevalence of depressive symptoms than their older counterparts since the illness limits their personal, family, and business functions.⁵⁻⁷ Yet, other studies have shown that older patients whose age above 60 years old experienced higher depressive symptoms than that of the younger due to functional and cognitive difficulties.⁸

Further, numerous psychosocial factors have been reported to contribute to depressive symptoms among patients with heart failure. Factors such as negative thinking, coping strategies, and social support are of interest as guided by Cognitive Motivational Relational Theory (CMRT) by Lazarus (1991).⁹ The CMRT proposed that emotions arise from the relationship between a person and the environment.⁹⁻¹¹ Based on the theory, it can be explained as when persons encounter the diagnosis of heart failure and experience the symptoms, persons might make the relational meaning through the process of appraisal whether the encounter is harms or benefits; an emotion is then aroused. If a person's beliefs about self and the world are in the negative ways (*Negative thinking*), the person views the encounter of having heart failure as harms for loss of independence, inability to do activity, and being a burden to others. The negative thinking serves as a primary appraisal of goal incongruence which arouses the emotion of sadness which could lead to depression. At times, persons also evaluate the resources they have to face with situations known as secondary appraisal, that is, coping potential and social support. *Coping* shapes emotion by affecting the person- environment relationship and how it is assessed. People use most of the basic coping strategies to regulate their emotions both problem-focused coping and emotion-focused coping. Lastly, for *social support*, having someone in times of need has helped people get through the difficult situations not only by giving them sense of love and belongings but also fruitful information and other instrumental supports. Thus, the three psychosocial factors, negative thinking, coping strategies, and social support were of interest.

First, *negative thinking*, a pattern of thinking in negative ways about self, world, and future, and isolation of oneself from others, has consistently been reported to be associated with depressive symptoms in patients with long term condition including heart failure.¹²⁻¹⁵ A systematic review found strong evidence to support negative thinking (worry and rumination) as a predictor of later depression, anxiety and emotional distress in people with long term conditions such as patients with asthma, diabetes, and heart diseases.¹³ Further, negative thinking towards loss of independence, lack of recreational activity, being burden to others, and concerns about the future were found to be associated with an increased risk for development of depressive symptoms among older adults with heart failure.¹⁴ Lastly, a qualitative study conducted in patients with heart failure found that all participants reported having negative thinking and such thinking reinforced their depressed mood.¹⁵

Next, people use *coping strategies* to deal with stressful situations. Individuals with heart failure cope with their illness by using a variety of coping strategies. Report from a systematic review indicated that people with heart failure utilized both problem focused and emotion focused coping to regulate their psychological well-being. However, certain emotion focused coping like escape which is negatively related to adaptive self-care could lead to depressive symptoms.¹⁶ Vollman and colleagues found relationships between coping strategies and depressive symptoms in patients with heart failure.¹⁷ Specifically, planful problem solving and problem focused strategies of social support had negative relationship with depressive symptoms; whereas emotion focused coping strategy of escape or avoidance had positive relationship with depressive symptoms. This implies that the patients who used more avoidance and less active coping styles had more depressive symptom. Consistently, a study of coping styles of patients with heart failure found negative relationship between depressive symptoms and coping styles such as acceptance, humor, planning and emotional support, and positive relationship with coping strategies like behavioral disengagement, denial, venting, and mental disengagement.¹⁸

Finally, social support has been found to be associated with depressive symptoms in patients with heart failure.¹⁹⁻²¹ In a study conducted in outpatients with heart failure, the results showed less depressive symptoms in individuals who got maximum social support.¹⁷ Similarly, patients with heart failure

who reported having social support had lower scores of depressive symptoms.¹⁸ Consistently, perceived good social support had negative relationship with depressive symptoms among patients with heart failure.²⁰ Lastly, lack of satisfaction with social support was found to be a predictor of developing depressive symptoms among patients with heart failure.²¹

From the aforementioned reviews, individual characteristics such as age as well as psychosocial factors as negative thinking, coping strategies and social support have significantly influenced on depressive symptoms among patients with heart failure in many countries especially in Western cultures. However, such factors have not been well studied in Nepal. Knowing such factors and tailored intervention to intervene the process of developing depressive symptoms are of benefit to Nepalese patients with heart failure. Thus, the purpose of this study was to examine the predictive power of age, negative thinking, coping strategies, and social support on depressive symptoms among patients with heart failure in Nepal. It was hypothesized that age, negative thinking, coping strategies, and social support jointly predict depressive symptoms among patients with heart failure in Nepal.

Methods

Study design and participants

This study was a predictive correlational research designed to identify the predictive power of age, negative thinking, coping strategies, and social support in Nepalese patients with heart failure. The study population was Nepalese patients with heart failure attending the cardiac outpatient department of the Manmohan Cardiothoracic Vascular & Transplant Centre (MCVTC), teaching hospital in Kathmandu, Nepal where the data were collected.

Participants were 124 male and female patients who met the inclusion criteria. Specifically they were 18 years old or older, and diagnosed with heart failure for at least six months with the New York Heart Association Functional Classification as NYHA class I and II. The exclusion criteria were having diagnosis of schizophrenia or other psychotic disorders, presence of a life-threatening diseases (e.g., metastatic cancer), having symptoms of severe heart failure such as severe dyspnea at rest or chest pain, and patients 60 years old or older who had cognitive impairment indicated by

GPCOG score (General Practitioner Assessment of Cognition Scale) of less than 9.

The sample size was determined by using the statistical power analysis as appropriate for conducting multiple regression analyses. With a conventional medium effect size for r of 0.3, an α of 0.05, and a power ($1 - \beta$) of 0.80, a sample size of 124 participants was required.

Ethical considerations

This study was approved by the Ethical Review Board of Faculty of Nursing, Mahidol University, Thailand (COA No. IRB-NS2018/470.2512) and Ethical Review Committee of Teaching Hospital, Nepal (Ref. 386 (6-11) E/075/76).

Measurements

There were five instruments used in this study. All the scales were in Nepali language and had been used with the Nepalese people and found to be valid and reliable.

Demographic questionnaire

The questionnaire was used to collect the patient's characteristics such as age, gender, ethnicity, religion, etc. Information was obtained by in-person interview and data abstraction from the patient's health records.

Center for Epidemiologic Studies Depression Scale (CES-D)

The 20-item CES-D developed by Radloff is a self-report measure of depressive symptoms.²² It has four factors including depressed affect, positive affect, somatic, and interpersonal relationship. Participants indicate how often they have felt during the past week on a 4-point Likert scale ranging from 0 (rarely or none of the time) to 3 (all of the time). The range of scores is from 0 to 60 with higher scores indicating more depressive symptoms. The cutoff point of 16 and above is considered as having depressive symptoms. In this present study, internal consistency reliability was high with a Cronbach's alpha coefficient of 0.82.

Crandell Cognitions Inventory- Short Form (CCI -SF)

The 12-item CCI-SF was developed by Dekker and colleagues based on the revised CCI developed by Crandell and Chambless in 1986.^{12,23} CCI-SF is used to measure negative thinking in patients with heart failure. Participants indicate how often they experience the thoughts on a 5-point

Likert scale ranging from 1 (almost never) to 5 (almost always). The range of score is from 12 to 60 with higher scores indicating higher levels of negative thinking. In this present study, internal consistency reliability was high with a Cronbach's alpha coefficient of 0.94.

Brief Cope

The 28-item Brief Cope was developed by Carver to measure coping strategies that people use to deal with the stress in life.²⁴ It consists of 14 subscales, namely self-distraction, active coping, denial, substance use, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, planning, humor, acceptance, religion, and self-blame. Participants were asked to think about ways they have used to deal with the stress or problems in life on a 4-point Likert scale ranging from 1 (I haven't been doing this at all) to 4 (I have been doing this a lot). High scores on the scale indicate relatively greater use of particular coping strategies. In this present study, high internal consistency reliability was found with a Cronbach's alpha coefficient of 0.87.

Multidimensional Scale of Perceived Social Support (MSPSS)

The 12-item MSPSS was developed by Zimet and colleagues to measure subjective perceptions of support from three sources, specifically family, friends and significant others which were reflected as the corresponding three subscales.^{25,26} Participants indicate how they feel about each statement on a 7-point Likert scale from 1 (very strongly disagree) to 7 (very strongly agree). The scores range from 12 to 84 with higher scores indicating greater perceived social support. In this present study, internal consistency reliability was high with a Cronbach's alpha coefficient of 0.88.

Participant enrollment and data collection procedure

Data collection process was as follows. First, staff nurses at the outpatient clinic of MCVTC assessed patients based on the inclusion criteria. Patients who met the inclusion criteria and were interested in participating in the study were asked to meet the researcher. Next, participants were informed about the purpose, risks and benefits, and procedure of the study. Confidentiality was ensured. Written informed consent was then obtained. Lastly, self-administered questionnaires were provided to the participants. For those who could not read and

write by themselves or had visual difficulties, they would be interviewed by the researcher. The process lasted for approximately 30 - 45 minutes.

Data analysis

Descriptive statistics including frequency with percentage and mean with standard deviation were used for demographic data. Pearson's product moment correlation was used to assess the initial relationships of age, negative thinking, coping strategy, and social support with depressive symptoms. Finally, multiple regression analysis was utilized to examine predictive power of age, negative thinking, coping strategy and social support to depressive symptoms in Nepalese patients with heart failure. The Enter method was used in examining the candidate predictors in this regression analysis. The significant levels were set at type I errors of 1% and 5% (or *P*-value of less than 0.01 and 0.05, respectively). Data analysis was performed by using Statistical Package for Social Sciences.

Results

Of a total of 124 patients with heart failure participating in the study, 58.9% were female (Table 1). Participants ranged in age from 22 to 86 years with the mean age of 52.8 (SD = 13.6). Majority of them were married (97.6%), with Hindu religion (89.5%), and with Newar (25%) and Brahmin (25%) ethnicity. More than half (54%) of participants had elementary level of education followed by no formal education (18.5%). Almost half of the participants were unemployed (48.4%). Lastly, for the income, 60.5% of the participants perceived as having sufficient income, whereas another 39.5% perceived as insufficient. With regard to the medical record, all participants were diagnosed with heart failure for more than 6 months with the NYHA class I (77.4%) and class II (22.6%). Majority of them were having the illness between 1 - 5 years (44.4%) with the average of 2.1 years (SD = 0.90). A total of 65.3% of participants were having more than one comorbidity (Table 1).

Depressive symptoms and associating factors

Levels of depressive symptoms and associating factors including negative thinking, coping strategies and perceived social support were revealed. Among 124 Nepalese patients with heart failure, the mean score of depressive symptoms was 15.4 points (SD = 6.5, range: 0 – 60 points) and more

Table 1 Demographic and clinical characteristics of the participants (N = 124).

Characteristics	N	%
Gender		
Male	51	41.1
Female	73	58.9
Age (years) (M = 52.8, SD = 13.6, Range = 22 - 86)		
21 - 30	9	7.3
31 - 40	10	8.1
41 - 50	33	26.6
51 - 60	41	33.1
> 60	31	25.0
Religion		
Hindu	111	89.5
Buddhist	10	8.1
Christian	3	2.4
Ethnicity		
Brahmin	31	25.0
Chhetri	26	21.0
Newar	31	25.0
Mongolian	27	21.8
Others	9	7.3
Marital status		
Single	1	.8
Married	121	97.6
Separated/Widowed	2	1.6
Number of children (M = 2.8, SD = 1.4, Range = 1 - 7)		
No children	5	4.0
One	17	13.7
Two	42	33.9
Three	25	20.2
More than three	35	28.2
Level of education		
No formal education	23	18.5
Elementary	67	54.0
High school/Diploma	17	13.7
Bachelor's Degree and higher	17	13.7
Employment		
Unemployed	60	48.4
Government	8	6.5
Non-Government	25	20.2
Self-employed	21	16.9
Retired	10	8.1
Income		
Insufficient	49	39.5
Sufficient	57	46.0
Sufficient with saving	18	14.5
Level of heart failure		
NYHA I	96	77.4
NYHA II	28	22.6
Duration of illness (M=2.1, SD = .90, Range = 6months-12years)		
< 1 year	33	26.6
1 - 5 years	55	44.4
6 - 10 years	25	20.2
> 10 years	11	8.9
Comorbidity (Participants could answer more than one)		
No comorbidity	43	34.7
Have comorbidity	81	65.3
(e.g., hypertension, diabetes mellitus, hyperlipidemia, hypothyroidism, etc.)		

than one third of participants (34.7%) reported having depressive symptoms. Next, for *negative thinking*, the results showed that the range of scores was from 12 to 43 points and the mean score was 22.9 points (SD = 9.3), indicating that participants with heart failure tended to have negative thinking.

In regard to *coping strategies*, all patients with heart failure used certain coping strategies in dealing with their illness. The range of scores was 41 to 88 points with the mean score of 55.7 points (SD = 10.4). The three most used coping strategies were religion cope, instrumental support, and acceptance (mean = 5.8 ± 1.5 , 5.8 ± 1.5 , and 5.7 ± 1.2 points, respectively). Lastly, for *perceived social support*, participants perceived quite strong social support from family, friends, and significant others with the range of scores from 48 to 84 points and the mean score of 66.6 points (SD = 8.5).

Relationships between depressive symptoms and associating factors

Initial bivariate relationships based on Pearson's product moment correlation coefficients indicated that age, negative thinking, and coping strategies had a significant relationship with depressive symptoms ($r = 0.23$, 0.60 , and 0.21 , respectively, with P -value < 0.01 , < 0.01 and < 0.05 , respectively); while social support did not (Table 2).

Table 2 Associations between depressive symptoms and age, negative thinking, coping strategies, and social support presented as Pearson's product moment correlation coefficients (r) (N = 124).

Variables	1	2	3	4	5
1. Age	1.000				
2. Negative thinking	0.125	1.000			
3. Coping strategies	0.050	0.060	1.000		
4. Social support	-0.087	-0.108	0.204*	1.000	
5. Depressive symptoms	0.231†	0.603†	0.211*	-0.119	1.000

* P -value < 0.05 , † P -value < 0.01 .

Table 3 Multiple regression of age, negative thinking, coping strategies and social support on depressive symptoms (N = 124).

Variables	b	S.E. _b	β	t	P-value
constant	0.764	0.119		6.42	< 0.001
Age	0.002	0.001	0.143	2.03	< 0.044
Negative thinking	0.010	0.001	0.565	7.98	< 0.001
Coping strategies	0.003	0.001	0.187	2.61	< 0.010
Social support	-0.002	0.001	-0.084	-1.16	NS

$F_{4,119} = 21.84$, P -value < 0.01 , $R = 0.65$, $R^2 = 0.423$.

Finally, findings from multiple linear regression analysis suggested that all studied factors were jointly predicted depressive symptoms ($F_{4,119} = 21.84$, P -value < 0.01) and accounted for 42.3% of the variance on depressive symptoms ($R^2 = 0.423$) (Table 3). Age ($\beta = 0.14$, P -value < 0.05),

negative thinking ($\beta = 0.56$, P -value < 0.01) and coping strategies ($\beta = 0.18$, P -value < 0.01) were found to be statistically significant predictors of depressive symptoms among Nepalese patients with heart failure with negative thinking as the strongest predictor (Table 3).

Discussions and Conclusion

Participants in this study were 124 patients diagnosed with heart failure for more than 6 months with mild severity of heart failure as classified as NYHA class I and II. The majority was middle to older adults with an average age of 52.8 years, married, with no to low education, and unemployed. More than one-third of participants (34.7%) reported having depressive symptoms, which was quite a high rate compared with a 21.6% from previous meta-analysis study of depression in heart failure patients.⁴

The findings revealed age, negative thinking, and coping strategies as predictors of depressive symptoms. Considering age, the results showed that age was a significant predictor of depressive symptoms among patients with heart failure. Specifically, older patients were more likely to have depressive symptoms than those who were at their younger age. This is consistent with a previous study indicating that older patients with heart failure whose age above 60 years old experienced higher depressive symptoms than that of the younger counterparts.⁸ This is not surprising since almost 60% of the participants in this study were older than 50 years old. The reasons that older patients tended to have more depressive symptoms than the younger ones might be that when people getting older, they face with various challenges such as deterioration of health status, functional impairment, loss of interest for activities, and decrease in social life either from the limitation of physical activities resulting from the symptoms, or from the retirement. Further, when aging to the elderly, individuals might suffer from cognitive impairment such as poor memory or concentration difficulties. This makes it difficult for the patients to fully realize that they actually experience depression, fully understand their physical illnesses, or follow the complex medical regimen.⁸

In addition, many aged-care facilities in Nepal lack adequate resources including trained staff in mental health.²⁷ This could leave individuals with heart failure who had depressive symptoms go untreated. Finally, in Nepal, self-respect is considered to be strongly connected with

productivity of work.²⁸ When people are unable to work due to the increase in age or limitation of physical activities from the conditions of heart failure, they might consider themselves as valueless and burdensome to their children and family. These could thus lead to feeling of depression.

Next, *negative thinking* was found to be the strongest predictor of depressive symptoms among patients with heart failure. The finding indicated that patients who had higher scores of negative thinking were more likely to have more depressive symptoms than those having lower scores of negative thoughts. The result is consistent with that of the meta-analysis study which found a significant positive correlation between preservative negative thinking and subsequent depression in patients with long term conditions such as heart disease, asthma, and diabetes.¹³ Furthermore, it was found that negative thinking towards loss of independence, lack of recreational activity, being burden to others, and concerns about the future were found to have an increased risk for development of depressive symptoms among older adults with heart failure.¹⁴

Since patients with heart failure have limitations of physical activities, they may perceive themselves in a variety of negative ways. This could lead to depression as Dekker and colleague¹⁵ reported that patients with heart failure described experience of negative thinking to worsen their depressed mood. This is in line with the results of this study which found that participants reported having diagnosed with heart failure as making a mess of their life, waste of opportunity in life, letting themselves down, being disappointed to the family, and feeling hopeless. Such negative thoughts could arouse the emotion of sadness and depression.

Lastly, *coping strategies* were found to be a significant predictor of depressive symptoms. Our findings revealed that all participants used certain coping strategies to deal with their illness. Participants reporting higher scores on utilizing coping strategies were more likely to have depressive symptoms than did those with lower scores. This is in line with the CMRT framework indicating that people use various coping strategies to regulate their emotions when they face with stressful situations. Also, it is supported by the study from Trivedi and colleagues which found association of presence of depression and presence of various coping styles in patients with heart failure.¹⁸ It is possible that Nepalese patients with heart failure utilize a variety of coping strategies in order to adjust

themselves to the illness and regulate their emotions. The three most used coping strategies were religion cope, instrumental support, and acceptance. It is not a surprise since Nepalese people have strong belief in religion. It is possible that when people were trying to cope with their illness, they turned to religion for comfort, tried to get help, and accepted their destiny of the illness.

Last of all, though social support was not found to be a predictor of depressive symptoms, it is worth to mention. It might be that participants in this study had mild level of severity of heart failure (NYHA class I and II) which had slight to moderate limitations of physical activities. People generally remain their ability to perform activities and control their life; thus, they may not need much social support. Additionally, MSPSS used in our study is a measure of perceived social support received from family, friends, and significant others, not the actual social support people get.²⁹ The social support measured mainly were emotional and social dimensions. Additional support such as physical and information support may consider necessary for patients with heart failure. Thus, the impact of social support need further exploration.

Implication for nursing practice, research, and education are discussed. Firstly, since the rate of depressive symptoms among Nepalese patients with heart failure was quite high, screening for depressive symptoms in patients at all severity levels of heart failure (NYHA I to IV) is recommended. Thus, proper preventive intervention and appropriate treatment for depression can be provided. Next, age, negative thinking, and coping strategies were identified as predictive factors to depressive symptoms. Therefore, interventions tailored to age, changing negative thinking, and training for proper use of coping strategies are needed to be developed and tested in order to help prevent or lessen depressive symptoms of patients with heart failure. Finally, since social support was not found to have a relationship with depressive symptoms, further exploration is needed regarding the cultural variation in expressing social support and the appropriateness of different measures of social support.

This study had certain limitations. The study was conducted only in patients with mild severity of heart failure classified as NYHA I and II at the outpatient clinic. This limits the explanation to patients with more severe symptoms of heart failure and those admitted to the hospitals. Thus, assessing depressive symptoms and its predictive factors in patients with more severe symptoms of heart failure and those

admitted to the hospital should broaden the understanding of psychological issues of patients with heart failure. Lastly, this study was conducted in only one service facility, expansion of the settings and sample size is recommended.

In summary, the rate of depressive symptoms in patients with heart failure in Nepal was quite high. Three important factors which were age, negative thinking, and coping strategies were found to be predictors of depressive symptoms among Nepalese patients with heart failure.

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