

## Chronic Illness and Mood Status among Chronically Ill Patients

Hanem F. Mohamed<sup>1,2</sup>, Khairyah Al Ali<sup>3</sup>, Reem Al Mutairi<sup>3</sup>, Samia Al Enizy<sup>3</sup>, and Fawziah Al Enizy<sup>3</sup>

1. College of Nursing, King Saud Bin Abdul-Aziz University for Health Science, Riyadh, KSA
2. Faculty of Nursing, Medical Surgical Nursing department, Tanta University, Egypt
3. Level 8 Nursing students, College of Nursing, King Saud Bin Abdul-Aziz University for Health Science, Riyadh, KSA

\* E-mail of the corresponding author: hanemfm@hotmail.com

### Abstract

**Introduction:** Research has proven that chronic illnesses are associated with mood disturbance. Chronic illnesses are complex conditions that last for lifetime and cannot be cured completely. Chronic illnesses are known to reduce patients' ability and energy to live well, exercise, live a normal life or cope with their illnesses. In addition, signs and symptoms of mood disturbances often overlooked. This adds a burden on the individual patient, health care providers and the community. With the increasing number of patients with chronic illnesses, understanding the relationship between chronic illness and mood status is vital to improve community health. The objective of this study was to identify the association between chronic illness and mood status among Saudi chronically ill patients.

**Methodology:** The study used a descriptive cross-sectional design to answer the following questions: (1) Is there a relationship between chronic illness and mood status among chronically ill patients? (2) What is the relationship between the number of chronic illness and mood status? (3) What is the relationship between the type of chronic illnesses and mood status? (4) Does adherence to diet and medication affect mood status among chronically ill patient? and (5) Does mood status differ by demographic characteristics of chronically ill patients? A convenience sample of 473 patients was interviewed while visiting the out-patient clinics at King Fahd Hospital. Eligible subjects were interviewed in a semi structured interview by the researchers after agreeing to participate in the study. Plus demographic profile, the Brief Mood Introspection Scale was used to collect data.

**Results:** 64.3% were females, 46% were in the age group 40 to 59 years old with a mean age of 47.9(15.9). Majority was married, 25.6% graduated from colleges, 19.2% from high school and 28.1% were illiterate. 58.3% of the participants have 1 or 2 chronic illnesses and 34.7% have 3 to 4 chronic illnesses and 7% reported having more than 5 chronic illnesses. 78% indicated that they are adhering to medication, and 45% are adhering to diet. There was no statistical relationship between chronic illness and mood status ( $r = .03, p = .69$ ). Mood on the other hand significantly correlated with the number of chronic illness ( $r = .21^{**}, p = 0.01$ ), age ( $r = .16^{**}, p = .004$ ), gender ( $r = .26^{**}, p = .001$ ), and adherence to medication ( $r = .36^{**}, p = .002$ ).

**Conclusion and recommendation:** Chronically ill patient are at more risk for mood disturbance especially with the increasing number of chronic illness. Screening for mood disorders is important for early detection of more serious psychological disorders. Intervention to identify mood disturbances and differentiate them from the consequences of the chronic illness is vital for improving quality of life and health related outcomes among chronically ill patient. Using qualitative analysis plus the current quantitative method may provide wide range of assessment and understanding.

**Keywords:** Chronic illness, mood, patients, Adherence

### 1. Introduction

Chronic illnesses are complex conditions that last for lifetime and cannot be cured completely. Chronic illnesses are the major cause of morbidity and mortality all over the world (WHO, 2003). Chronic illnesses such as cardiovascular disease, diabetes mellitus, and respiratory disorders are among the most prevalent health problems worldwide including Saudi Arabia (Omer et al., 2009; Al Nozha et al; 2004). The number and the pattern of chronic illnesses among Saudi population is complex and needs to be clearly identified. Research has proven that chronic illnesses are associated with many psychological disorders including mood disturbance (Change-Quani, et al., 2010; Robert, 2000; Harris, 2006; Al Shammari, 1999). The number and type of chronic illnesses are known to reduce patient ability and energy to live well, exercise, adhere to medication and diet or cope with their illnesses. In addition, signs and symptoms of mood disturbances are often overlooked (Lueboonthavatchai, 2007). This adds a burden on the individual patients, health care provider and the community. With the increasing number of patients with chronic illnesses, understanding the relationship between chronic illness and mood status is vital to improve community health (Koroukian, Murray & Madigan, 2006). Mood disorder associated with chronic illness affect the economy through increasing admissions, reducing the productivity, increasing health care costs, and reducing the quality of life. The aim of this study is three folds: First, explore the relationship between number and type of chronic illness and mood status among chronically ill patients. Second, examine if adherence to diet and medication would affect mood status among

chronically ill patients. Third, investigate if mood status would differ based on the demographic characteristics of chronically ill patients.

**Significance:**

Chronically ill people are increasing in the Saudi community due to the dramatic changes in lifestyle. Studies reported a relationship between chronic illness and mood disorders. Signs and symptoms of mood status especially with those who are treated at home are often overlooked, and people in the community are not aware of such signs and symptoms. Much has been written in previous researches about mood disorders among chronically ill in terms of severe disorders such as depression, anxiety and conditions that require admission. Being unaware of having unpleasant mood status make chronically ill people in the community vulnerable to serious health problems and indirectly worsen their quality of life.

**Research questions:**

1. Is there a relationship between chronic illnesses and mood status among chronically ill patients?
2. What is the relationship between the number of chronic illnesses and mood status among chronically ill patients?
3. What is the relationship between the type of chronic illnesses and mood status?
4. Does adherence to diet and medication affect mood status among chronically ill patient?
5. Does mood status differ by demographic characteristics of chronically ill patients?

**2. Methods:**

**Design**

The study used a descriptive cross sectional design to answer the research questions.

**Sample and setting**

A convenience sample of 473 patients was interviewed in a semi structured interview while visiting the outpatient clinics for follow up. Outpatient clinics are located at King Fahd Hospital, King Abdul Aziz Medical City, Riyadh, KSA.

**Procedure of data collection**

Participants were approached in the outpatient clinics during their follow up visits. Researchers explained the study purposes and eligible subject were interviewed in a semi structured interview after agreeing to participate in the study. The interview lasts from 15 to 20 minutes and researchers were available to answer questions. Eligibility for the study guaranteed based on: being adult, having one or more chronic illness, not critically ill, no history of mental disorders, agree to participate in the study.

**Questionnaire:**

The study questionnaire included demographic profile of participants such as, age, gender, marital status, education, occupation, number of chronic illness, and type of chronic illness. The Brief Mood Introspection Scale (Mayer, 1988) was used to assess mood status among participants. The scale includes 16 adjective/phrase that describe present mood on a scale from - 10 to 10, with -10 is very unpleasant and 10 is very pleasant. Original responses for the questionnaire were definitely do not feel, do not feel, slightly feel, and definitely feel for unpleasant and pleasant mood. Responses were changed to only three categories to make the analysis easier on the -10 to 10 scale. The new 3 categories were never, sometimes and often. The questionnaire was translated into Arabic language, and then translated back to English and modification was made to assure reliability. Two questions were used to assess adherence to diet and medication associated with the chronic illness.

**3. Results**

The study sample consisted of 473, 64.3% of them were females, 46% in the age group 40 to 59 years old and 41% in the age group of more than 60 years old with a mean age of 47.9(15.9). Majority was married, 25.6% graduated from colleges, 19.2% graduated from high school, and 28.1% were illiterate. 58.3% of the participants have 1 or 2 chronic illnesses and 34.7% have 3 to 4 chronic illnesses and 7% reported having more than 5 chronic illnesses. Sample general characteristics are presented in table 1.

Table 1: General Characteristics of the Sample

Item	Characteristics	
Gender	Females	64.3%
	Males	35.7%
Age	20 – 39 years	23%
	40 – 59 years	46%
	> 60 years	41%
	Mean age	47.9(15.9)
Marital status	76.9%	Married
	13%	Single
	8%	Widowed
	2.1%	Divorced
Education	25.6%	University graduates
	19.2%	High school
	10.8%	Middle School
	16.3%	Elementary School
	28.1%	Illiterate
# of chronic illness	58.3%	1 – 2 chronic illnesses
	34.7%	3 – 4 chronic illnesses
	7%	5 and more

The type of chronic illnesses among the study sample were 15.5% heart disease, 12.7% respiratory diseases, 18.5% diabetes mellitus, 3.2 % with gastrointestinal disease, and 2.7% musculoskeletal diseases. There were small percentages having blood, endocrine, cancer and neurological disorders. In addition, 64.4% had a combination of more than one chronic illness. The combination was mainly diabetes mellitus with 1 or 2 forms of heart diseases, respiratory disease or musculoskeletal diseases.

The most common heart diseases were hypercholesterolemia 36%, hypertension 31%, obesity 20% and heart failure 13% as presented in figure 1. As for respiratory disease, there were 33% having asthma and 25% have chronic obstructive pulmonary diseases (COPD).

Regarding adherence, 78% of participants reported adherence to medication and 45% reported adherence to diet in this study. Adherence is presented in figure 2.

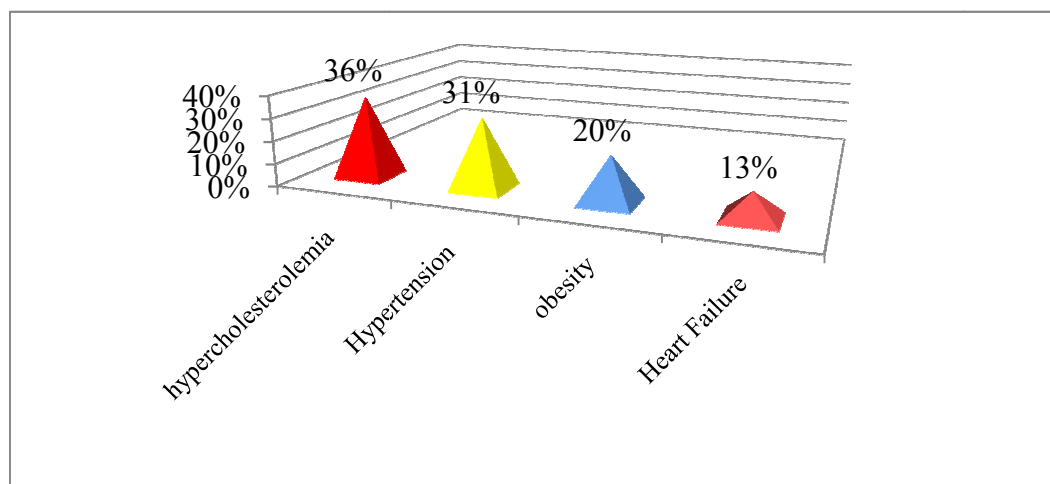
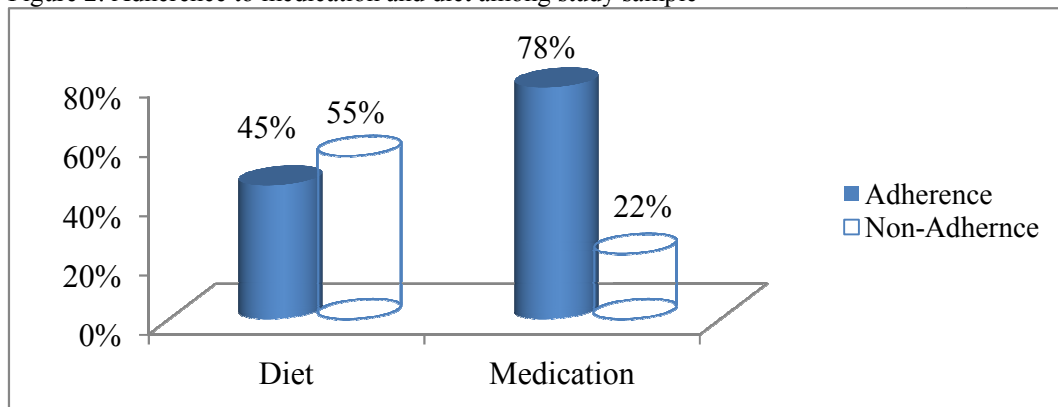


Figure 1: Percentage of common heart diseases among study sample

Figure 2: Adherence to medication and diet among study sample



Research question 1: Is there a relationship between chronic illness and mood status among chronically ill patients? Results indicated that there was no statistical significance relationship between chronic illness and mood status ( $r = .03$ ,  $p = .69$ ). Among the study sample, 9.3% reported feeling very unpleasant, 56% reported that they were moderately feeling unpleasant and 3.2% feel unpleasant. 5.4% were feeling very pleasant, 21.8% moderately feeling pleasant and 4.3% were feeling pleasant. Mood of the study sample is shown in table 2.

Table 2: Mood of the study sample

Mood	%
Very Unpleasant	9.3%
Moderately Unpleasant	56%
Unpleasant	3.2%
Very Pleasant	5.4%
Moderately Pleasant	21.8%
Pleasant	4.3%

Research question 2: What is the relationship between number of chronic illnesses and mood status? Correlation analysis revealed that there was a statistical significance relationship between chronic illness and mood status ( $r = .21^{**}$ ,  $p = .001$ ) meaning that with increasing the number of chronic illnesses, the mood status would go unpleasant.

Research question 3: what is the relationship between type of chronic illness and mood status? Correlation indicated no statistical significance relationship between type of chronic illness and mood status ( $r = -.043$ ,  $p = .71$ ).

Research question 4: does adherence to diet and medication affect mood status among chronically ill patients? Results showed that adherence to medication moderately and significantly correlated with mood status ( $r = .36^{**}$ ,  $p = .002$ ) and there was no statistical significant relationship between adherence to diet and mood as reported by ( $r = .05$ ,  $p = .65$ ).

Research question 5: Does mood status differ by demographic characteristics of chronically ill patients? Age reported significance correlation with mood status ( $r = .16^{**}$ ,  $p = .004$ ) indicating that the older the age the more feeling unpleasant. Gender also negatively and significantly correlated with mood status with women feeling more unpleasant mood ( $r = -.26^{**}$ ,  $p = .001$ ). Correlations among study variables are presented in table 3.

Table 3: Correlation between study variables

Study variables	Mood	
	r	p
Chronic illness	.03	.69
Number of chronic illness	.21**	.01
Type of chronic illness	-.043	.71
Age	.16**	.004
Gender	-.26**	.001
Adherence to medication	.36**	.002
Adherence to diet	.05	.65

#### 4. Discussion

The present study aimed at studying the relationship between chronic illness in terms of number and type and mood status among chronically ill patients. The study used a descriptive cross sectional design to collect data from 473 chronically ill patients in a semi structured interview. Although, results of this study showed that there was a considerable percentage of the sample reported feeling an unpleasant mood, the relationship was not statistically significant. Previous works of (Wagena et al. 2004; Surtees et al. 2003) reported an association between chronic medical conditions and mood disorders. One explanation of having no significance relationship between chronic illness and mood in this study could be that 78% of participants in this study reported adherence to medication and 45% were adhering to diet. Adherence would help them to have a control over their illness and feel pleased to some degree. In addition, demographic characteristics of participants were mainly women in older age who probably achieved most of their family and social goals and are not worried as much as younger ages.

Present results showed a relationship between mood, age and gender among chronically ill with older women having more unpleasant mood than men. This result was supported by Gadalla, (2008) and Curry et al., (2014), who indicated that individuals with chronic disorder had the highest rates of mood disorders especially among women between 30 and 69 years of age.

Majority of participants in this study reported adherence to medication. On the other hand, adherence to medication reported significance relationship with mood. Individuals who follow medication regimen were more likely to feel a pleasant mood. Having a majority in this study adhering to medication was not similar to other available data who reported that chronically ill do not completely adhere to medication (Huther et al., 2013; Mahler et al., 2010; Piette, et al., 2006). This result could be explained by having a quarter of participants in this study graduated from university and 19% graduated from high school. Being educated provides chances for people to adhere to health care providers advices regarding compliance to medication and to lifestyle changes. In addition, majority of the sample in this study was women in old age. By this time, women could receive family supports that help them adhere to their medication and take care of their health. The present study reported a significance relationship between adherence to medication and mood. There was no available data to compare regarding this specific data.

#### 5. Conclusion

Chronically ill patients are at high risk for developing mood disturbance, especially with increasing the number of chronic illness. Women and older age are more vulnerable for having unpleasant mood. Early screening for mood disorders is important for early detection of more serious psychological disorders and timely referral.

##### Recommendations

- Developing a culturally sensitive questionnaire to capture individuals susceptible to mood disorders is crucial for early detection and referral.
- Intervention to identify mood disturbance and differentiate them from consequences of the chronic illness is vital for improving quality of life and health related outcomes among chronically ill patient.
- Further assessment of potential relationship between adherence to medication and mood is needed to uncover possible hidden association and provide needed support.
- Using qualitative analysis plus the current quantitative method may provide wide range of assessment and understanding.

##### Limitation

The study did not look at socio-demographic factors such as income and insurance that could be a factor in having an unpleasant mood among chronically ill. Using a cross-sectional design with no randomization would trouble the generalization of the results.

#### References

- Al Nozha, M., al Mataaoug, M. A., al Marou, Y.Y., Al Harthi, S., Arabfah, M.R. khalil, M.. 92004). Diabetes mellitus in Saudi Arabia. *Saudi medical Journal*, 25(11), 1603-1610.
- Al qahtani, D. A., Imtiaz, M.L., Shareef, M. (2005). Obesity and cardiovascular risk factors in Saudi adult soldiers. *Saudi Medical Journal*, 26(8), 1260-1268.
- Al Shammari, D.A., Al-Subaie, a. (1999). Prevalence and correlates of depression among Saudi elderly. *International Journal of Geriatric Psychiatry*, 14, 739-747.
- Chang-quan, H., Xue-Mei, Z., Bi-Rong, D., Zhen-Chan, L., Ji-Rong, Y., Lui, L. (2010). Health status and risk for depression among elderly: A meta analysis of published literature. *Age and Aging*, 39,23-30.
- Curry, J.F., Aubuchon-Endsley, N., Brancu, M., Runnals, J. Fairbank, J.A. (2014). Life time major depression and comorbid disorders among current era women veterans. *Journal of Affected Disorders*, 152-154.
- Gadalla, T. (2008). Association of co-morbid mood disorders and chronic illness with disability and quality of

- life in Ontario, Canada. *Chronic Disease of Canada*, 28(4), 148-154.
- Harris, J., Von Wolff, A., Stange, D., Harter, M., Baehr, M., Dartsch, D.c., Kriston, L. (2013). Incomplete medication adherence of chronically ill patients in German primary care. *Patient Preference and adherence*, 7, 237-244.
- Koroukian, S. m., Murray, P., Madigan, E. (2006). Co-morbidity, disability, and geriatric syndromes in elderly cancer patients receiving home health care. *Journal of Clinical Oncology*, 24, 2304-2310.
- Lueboonthavatchai, P. (2007). Prevalence of psychosocial factors of anxiety and depression in breast cancer patients. *Journal of Medical association of Thailand*, 90(10), 2164-2174.
- Mahler, C., Hermann, K., Horne, R., Ludt, S., Haefeli, W.E., Seccsenyi, J., Jank, S. 92010). Assessing reported adherence to pharmacological treatment recommendations. Translation and evaluation of the Medication Adherence Report Scale (MARS) in Germany *Journal of Evaluating Clinical Practice*, 16(3), 574-579.
- Mayer, J. & Gaschke, Y.N. (1988). The experience and meta-experience of mood. *Journal of Personality and Social Psychology*, 55, 102-111.
- Omer, S., Al Amoudi, O.S., Attar, S., Ghabrah, T. M., and Al Qassimi, M.A. (2009). Pattern of common disease in hospitalized patients at an university hospitals in Saudi Arabia; A study of 5594 patients. *Medical Science*, 16(4), 3-12.
- Piette, J. D., Heisler, M., Horne, R., Alexander, G. 92006). A conceptually based approach to understanding chronically ill patients' responses to medication cost pressure. *Social Science Medicine*, 62(4), 846-857.
- Roberts, R. E., Shema, S. J., Kaplan, G.A., Strawbridge, W.J. (2000). Sleep complaints and depression in an aging cohort; a prospective perspective. *American Journal of Psychiatry*, 157, 81-88.
- Sutrees, P. g., Wainwright, N., W., Khaw, K. T., day, N.E. (2003). Functional health status, chronic medical conditions and disorders of mood. *British Journal of Psychiatry*, 183, 299-303.
- Wagena, E. J., Kant, I., Huibers, M., va Amelsvoort, L., Swaen, G., Wouters, van Schavck. C. (2004). Psychological distress and depressed mood in employees with asthma, chronic bronchitis or emphysema: a population- based observational study on prevalence and the relationship with smoking cigarettes. *European Journal of Epidemiology*, 19(2), 147-153.