Original Research Article

Factors affecting mental well-being among prolonged hospitalized patients in a tertiary care teaching hospital in Sri Lanka

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Abstract

Introduction: Mental well-being is an essential component of health. Prolonged hospitalized patients are prone to have alterations in mental wellbeing. So, it is important to study the effects of prolonged hospitalization on the mental well-being of patients as it can affect their disease conditions as well.
Objective: This paper aims to assess the direct and indirect effects of prolonged hospitalization on the mental well-being of patients and to identify how social and environmental factors are involved in this matter.
Method: An observational cross-sectional study was conducted in hospitalized patients admitted to the medical, surgical, and orthopedic wards of the National Hospital of Sri Lanka, using a self-administered questionnaire. Participants were selected using simple random sampling. The categorical variables were described as frequency and percentage, and an ANOVA test was used to compare the level of mental well-being with social and environmental variables. Statistical significance was defined as $p < 0.05$ at 95% confidence interval.
Results: 130 subjects admitted for more than 14 days participated in the research, and they were from general medical wards (33%), orthopedic wards (60.7%), and general surgical wards (6.2%). Among them, 87.7% were hospitalized 14-30 days and 12.3% for more than 30 days. There was no significant association between duration of hospital stay and mental well-being ($p=0.072$). Regarding the source of food, the majority of patients (n=78; 60%) who consumed hospital-cooked food had better mental well-being scores. The better mental well-being scores had a significant association with higher monthly income ($p<0.05$), better hospital environment ($p<0.001$), and alcohol abstention ($p<0.01$). However, there was no significant association between mental well-being and distance from home to hospital ($p=0.081$). After categorizing according to mental well-being score, 14.6% obtained unsatisfactory mental well-being, 30.8% satisfactory mental well-being, and 54.6% very good mental well-being. The results did not show a significant relationship between mental well-being and prolonged hospitalization.
Conclusion: The analysis did not provide evidence of an association between alterations in the mental well-being of patients and the duration of their stay in the hospital. Further studies, such as multi-centric studies, may be needed to validate its results.

Keywords: Mental well-being; prolonged hospitalization; Sri Lanka; orthopedic surgery.

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Introduction

Mental well-being is defined as a state of well-being in which individuals are coping with stress, working productively and fruitfully, and making contributions to the community within their potential (1). Prolonged hospitalization is defined as being admitted with a chronic disease to the hospital for more than two weeks (2). Experiences with a disability can also cause distress and isolate people from social support. In this regard, being in the hospital for prolonged periods deprives patients of many social, personal, and emotional interactions. Because of that, people living with chronic physical conditions often experience poor mental well-being.

In 2009, a study was done to assess mental well-being among patients with severe chronic obstructive pulmonary disease (COPD) (3). This study found that depressive symptoms were associated with COPD independent of known risk factors, along with worse health and functional status and self-management (3). In this study, we analyze the mental well-being of patients with a broader range of diseases, including asthma, heart disease, trauma, fractures, strokes, and pneumonia. Certain diseases, such as HIV-AIDS and multiple sclerosis (MS), have severe impacts on the brain. According to previous research in HIV-AIDS, approximately 70% of patients develop dementia, depression, or delirium (4-7). At least 50% of MS patients develop depression from the effects of the disease (8). Some chronic physical conditions cause hyperglycemia and disrupt cerebral circulation, which can impact brain function (9). It is known that there is an increasing prevalence of non-communicable diseases (10). Also, the number of patients coping with chronic conditions seems to be growing because of improvements in treatments and increases in survival times, particularly for conditions such as HIV infection and some malignancies (11). Hence there will be increased rates of prolonged hospitalization in the future. Evidence shows that, the more symptomatic the chronic physical condition, the more likely it is that a person will experience mental health issues (12). Thus, it is not surprising that people with chronic physical conditions often self-report poor mental health (13). Therefore, it is important and justifiable to study the mental status of patients with prolonged hospitalization.

If the alterations of a patient's mental well-being are not due to the effects of prolonged hospitalization, it would have been the same even if the patient was at home. However, if it is due to the effects of hospitalization, it can be modified by improvement of hospital settings and provision of patient-friendly medical care. Therefore, this study was undertaken to investigate mental status among prolonged hospitalized patients in a tertiary care teaching hospital and the variables affecting it.

Methods

This was an observational, cross-sectional study conducted in the general medical, general surgical, and orthopedic wards of the National Hospital of Sri Lanka. The number of patients selected from each ward was dependent on the percentage of patient turnover in the relevant ward. Various socio-demographic and clinical information for patients who were admitted and treated as inpatients in the hospital were retrieved. Patients with psychiatric morbidity, reduced conscious level, and acutely ill patients were excluded. A list of bed head ticket (BHT) numbers

of eligible patients was obtained from the respective wards. Power analysis was conducted before data collection to determine the smallest sample size. A total of 130 patients whose age was above 18 years and who were admitted to a ward for two weeks or more were selected using simple random sampling for the final analysis. All study participants provided written informed consent, and the study was approved by the medical ethics committee of the institution.

Data were obtained from the details entered into patients' BHTs, as well as from a self-administered questionnaire. The self-administered questionnaire was prepared in Sinhala, Tamil, and English using simple language without using any technical terms. The different socio-demographic variables including length of hospital stay, disease condition, area of residence, distance from home, occupation, monthly income, food source, alcohol use, home, and hospital environmental condition were collected. Hospital and home environments were further categorized into busy, calm, noisy, and quiet (Figure 1). Mental well-being was estimated using a scoring system ranging from 0-108 (0-42 not satisfactory, 43-63 satisfactory, and 64-108 very good mental well-being) (Appendix 1). Patient Health Questionnaire-9, Warwick Edinburgh Mental Well-being Scale, Oxford Happiness Questionnaire, and Satisfaction with Life questionnaire were used as a guide to develop our mental well-being questionnaire (14-17).

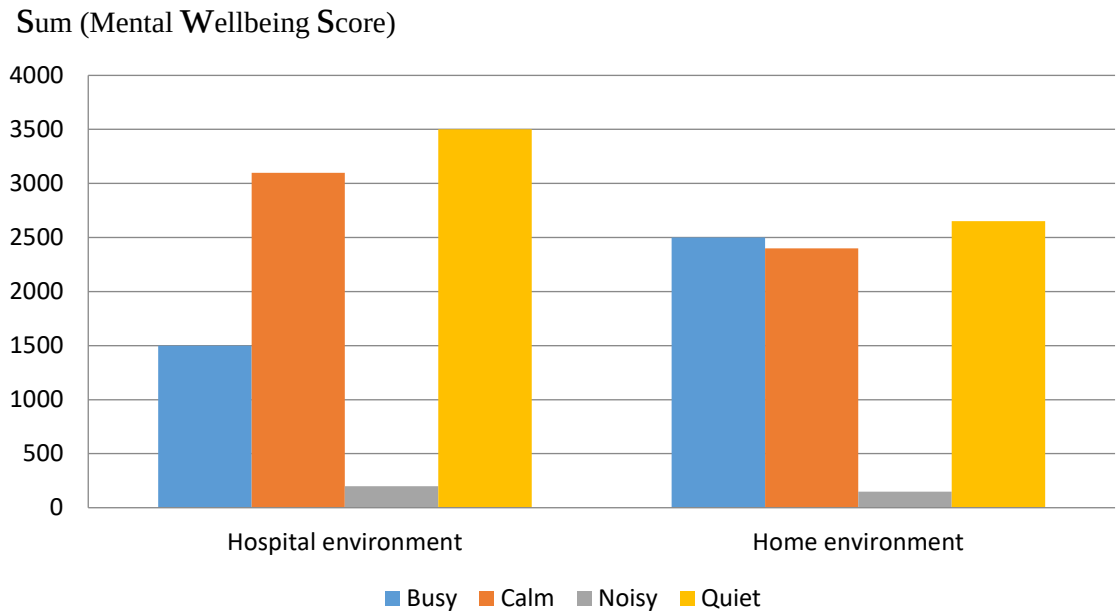

Figure-1. Mental well-being in hospital and home environments

Collected data were first entered into Microsoft Excel (Microsoft Office 2013). After preliminary analysis, data were entered into JASP (Jeffreys's Amazing Statistics Program) version 0.16.1 software for final data analysis. The various categorical variables were described as frequency and percentage using appropriate tables, and the ANOVA test was used to compare level of mental well-being with social and environmental variables. Statistical significance was defined as $P < 0.05$ at 95% confidence interval.

Results

In the present study, out of the total number of patients (n = 130), 33% of patients from general medical wards, 60.7% of patients from orthopedic wards, and 6.2% of patients from general surgical wards participated. Participants' mental well-being was compared based on the duration of hospital stay, disease category, distance from home to hospital, hospital environment, home environment, food source, alcohol use, and monthly family income (Tables 1 and 2). The majority of patients (85.38%) had mental well-being scores of more than 42. Among participants, 87.7% (n=114) were hospitalized for 14 to 30 days and 12.3% (n=16) for more than 30 days. However, there was no statistically significant association between the duration of hospital stay and mental well-being (p=0.072).

Table 1. Comparison of mental well-being according to length of hospital stay, disease category, food source, monthly income, and alcohol use

Variables		**Mental well-being (%)**			**P-value**
		Satisfactory	**Unsatisfactory**	**Very good**	
Length of hospital stay	<1 month(n=114)	33 (28.9%)	17 (14.9%)	64 (56.1%)	0.072
	>1 month(n=16)	7 (43.7%)	2 (12.5%)	7 (43.7%)	
Disease category	Medical (n=43)	13(30.2%)	13(30.2%)	17(39.5%)	0.051
	Surgical (n=8)	3(37.5%)	2(25%)	3(37.5%)	
	Orthopedic(n=79)	24(30.3%)	4(5%)	51(64.5%)	
Food source	Hospital (n=78)	28(35.9%)	10(12.8%)	40(51.3%)	0.066
	Home (n=52)	12(23.1%)	9(17.3%)	31(59.6%)	
Monthly income (LKR)	<5000(n=8)	3(37.5%)	3(37.5%)	2(25%)	0.027
	5000-14999 (n=69)	27(39.1%)	9(13%)	33(47.8%)	
	15000-34999 (n=48)	9(18.7%)	7(14.6%)	32(66.7%)	
	35000-75000 (n=5)	1(20%)	0	4(80%)	
Alcohol use	Yes (n=44)	22(50%)	7(15.9%)	15(34.1%)	< 0.001
	No (n=86)	18(20.9%)	12(14%)	56(65.1%)	

After categorizing diseases into medical, orthopedic, and surgical categories, orthopedic patients had higher mental well-being scores compared to the other two categories. According to this study, even though there was a statistically significant association between having better mental well-being scores and a better hospital environment ($p<0.001$), there was no such association with a better home environment ($p>0.05$). Regarding the source of food, the majority of patients (n=78; 60%) who consumed hospital-cooked food had better mental well-being scores. Better mental well-being scores had a statistically significant association with higher monthly income ($p<0.05$) and alcohol abstinence ($p<0.01$) (Figures 2 and 3). However, there was no statistically significant association between mental well-being and distance from

Table 2. Statistical analysis of mental well-being score with length of hospital stay, disease category, food source, monthly income, and alcohol use.

Variables		Mean mental well-being score	Standard deviation	95% confidence interval	Effect size
Length of hospital stay	<1 month(n=114)	66.75	24.08	62.3 - 71.2	
	>1month(n=16)	63.43	22.99	52.1- 74.7	0.141
Disease category	Medical (n=43)	56.37	27.31	48.2 - 64.5	
	Surgical (n=8)	57.37	27.15	38.6 - 76.2	0.317
	Orthopedic(n=79)	72.68	19.29	68.4 - 76.9	
Food source	Hospital (n=78)	65.82	23.07	60.7 - 70.9	0.054
	Home (n=52)	67.13	25.28	60.3 - 74	
Monthly income (LKR)	<5000(n=8)	49.25	27.09	30.4 - 68	
	5000-14999(n=69)	64.61	22.96	59.2-70	
	15000-34999(n=48)	70.33	24.23	63.5 - 77.2	
	35000-75000(n=5)	79.40	14.76	66.5 - 92.3	0.249
Alcohol use	Yes (n=44)	59.16	22.53	52.5 - 65.8	0.468
	No (n=86)	70.02	23.85	65 - 75.1	

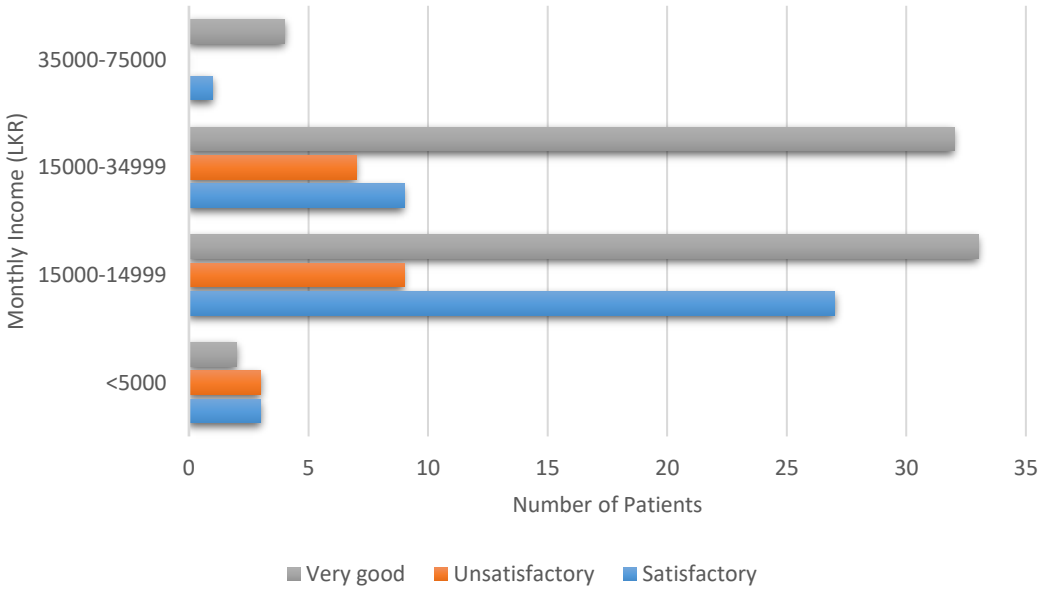

Figure 2. Mental well-being with monthly income

home to hospital (p=0.081) (Figure 4). After categorizing according to mental well-being score, 14.6% of patients obtained unsatisfactory mental well-being scores, 30.8% satisfactory mental well-being, and 54.6% very good mental well-being. Thus, the results did not show a significant relationship between the level of mental well-being and prolonged hospitalization.

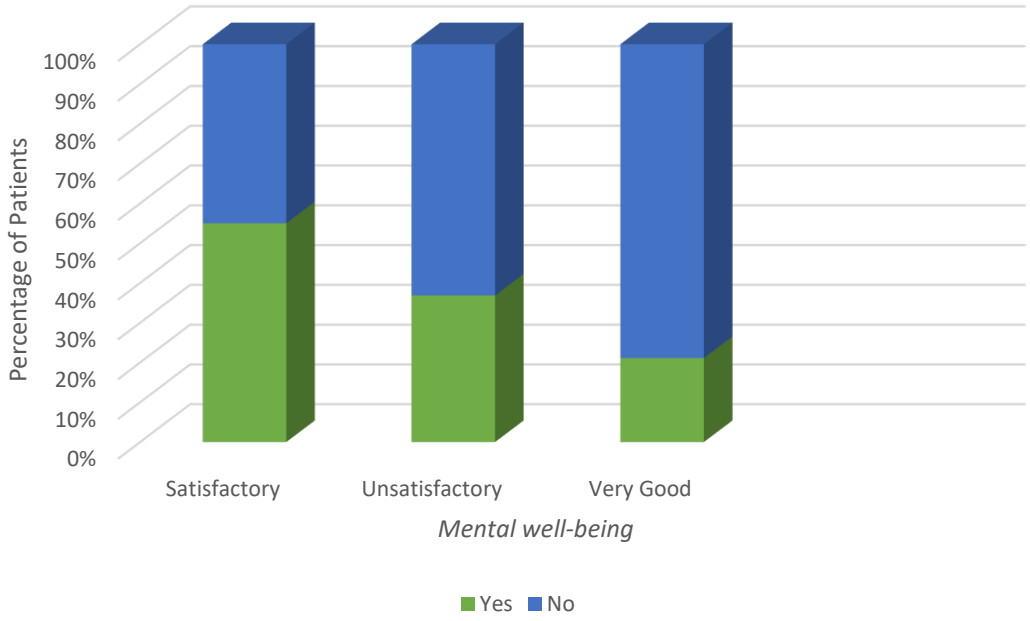

Figure 3. Mental well-being with alcohol use

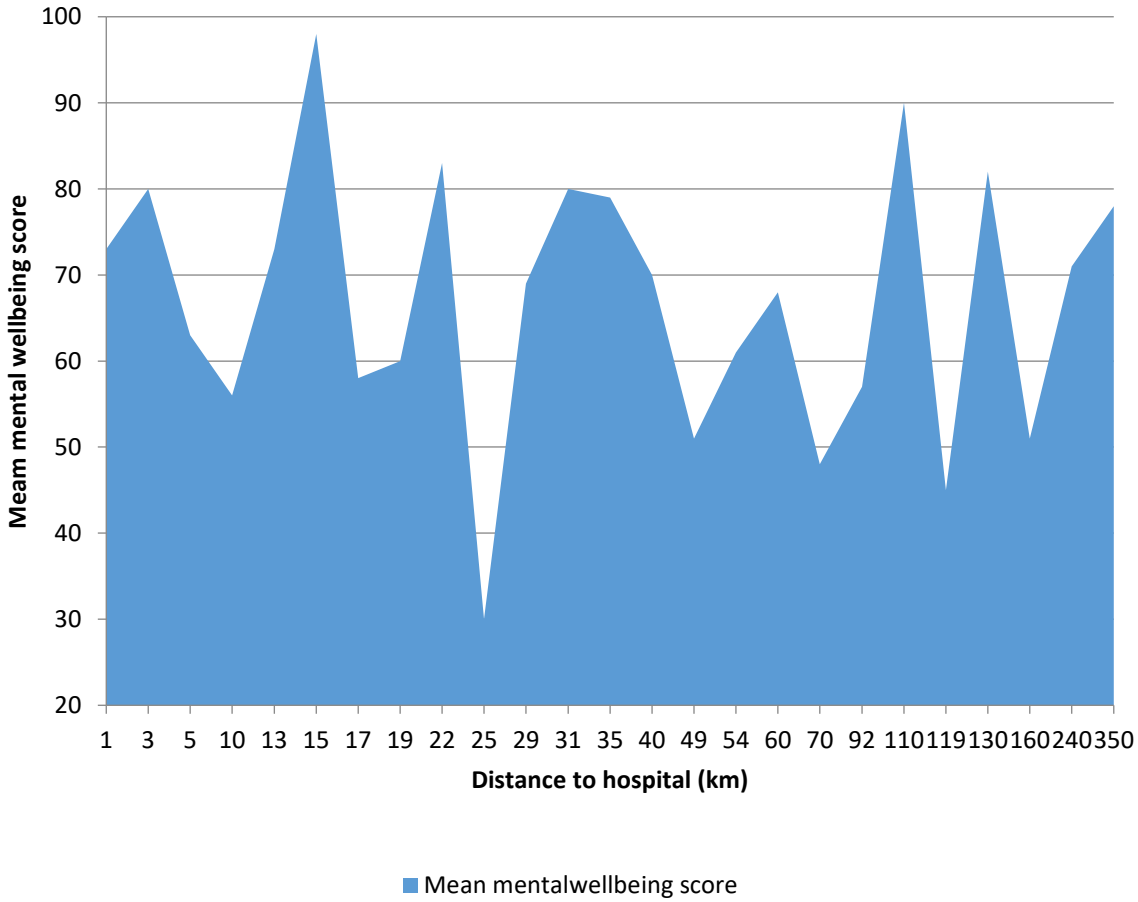

Figure 4. Mental well-being with distance to hospital

Discussion

The main aim of this study was to find out how prolonged hospitalization affects the mental well-being of patients. The results did not show a significant relationship between prolonged hospitalization and mental well-being score, as there were even higher mental well-being scores in patients with longer durations of hospital stay. It was found that patients with the longest hospital stay were mostly orthopedic patients, and they also had the highest mental well-being scores. This could be due to most of them having potentially reversible conditions, such as fractures with internal and external fixations, and they know that they would completely recover eventually. On the contrary, patients in medical wards did not stay in the hospital as long as orthopedic patients. However, most of them had potentially incurable conditions such as systemic lupus erythematosus, stroke, chronic renal failure, etc. They had relatively low mental well-being scores as they know that they will not completely recover. Turner et al. posit depression rates among patients admitted for acute care and among patients with cancer can exceed 30%, compared with a prevalence of depression in the community of about four to eight percent (11). It is clear that, rather than the duration of hospital stay, it is the type of illness that determines mental well-being of patients with prolonged hospitalization.

Only five percent of orthopedic patients had unsatisfactory mental well-being during their hospital stay. In contrast to the results of this study, Bhandari et al. posit one in five orthopedic trauma patients met the criteria for psychological illness following discharge from the hospital (18). Among patients in medical wards, only 30% had unsatisfactory mental well-being. Mental well-being scores of surgical patients stayed between the other two categories, with 25% of them having unsatisfactory mental well-being. So, overall, only 14% of patients had unsatisfactory mental well-being. Therefore, this study concluded that mental well-being of prolonged hospitalized patients is fairly satisfactory. This study also adds that hospital environment, monthly income, and alcohol usage can significantly affect the mental well-being of prolonged hospitalized patients.

A Canadian study showed that mental and physical health are fundamentally linked, and people with chronic physical health conditions experience depression and anxiety at twice the rate of the general population (19). This correlates with the findings of this study, as mental well-being scores are fairly low in patients with chronic medical conditions. Other studies also found that poor physical health brings an increased risk of depression, as do social and relationship problems that are very common among chronically ill patients (20). Similarly, we identified an association between the source of patients' food and their mental wellbeing score, where it was above 42 in patients whose family members brought them food every day, which elaborates the effect of social relationships on mental well-being. We also observed a statistically significant association between monthly income and mental well-being. Possibly, this is because of the ability to bear expenditures during the hospital stay. Similar to this study, Haghparsat-Bidgoli et al. posit the mean length of hospital stay of patients with insurance to be more than patients without insurance (21).

Conclusion

This study assessed factors affecting the mental well-being of prolonged hospitalized patients in a tertiary care hospital in Sri Lanka. The majority of patients with prolonged duration of stay were from orthopedic wards, and those with low mental well-being scores were from medicine wards. The level of mental well-being among orthopedic patients was higher than that of patients in general medical and surgical wards. Further, there was no association between level of mental well-being and length of hospital stay. The main implication of this study was to identify whether there is poor mental well-being in patients with prolonged hospitalization as its prevention will help improve patients' overall health, as health is not just merely being free of physical illnesses.

Limitations and recommendations

The main limitation of the current study was the lack of generalizability of the results, since it is a single institution-based study. Nevertheless, the results are of major importance and significance to the local populations of a developing country like Sri Lanka. Further studies, such as multi-centric studies, may be needed to validate its results.

Conflict of Interest

The author declares that there is no conflict of interest regarding the publication of this paper.

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Appendix 1

Mental well-being scoring system

Part-1

Please mark (X) in the appropriate column for each question/statement.

0 - None of the time
1 —Rarely
2 - Some of the time
3 — Often
4 –All of the time

	0	1	2	3	4
I've been feeling optimistic about the future					
I've feeling useful					
I've been feeling relaxed					
I've been feeling interested in other people					
I've had the energy to spare					
I've been dealing with problems well					
I've been feeling good about myself					
I've been feeling close to other people					
I've been feeling confident					
I've been able to make up my mind about things					
I've been feeling loved					
I've been interested in new things					
I've been feeling cheerful					

(score= /52)

Part-2

0 - Nearly every day
1 - More than half the days
2 - Several days
3 —Not at all

	0	1	2	3
How often have you been bothered by trouble concentrating on things, such as reading the newspaper or watching television?				
How often have you been bothered by feeling nervous, anxious, or on edge?				
How often have you been bothered by having trouble relaxing?				
How often have you had little interest or pleasure in doing things?				
How often have you been bothered by not being able to stop or control worrying?				
How often have you been bothered by becoming easily annoyed or irritable?				
How often have you been bothered by moving or speaking so slowly that other people could have noticed, or the opposite being so fidgety or restless that you have been moving around a lot more than usual?				
How often have you been bothered by feeling down, depressed or hopeless?				
How often have you been bothered by feeling tired or having little energy?				

How often have you been bothered by being so restless that it is hard to sit still?				
How often have you been bothered by feeling bad about yourself, or that you are a failure, or have let yourself or your family down?				
How often have you been bothered by worrying too much about different things?				
How often have you been bothered by poor appetite or overeating?				
How often have you been bothered by feeling afraid as if something awful might happen?				
How often have you been bothered by trouble falling or staying asleep, or sleeping too much?				

(score= /45)

Part-3

Have you ever been bothered by worrying about any of the following? (underline appropriate)

- Your health (Yes / No)
- Your weight or how you look (Yes / No)
- Little or no sexual desire or pleasure during sex (Yes / No)
- Difficulties with your partner (Yes / No)
- The stress of taking care of family members (Yes / No)
- Stress at work, school, or outside the home (Yes / No)
- By financial problems or worries (Yes / No)
- Something bad that happened recently (Yes / No)

(score= /08)

Total score= /108