Original article

# Psychosocial Correlates and Treatment Compliance in Depressive Disorder: A Hospital Based Study

**Rana M**

Department of Psychiatry & Mental Health, Tribhuvan University Teaching Hospital, Institute of Medicine, Kathmandu, Nepal.

**Correspondence:** Dr. Mita Rana

**Email:** ranamita@yahoo.co.uk

## Abstract

**Introduction:** Depressive disorder is a common mental illness seen in hospitals and mental health services in Nepal. The aim of the study was to determine the psychosocial correlates and treatment compliance in depressive disorder patients, coming to Tribhuvan University Teaching Hospital, Kathmandu, Nepal.

**Methods:** Psychosocial profiles of 135 depressive disorder patients diagnosed by consultant psychiatrist according to ICD-10 and meeting the study criteria, attending out-patient clinic, Department of Psychiatry and Mental Health, Teaching Hospital, were included. The study sample were randomized into three different groups; i.e. cognitive behavior therapy, pharmacotherapy or combined therapy (receiving both cognitive behavior therapy and pharmacotherapy). Psychosocial correlates, illness characteristics and treatment compliance in depressive disorder were assessed by Semi-Structured Interview Schedule, Beck Depression Inventory, Automatic Thought Questionnaire-Revised and Visual Analogue Scale, by comparing the pre and post therapy results and drop- out rates.

**Results:** Before therapeutic interventions, 53(39.3%) had moderate, 47(34.8%) had severe depressive and 35(25.9%) had mild depressive symptoms. Negative automatic thoughts, hopelessness, anxiety and inability coping; low socio-economic assets and education; relationship and adjustment problems and significant life events were significant psychosocial correlates of depression. Compliance was poor in the pharmacotherapy group. Total 30 (22.2%) patients had dropped-out during the study period: 15(33%) from pharmacotherapy, 11(24%) from Cognitive Behavior Therapy and 6(13%) from combined therapy group.

**Conclusion:** Psychosocial factors were significantly correlated with depressive disorder. Compliance to treatment and recovery was better in the combined therapy group than either therapy alone

**Key Words:** Psychosocial correlates, Treatment compliance, CBT.

## Introduction

Depression is one of the most prevalent psychological disorders. It is a significant contributor to the global burden of disease and affects people in all communities across the world. Today, depression is estimated to affect 350 million people. While depression is the leading cause of disability for both males and females, the burden of depression is 50% higher for females than males. In fact, depression is the leading cause of disease burden for women in both high-income and low- and middle-income countries.[1] Low-income people and especially people living near the poverty line are under great psychosocial stress can contribute on the onset of a depressive disorder.[2]

Treatment of mental illness generally and depressive

illness specifically has remained marginal in Nepal. Many opt for traditional healing methods compared to pharmacotherapy or may not seek treatment at all and very few opt for psychotherapy. Mental illness is highly stigmatized: people are either skeptical or unaware of the optimal treatment modalities; i.e. pharmacotherapy or psychotherapy.[3, 4, 5]

Despite the known effectiveness of treatment for depressive disorder, majority of people in need do not receive it. Where data is available, this is globally fewer than 50%, but fewer than 30% for most regions and even less than 10% in some countries. Barriers to effective care include the lack of resources, lack of trained providers, and the social stigma associated with mental disorders. [6]

TUTH is one of the very few hospitals in Nepal, which provides both psychiatry and clinical psychological services at the Department of Psychiatry and Mental Health.[7] With most of the specialist services and almost 1000 beds now, Tribhuvan University Hospital is currently the largest hospital in the country, providing new tertiary level health service and provides teaching and research activities of the Institute of Medicine (IOM) which was established in 1972.

## Method

The research objective was to determine the psychosocial correlates and treatment compliance of depressive disorder patients attending a hospital setting. The site of the main research was the outpatient services of the Department of Psychiatry and Mental Health at Tribhuvan University Teaching Hospital, Kathmandu, Nepal from June 2008 to May 2009. Depressive disorders (mild, moderate, severe without psychotic symptoms and suicidal attempts) diagnosed by consultant psychiatrist according to ICD-10-DCR criteria,[8] obtaining scores above the cut off score on the Beck Depression Inventory (BDI); i.e. 15 and above, aged 15 yrs. (targeting late adolescence) and above, literate, who gave consent to participate and be available during the study phase (16 weeks) were included in the study. 232 cases of depressive disorder met the diagnostic and the study criteria but only 135 depressive disorder patients gave consent and their availability for the study period (16 weeks) were included. They were randomly distributed to one of the three intervention groups: (i) CBT Group I (n=45) (ii) Pharmacotherapy Group II (n=45) (iii) CBT & Pharmacotherapy Group III (n=45) consecutively.

CBT was intervened for 12-16 weekly sessions and pharmacotherapy was intervened at 0, 2,6,12 &16 sessions. Fluoxetine and Amitriptyline were the antidepressants used for pharmacotherapy and a few cases received benzodiazepines in combination. Assessment was convened at the beginning and at the end of four months therapy for each of the three treatment modalities. Ethical clearance was taken from the Institutional Review Board (IRB), Institute of Medicine, Tribhuvan University before initiating the research and the ethical guidelines were well considered.[9]

Most of the tools used were translated Nepali versions and had been utilized in the Nepalese population. The semi-structured interview schedule was used to record the socio-demographic profile and case- history (bio-psycho-social) of the patient. Beck Depression Inventory (BDI) was used which had been translated and validated and popularly utilized in the Nepalese population, is a 21 item self-rated questionnaire that describes common symptoms of depression. [10, 11, 12] The Automatic Thought Questionnaire Revised (ATQ-R) was used which is a measure of frequency of cognitive self-statements associated with depressed mood which includes 30 negative self-statements theoretically associated with depression and taken from the original version of the ATQ.[13] Visual Analogue Scale (VAS) was used which is a very specific technique particular in cognitive behavioral therapy to assess the severity of symptoms as felt by the subject during particular period. This study analysed only the psychosocial profiles, illness characteristics and treatment compliance of the patients, assessed by outcome measures as the BDI, ATQ-R and VAS.

## Statistical Analysis

SPSS version 11.7 version for windows was used for analysis. The analysis included ANOVA, $X^2$, t-tests and correlation analysis. Data was expressed in terms of proportion or percentages in the three intervention groups.

## Results

**Table 1. Personal and socio-demographic profiles.**

| Characteristics | CBT n =45(%) | Pharmaco-therapy n=45 (%) | CBT & Pharmaco- therapy n=45 (%) | Total N=135 (%) | $X^2$ | p-value |
|---|---|---|---|---|---|---|
| **Age** | | | | | | |
| 15-25 years | 20(44.4) | 16(35.6) | 22(48.9) | 58(43.0) | 3.67 | 0.886 |
| 26-35 yrs | 15(33.3) | 17(37.8) | 14(31.1) | 46(34.1) | (df=8) | NS |
| Others* | 10( 22.3) | 12 (26.6) | 9( 20.0) | 31(22.9) | | |
| **Sex** | | | | | | |
| Male | 19(42.2) | 24(53.3) | 18(40.0) | 61(45.2) | 1.854 | 0.396 |
| Female | 26(57.8) | 21(46.7) | 27(60.0%) | 74(54.8) | (df=2) | NS |
| Total N (%) | 45(100.0) | 45(100.0) | 45(100.0) | 135(100.0) | | |
| **Marital status** | | | | | | |
| Single | 23(51.1) | 16(35.6) | 23(51.1) | 62(45.9) | 8.404 | 0.21 |
| Married | 22(48.9) | 26(57.8) | 20(44.4) | 68(50.4) | (df=6) | NS |
| Others * | --------- | 3 (6.6) | 2(4.4) | 5(3.70) | | |
| **Religion** | | | | | | |
| Hindu | 37(82.2) | 39(86.7) | 40(88.9) | 116(85.9) | 5.978 | 0.65 |
| Others* | 8 (17.8) | 6 (13.3) | 5(11.1) | 19(14.1) | (df=8) | NS |
| **Caste** | | | | | | |
| Brahamin | 13(28.9) | 21(46.7) | 20(44.4) | 54(40.0) | 27.605 | .035* |
| Kshatriya | 5(11.1) | 8(17.8) | 6(13.3) | 19(14.1) | (df=16) | (p<0.01) |
| Newar | 7(15.6) | 12(26.7) | 9(20.0) | 28(20.7) | | |
| Others* | 20(44.4) | 4(8.9) | 10(22.2) | 34(25.2) | | |
| **Location of Residence** | | | | | | |
| Central | 14 (31.1) | 20 (44.4) | 18(40.0) | 52 (38.6) | 22.508 | .032* |
| Eastern | 9 (20.0) | 8 (17.8) | 3(6.6) | 20 (14.8) | (df=12) | (p<0.01) |
| Mid Eastern | 12 (26.7) | 6(13.3) | 12(26.7) | 30 (22.2) | | |
| Others* | 10(22.2) | 11(24.4) | 12(26.7) | 33(24.4) | | |
| **Education** | | | | | | |
| Higher secondary | 13(28.9) | 8(17.8) | 16(35.6) | 37(27.4) | 15 | 0.241 |
| Graduate | 14(31.1) | 14(31.1) | 18(40.0) | 46(34.1) | (df=12) | NS |
| Post –graduate | 11(24.4) | 10(22.2) | 6(13.3) | 27(20.0) | | |
| Others* | 7(15.6) | 13(28.9) | 5(11.1) | 25(18.5) | | |
| **Occupation** | | | | | | |
| Student | 14(31.1) | 6(13.3) | 12(26.7) | 32(23.7) | 22.026 | 0.231 |
| Housewife/ homemaker | 12(26.7) | 11(24.4) | 9(20.0) | 32(23.7) | (df=18) | NS |
| Others* | 19 (42.2) | 29(64.4) | 24(53.3) | 71(52.6) | | |
| **Socio-economic condition** | | | | | | |
| Half to 1 million | 8(17.8) | 10(22.2) | 8(17.8) | 26(19.3) | 5.178 | 0.521 |
| Up to 5 million | 25(55.6) | 28(62.2) | 32(71.1) | 85(63.0) | (df=6) | NS |
| Others* | 12(26.7) | 7(15.6) | 5(11.1) | 24(17.7) | | |
| **Type of family** | | | | | | |
| Nuclear | 13(28.9) | 16(35.6) | 7(15.6) | 36(26.7) | 13.067 | .042* |
| Joint | 27(60.0) | 29(64.4) | 34(75.6) | 90(66.7) | (df=6) | (p<0.01) |
| Others* | 5(11.1) | ----- | 3(6.8) | 9 (6.6) | | |
| **Mental Illness in family** | | | | | | |
| No | 34(75.6) | 33(73.3) | 32(71.1) | 99(73.3) | 2.742 | 0.949 |
| Yes | 11(24.4) | 12(26.7) | 13(18.9) | 36(26.7) | (df=8) | NS |
| **Personality Traits** | | Male (n %) | Female (n %) | Total (N=135%) | | |
| Introvert | | 36(59.0) | 40(54.05) | 76(56.29) | | |
| Extrovert | | 25(40.9) | 34(45.94) | 59(43.70) | | |
| Total (%) | | 61(100.0) | 74(100.0) | 135(100.0) | | |

NS=Not significant; Significant at *p<0.01 level; Others*= other characteristics

Illustrates the major findings of personal and socio-demographic profiles.

**Table 2. Life events, stressors and type of stressors**

| Characteristics | CBT n (%) | Pharmaco therapy n (%) | CBT & Pharmac therapy n (%) | Total n (%) | $X^2$ | p-value |
|---|---|---|---|---|---|---|
| **Life Events** | | | | | | |
| Yes | 37(82.2) | 32(71.1) | 30(66.7) | 99(73.3) | | |
| Not significant | 8(17.8) | 13(28.9) | 15(33.3) | 36(26.7) | 2.955 | 0.228 |
| Total | 45(100.0) | 45(100.0) | 45(100.0) | 135(100.0) | (df=2) | NS |
| **Stressors** | | | | | | |
| No | 4(8.9) | 6(13.3) | 7(15.6) | 17(12.6) | | |
| Yes | 41(91.1) | 39(86.7) | 38(84.4) | 118(87.4) | 0.942 | 0.624 |
| Total N (%) | 45(100.0) | 45(100.0) | 45(100.0 | 135(100.0) | (df=2) | NS |
| **Type of Stressors** | | | | | | |
| Relationship | 19(42.2) | 12(26.7) | 15(33.3) | 46(34.1) | | |
| Adjustment | 5(11.1) | 5(11.1) | 7(15.6) | 17(12.6) | | |
| Financial crisis | 1(2.2) | 4(8.9) | | 5(3.7) | | |
| Failure/ loss/death | 6(13.3) | 6(13.3) | 1(2.2) | 13(9.6) | 13.975 | 0.302 |
| Abuse or Trauma | 1(2.2) | 3(6.7) | 4(8.9) | 8(5.9) | (df=12) | NS |
| Other (psychosocial) | 9(20.0) | 9(20.0) | 11(24.4) | 29(21.5) | | |
| Not significant | 4(8.9) | 6(13.3) | 7(15.6) | 17(12.6) | | |
| Total N (%) | 45(100.0) | 45(100.0) | 45(100.0) | 135(100.0) | | |

NS= Not Significant.

73.3% (n=99) patients had experienced significant life events and 87.4%, (n=118) had significant psycho-social stressors. Among other stressors, relationship problems was mostly indicated (34.1%; n=46)

**Table 3. Duration of illness before seeking treatment**

| Characteristics | CBT n (%) | Pharmaco-therapy n (%) | CBT& Pharmaco-therapy n (%) | Total n (%) | $X^2$ | p-value |
|---|---|---|---|---|---|---|
| **Duration before treatment** | | | | | | |
| **2weeks** | - | - | 1(2.2) | 1(.7) | | |
| **1month** | 3(6.7) | 3(6.7) | 7(15.6) | 13(9.6) | | |
| **2months** | 13(28.9) | 11(24.4) | 13(28.9) | 37(27.4) | | |
| **3months** | 10(22.2) | 6(13.3) | 5(11.1) | 21(15.6) | | |
| **4months** | 7(15.6) | 11(24.4) | 5(11.1) | 23(17.0) | 18.504 | **0.295** |
| **5months** | 1(2.2) | 1(2.2) | 3(6.7) | 5(3.7) | (df=16) | **NS** |
| **6 months** | 9(20.0) | 9(20.0) | 8(17.8) | 26(19.3) | | |
| **7 months** | 2(4.4) | - | - | 2(1.5) | | |
| **8 months** | - | 4(8.9) | 3(6.7) | 7(5.2) | | |
| **Total N (%)** | 45(100) | 45(100) | 45(100) | 135(100) | | |

NS= Not Significant.

Most of the cases (82.9%, n=112) came for treatment to the hospital only after 2-6 months of duration of illness.

**Table 4. Number of therapy sessions (weeks) & dropout**

| Characteristics | CBT n (%) | Pharmaco-therapy n (%) | CBT& Pharma-cotherapy n (%) | Total n (%) | $X^2$ | p-value |
|---|---|---|---|---|---|---|
| **No. of therapy sessions(weeks)** | | | | | | |
| 2 sessions (week) | 3(6.7) | 8(17.8) | 3(6.7) | 14(10.4) | | |
| 4 sessions (weeks) | 6(13.3) | 4(8.9) | 2(4.4) | 12(8.9) | | Dropouts |
| 6 sessions (weeks) | 0(.0) | 1(2.2) | 1(2.2) | 2(1.5) | | |
| 8 sessions (weeks) | 0(.0) | 2(4.4) | 0(.0) | 2(1.5) | | |
| **Total drop-out: n (%)** | 9(20) | 15(33.3) | 6(13.3) | 30(22.2) | | |
| 12 sessions (weeks) | 4(8.9) | 0(.0) | 5(11.1) | 9(6.7) | | |
| 14 sessions (weeks) | 2(4.4) | 0(.0) | 3(6.7) | 5(3.7) | | |
| 15 sessions (weeks) | 0(.0) | 0(.0) | 7(15.6) | 7(5.2) | 32.895 | .003* |
| 16 sessions (weeks) | 30(66.7) | 30(66.7) | 24(53.3) | 84(62.2) | (df=14) | (p<0.01) |
| Total N (%) | 45(100.0) | 45(100.0) | 45(100.0) | 135(100.0) | | |

Significant at *p<0.01 level

62.2% (n=84) completed 16 sessions of interventions (therapy); 10.4% (n=14) dropped out after the very first session, 8.8% (n=12) dropped out after the second session and 2 each dropped out after the third and fourth sessions/ weeks. There were total of 22.2% (n=30) dropouts.

**Table 5. Correlations of Socio-demographic and illness variables**

| Variables | Socio-economic conditions | Stressors | Duration before treatment |
|---|---|---|---|
| **Age** | .345** | -.015 | .183* |
| **Education** | .367** | .065 | .152 |
| **Life events** | -.002 | .602** | -.029 |

* Pearson Correlation is significant at the 0.05 level (2-tailed).

** Pearson Correlation is significant at the 0.01 level (2-tailed).

Education had significantly high positive correlation with socio-economic-status. Life events had significantly high positive correlation with stressors.

**Table 6. Correlations between psychosocial and illness variables and outcome measures of depression**

| Variables | BDI | VAS | ATQ | ATQ-R (F1) | ATQ-R (F2) | ATQ-R (F3) |
|---|---|---|---|---|---|---|
| Age | -.123 | -.098 | -.103 | - .071 | -.140 | -.236** |
| Education | -186* | -.028 | .002 | .018 | -.018 | -.098 |
| Socio-economic- status | -192* | -.169 | -.044 | -.040 | .000 | -.054 |
| Life events | .088 | .174* | -.079 | -.047 | -.166 | -.083 |
| Stressors | .042 | .156 | .049 | .145 | .056 | .025 |
| F/ history of mental illness | .074 | .150 | .048 | .067 | .024 | -.068 |
| Illness duration before treatment | .143 | .070 | .108 | .075 | .063 | .056 |
| No. of therapy sessions | .154 | .228** | .218* | .202* | .192* | .078 |

* Pearson Correlation is significant at the 0.05 level (2-tailed).

** Pearson Correlation is significant at the 0.01 level (2-tailed).)

(ATQ-R) = Automatic Thought Questionnaire-Total Negative thoughts; (F1) = Depression/Hopelessness; (F2) = Inability coping; (F3) = Anxiety

Depression was significantly negatively correlated with education and socio-economic-status and significantly positively correlated with family history of mental illness. Anxious thoughts were significantly negatively correlated with age. Number of therapy sessions was positively correlated with anxious negative thoughts and with depression and hopelessness.

**Table 7. Level of depression according to sex distribution**

| Pre- therapy BDI score | Sex | Normal (0-9) | Mild depression (10-18) | Moderate Depression (19- 29) | Severe Depression (above 30) | Drop-outs | Total N (%) |
|---|---|---|---|---|---|---|---|
| | Male n (%) | ------ | 16(26.2%) | 25(41.0%) | 20(32.8%) | ------- | 61(100.0%) |
| | Female n (%) | ----- | 19(25.7%) | 28(37.8%) | 27(36.5%) | ------- | 74(100.0%) |
| | Total N (%) | ------ | 35(25.9%) | 53(39.3%) | 47(34.8%) | ------- | 135(100.0%) |
| **Post- therapy** | Male n (%) | 29(47.5%) | 13(21.3%) | 1(1.6%) | 0(.0%) | 18(29.5%) | 61(100.0%) |
| **BDI score** | Female n (%) | 46(62.2%) | 13(17.6%) | 1(1.4%) | 2(2.7%) | 12(16.2%) | 74(100.0%) |
| | Total n (%) | 75(55.6%) | 26(19.3%) | 2(1.5%) | 2(1.5%) | 30(22.2%) | 135(100.0%) |

Both males and females were moderately (39.3%) to severely (34.8%) depressed prior to the interventions but significantly improved and had no depression (55.6%) after interventions.

**Table 8. Pre and Post- therapy assessment scores of intervention groups**

| Measures & Intervention groups | Pre-therapy scores Mean(SD) | Post- therapy scores Mean(SD) | Mean (SD) Difference | t-test | Sig. (2-tailed) |
|---|---|---|---|---|---|
| **Beck Depression Inventory(BDI)** | | | | | |
| CBT | 23.67(8.152) | 7.69(6.480) | 15.97(7.542) | 12.706** | .000 |
| Pharmacotherapy | 28.50(9.070) | 12.03(9.015) | 16.47(10.875) | 8.294** | .000 |
| CBT & Pharmacotherapy | 27.95(9.087) | 6.13(5.606) | 21.82(8.510) | 16.01** | .000 |
| **Visual Analogue Scale(VAS)** | | | | | |
| CBT | 6.97(.971) | 1.19(1.369) | 5.78(1.245) | 27.852** | 0.000 |
| Pharmacotherapy | 7.23(.935) | 1.90(1.647) | 5.33(1.988) | 14.691** | 0.000 |
| CBT & Pharmacotherapy | 7.51(.997) | .82(1.295) | 6.69(1.490) | 28.059** | 0.000 |
| **Automatic Thought Questionnaire-Revised(ATQ-R) Negative thoughts** | | | | | |
| CBT | 90.47(22.877) | 49.47(16.530) | 41.00(20.526) | 11.985** | 0.000 |
| Pharmacotherapy | 92.20(16.973) | 60.40(17.214) | 31.80(18.077) | 9.635** | 0.000 |
| CBT & Pharmacotherapy | 92.85(19.544) | 47.08(13.186) | 45.77(19.034) | 15.017** | 0.000 |

Significant at *p<0.01 & **p<0.001 level

All three intervention groups showed significant improvements in the outcome measures; however the combined therapy group showed significantly higher improvements at post therapy assessments.

## Discussion

Depressive illness was significantly predicted by psycho-social and illness variables in this study. Prevalence and onset of depressive illness was identified at a young age (15-35 years) which has to be considered as a precursor to Disability Adjusted Life Years (DALY's). Most of other researches conducted in Nepal have projected similar age group to be mostly affected by mental illnesses.[14] Other researchers have also shown prevalence rates higher in adolescents and young adults and they have also emphasized on the role of readiness to change in response to treatment to be an important factor for better treatment outcome in adolescent depression.[15]

There were higher representations of females (n= 74, 54.8%; Table 1) and it has been studied that many factors that contribute to the unique picture of depression in women—from reproductive hormones to social pressures to the female response to stress.[16, 17] It is believed that certain factors, such as maintaining multiple roles as home-makers, professionals, wives, and mothers may explain the higher frequency of depression in women.[18] Multiple roles and responsibilities taken up by young adults in Nepal, especially by women, were observed to be additional social stressors in this study, an important social cause for the etiology of depression.[19,20]

Most constituted joint families (n=90, 66.7%; Table 1), however, with increasing literacy rates and economic demands, both men and women are seeking more independence from the traditional socio-cultural norms and this has affected marital and family relationships.[21] The relationship of marriage and the onset of depression may be complex, with many associated variables such as quality of relationship, partnership, children and adequacy of support during crises determining the outcome. This study is supported by similar findings: significant life events and stressors are faced by the depressed patients prior to the onset of depressive illness, mainly in relationships.[16, 22, 23]

There have been studies that have shown personality characteristics of depressive patients to determine their coping abilities in stressful life events and their treatment compliance. In this study, both males (n=36, 59.0%) and females (n=40, 54.05%) were more introverts (n=76, 56.2%) than extroverts (Table 1). Personality traits of self-criticism or dependency moderate the effect of stressful life events and lowered treatment response.[24]

Despite the seriousness of depression as a disease and with the availability of effective treatment, only 30% of patients worldwide receive appropriate care.[25] Regrettably the situation is much worse in the South East Asian Region and was found to be similar in the Nepalese context too.[26] Nepal has only one Mental Hospital located in the capital, Kathmandu. There is scarcity of mental health professionals and psychiatry and psychology services are significantly negligible. Unlike developed countries, in Nepal, many depressed patients do not seek treatment at all or may opt for traditional healing methods instead. Psychotherapy is relevantly a new treatment modality not well known nor acclaimed, as much as pharmacotherapy.

Only 58.1% (n=135) actually consented and participated in this study among 232 cases meeting the study criteria. 52 were willing but refused because of the difficulty in coming for therapy primarily because they were from outside of Kathmandu; 28, refused to give consent for participation; 17, deferred therapy. 62.2 % (n=84) patients completed 16 sessions of interventions (therapy), 15.6 % (n=21) patients completed 12-15 sessions of interventions (Table 4). Patients coming less than eight sessions of therapy were considered as dropouts. Of this total (N=135), there were further 22.2% (n=30) dropouts during the study period (Table 4). More numbers of dropout were from the Pharmacotherapy group (33.3%) as compared to the CBT group (20%) or the combined CBT & Pharmacotherapy group (13.3%). Studies have indicated, the drop-out rates for pharmacotherapy are frequently 3 if not 6 times higher than for psychotherapy, and the side-effects for medications, even the SSRI's, are substantial and intrusive, whereas cognitive behavioral therapy has no known side effects.[27, 28]

Time taken to come for psychiatric treatment ranged from more than 2-6 months (Table 3) and most researches have demonstrated presence of a long time gap before seeking treatment in mental illnesses.[29] Dropout analyses of this study, highlights the reluctance, apprehension about side effects of medicines and social-stigma of the people to begin as well as continue with the psychiatric treatment; by not giving consent or deferring or dropping out of therapy and higher amount of people still opting for traditional healing methods. Lack of awareness, lower accessibility and availability of mental health services, lower education and economic conditions also indicate to be important variables determining treatment seeking behavior and compliance for the required period of time.[30,5,31]

Anxious thoughts significantly decreased with age. Patients having significantly higher negative automatic thoughts of hopelessness and inabilities coping subjectively rated their depression on a higher level and were found to adhere to treatment for a longer duration. Less educated people were found to be significantly more depressed

(Table 6). Patients had more moderate (n=53, 39.3%) to severe (n=47, 34.8%) level of depression at study entry. However, after therapeutic interventions, there was significant reduction in the depressive symptoms (Table 8). Each therapy was found to be significantly effective but combination of pharmacotherapy and psychotherapy (CBT) had comparatively better outcome among the three interventions (Table 9).This finding is in keeping with findings of many similar studies.[32,33]

Only one study site, small sample size, frequent dropouts, side-effect profile of medicines and cognitive therapy questionnaire not being included were some of the limitations of the study. Therefore, psychosocial profile analysis was constricted to available sample only. This study has imparted the present status of mental health facility in a hospital setting in the Nepalese context and has provided information on the characteristics of depressive illness and the duration of time that people take to seek treatment which generally affects the illness prognosis, i.e. (relapse, recurrence and remission). It not only necessitates psychological issues but brings forth socio- cultural, economic and traditional issues prevalent in the society which can be a cause and a consequence for both mental health and social problems. It has proven the efficacy of the therapeutic interventions, i.e. Pharmacotherapy, Psychotherapy and the combination of both these therapies in the treatment of depressive disorder in the Nepalese context.

**Summary & Conclusion**

Moderate to severe level of depressive symptoms, negative and anxious cognitions, depressive thoughts of hopelessness and difficulty in coping were primary psychological symptoms identified. Young educated adults aged 15-35 years, with introvert personality traits, more females, single men and women, in an educational career or married homemakers and housewives, from lower-middle socio-economic conditions showed more adjustment and relationship problems and faced significant social stressors. Personal and social factors contributed to depressive disorder. Most of these findings are supported by other researches done in mental illness in Nepal and elsewhere.[11] Unawareness, lack of psychiatry and psychological services and social stigma contributed to non-compliance to treatment. Impact of depressive illness in a person's quality of life, increasing the burden of illness and the reason depression ranks as one of the leading illnesses is well proven. It also emphasizes upon the necessity for suitable and congenial psychosocial environments for primary prevention of the illness in particular. There was significant improvement in all three interventions but patients complied with treatment better when psychological interventions were combined with medicines and there was significant improvement in their depressive symptoms.

In conclusion, it can be stated that, psychosocial factors are significantly correlated with depressive disorder. We need to strengthen our health and community services to respond to depression and the many factors that cause it including socioeconomic and psychosocial factors in a holistic way. Psycho-education, psycho- social assessment and formulation and psychotherapeutic intervention, mainly i.e. cognitive behavior therapy implemented in combination with pharmacotherapy in depressive illness has a better outcome. These findings highlight the efficacy of treatment modalities for depression in the Nepalese context and the impact depressive disorder has in the symptoms pattern, frequency, treatment seeking behavior and prognosis. These indicators need to be considered for a holistic approach (bio-psycho-social) in the prevention and proper treatment of depressive disorder. This means that we must include health promotion, social interventions, early diagnosis and appropriate treatment and above all give service users, their families and communities hope by tackling stigma and improving access to treatment.

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## References

1. WHO.World Health Organization. The Global Burden of Disease 2004 update. 2008;
2. World Health Organization. Financial crisis and global health: report of a high-level consultation. 2009; Geneva, World Health Organization.
3. Nepal, M.K. Editorial: Mental Health in Nepal. Nepalese Journal of Psychiatry. 1999; 1, 3-4.
4. Regmi SK, Pokharel A, Ojha SP, Pradhan SN, & Chapagain G Nepal mental health country profile. International Review of Psychiatr. 2004; 16, 142-149.
5. Shrestha MR Mental illness and stigma. Souvenir: IVth National Conference of Psychiatrists' Association of Nepal. 2010; 113-116.
6. World Health Organization. Sixty-fifth world health assembly 2012. http://www.who.int/mediacentre/events/2012/wha65/journal/en/index4.html.
7. Tribhuvan University Teaching Hospital. Tribhuvan University Teaching Hospital 15th Anniversary Souvenir. 1997; Maharajgunj, Kathmandu, Nepal.
8. World Health Organization. International Classification of Disease-10 Diagnostic Criteria for Research (ICD-10 DCR). 1992; WHO.

9. Institutional Review Board. Research Department, Institute of Medicine, Tribhuvan University. 2004; Kathmandu, Nepal.
10. Kohrt BA, Kunz RD, Koirala NR, Sharm, VD, & Nepal MK Validation of the Nepali version of Beck Depression Inventory. The Nepalese Journal of Psychiatry. 2001; 1, 2, 4.
11. Sharma SC, Sinha UK., Nepal MK, Koirala NR & Pradhan SN A study on the efficacy of Cognitive Behavior Therapy in Patients with Depressive Disorder. Nepalese journal of Psychiatry. 2001; 2, 19-27.
12. Beck AT, Ward CH, Mendelson M, Mock J & Erbaugh J An inventory for measuring depression. Archives of General Psychiatry. 1961; 4, 561–571.
13. Hollon SD, & Kendall PC Cognitive self-statements in depression: Development of an automatic thoughts questionnaire. Cognitive Therapy and Research. 1980; 4, 383-395.
14. Pokharel A, Pradhan SN, Chapagain G, Adhikari S, Ojha SP, Sharma VD, & Koirala NR Sociodemographic characteristics and diagnostic profile of patients admitted in psychiatric ward of Tribhuvan University Teaching Hospital, Kathmandu. Nepalese Journal of Psychiatry. 2001; 2, 13-18.
15. Lewis CC, Simons AD, Silva SG, Rohde P, Small DM, Murakami JL, High RR & March JS The role of readiness to change in response to treatment of adolescent depression. Journal of Consulting and Clinical Psychology. 2009; 77, 422-428.
16. Kendler KS, Karkowski LM & Prescot CA Causal relationship between stressful life events and the onset of major depression. American Journal of Psychiatry. 1999; 156, 837-841.
17. Patel V, Kirkwood BR, Pednekar S, Pereira B, Barros P, Fernandes J, Datta J, et al. Gender disadvantage and reproductive health risk factors for common mental disorders in women: a community survey in India. Archives of General Psychiatry. 2006; 63:404–413.
18. Bebbington PE Sex and depression. Psychological Medicine. 1998; 28, 1-8.
19. Kendler KS, Kessler RC, Neale MC, Heath AC, & Eaves LJ The Prediction of Major Depression in Women: Toward An Integrated Etiologic Model. American Journal of Psychiatry. 1993; 150, 1139-48.
20. Patel V, Chisholm D, Rabe-Hesketh S, Dias-Saxena F, Andrew G, Mann A Efficacy and Cost-Effectiveness of Drug and Psychological Treatments for Common Mental Disorders in General Health Care in Goa, India: A Randomised Controlled Trial. Lancet. 2003; 361(9351):33–39.
21. Cardemil EV, Kim S, Pinedo T, Miller IW, et al. Developing a Culturally Appropriate Depression Prevention Program: The Family Coping Skills Program. Cultural Diversity and Ethnic Minority Psychology. 2005; 11, 99-112.
22. Ezquiaga E, López AG, Dios C, Leiva A, Bravo M & Montejo J Clinical and psychosocial factors associated with the outcome of unipolar major depression: a one year prospective study. Journal of Affective Disorders. 2004; Vol. 79, Issue 1, Pages 63-70.
23. Rao N The Age of Melancholy: "Major Depression" and Its Social Origins. American Journal of Psychiatry. 2006; 163, 751-753.
24. Bulmash E, Harkness KL, Stewart JG, & Bagby RM Personality,stressful life events, and treatment response in major depression. Journal of Consulting and Clinical Psychology. 2009; 77, 1067-1077.
25. Campbell Kay N Depression Screening: An Effective Tool to Reduce Disability and Loss of Productivity. 2012.
26. World Health Report. 2000; 2001; 2004; Geneva: WHO.
27. Hotopf M, Hardy R, & Lewis G Discontinuation rates of SSRIs and tricyclic antidepressants: a metaanalysis and investigation of heterogeneity. British Journal of Psychiatry. 1997; 170, 120-7.
28. Peveler R, George C, Kinmouth AL, Campbell M, & Thompson C Effect of antidepressant drug counseling and information leaflets on adherence to drug treatment in primary care: randomized controlled trial. British Medical Journal. 1999; 319, 612-5.
29. Kohn R, Saxena S, Levav I, & Saraceno B. The treatment gap in mental health care. 104–109. Adherence in the treatment of depression. British Journal of Psychiatry. 2004; 82 (11):858-866.
30. Pampallona S, Bollini P, Tibaldi G, Kupelnick B, & Munizza C Patient adherence in the treatment of depression. British Journal of Psychiatry. 2002; 180:104-9.
31. Patel V, and R Thara eds. Meeting Mental Health Needs of Developing Countries: NGO Innovations in India. New Delhi: Sage; 2003.
32. Casacalenda N, Perry CJ, Looper K, et al. Remission in Major Depressive Disorder: A Comparison of Pharmacotherapy, Psychotherapy, and Control Conditions. American Journal of Psychiatry. 2002; 159, 1354-1360.
33. Petersen TJ Enhancing the efficacy of antidepressants with psychotherapy, Journal of psychopharmacology. 2006; vol. 20, No. 3, pp. 19-28.