ORIGINAL ARTICLE

ROLE OF BELIEF ABOUT AND ADHERENCE TO MEDICATION ON SYMPTOM SEVERITY AND QUALITY OF LIFE OF PATIENTS SUFFERING FROM MAJOR DEPRESSIVE DISORDER RESIDING AT URBAN AND RURAL AREAS OF WEST BENGAL

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ABSTRACT

BACKGROUND

Recovery from any illness (psychiatric and non-psychiatric) depends upon the adherence to treatment and this adherence is influenced by the belief system an individual possesses regarding the treatment.

AIM

The main thrust area of the present work is focusing how belief system about the medication influences adherence to medication, and how both of them individually influence severity of depression and quality of life of patients with Major Depressive Disorder (MDD) residing at urban and rural areas.

METHODS

Totally 60 individuals suffering from Major Depressive Disorder, both from urban and rural areas were selected for the study. Purposive sampling technique has been used. Ex-post facto design has been selected for the present study. Following the objectives only t-test and Mann Whitney U test have been used.

RESULT

It has been found that in both urban and rural areas belief about medication and adherence to medication have influenced severity of depression and quality of life. Necessity belief about psychotropic medication is lower in MDD patients residing at the urban area in comparison to rural. Necessity belief has also affected the level of adherence to medication, severity level

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of depressive symptoms and quality of life of those patients. Harmfulness belief about general medication is higher in MDD patients residing in rural area in comparison to urban and it has affected their level of adherence to medication, severity level of depressive symptoms and consequently the quality of life.

CONCLUSION

Differences exist between urban and rural participants with respect to their belief about medication (necessity and overuse) and environmental quality of life. Severities of depression and quality of life have been influenced by belief about medication and adherence to medication in both urban and rural setup.

Keywords : Belief about medication, adherence to medication, Major Depressive Disorder, symptom severity and quality of life.

INTRODUCTION

Beliefs about medicines are a major contributing factor to medication adherence. Medication adherence is defined as the consistency of taking psychotropic medicines as per prescribed dosage and medication non adherence is defined as the inconsistency of taking psychotropic medicines as per prescribed dosage. It has been estimated that, in developed countries, patients with chronic medical illnesses adhere only 50% of the time to their medications, and it is believed that the problem is much higher in developing countries[1]. Beliefs about medications include specific and general view about medicines. Specific view assesses the necessity of the prescribed medication (specific-necessity) and concern about prescribed medication based on beliefs about the danger of dependence and long term toxicity and the disruptive effect of medication (specific-concern). General view assesses that medicines are harmful, addictive, poisons which should not be taken continuously (general-harm) and that medicines are overused by doctors (general-overuse)[1].

Major Depressive Disorder is one of the common psychiatric disorders with the prevalence rate that varies from 1.7 to 74 per thousand population in India [2]. A common treatment for clinical depression is a type of medication called an antidepressant. Most patients see signs of improvement within two to four weeks[3]. The first phase of treatment of depression is acute phase. The goal of the acute phase is symptom remission, which takes about 8-12 weeks[3]. But many of them give up before the drug has had time to enact changes in the brain chemistry. Side effects are the most common reason for quitting an antidepressant within the first two weeks.

Fatigue, nausea, insomnia and sedation are common and most noticeable when the drug is first started. Doctors say these side effects usually go away within a few weeks and they encourage patients to continue therapy. Patients with MDD are vulnerable to feeling pessimistic or hopeless about antidepressant treatment and may give up too early. Studies showed that there is a negative correlation between adherence and severity of depressive symptom. Poor adherence increases the severity of depressive symptoms and vice versa[4, 5, 6].

Quality Of Life (QOL) is negatively influenced by depression. WHO defines the concept of QOL as 'individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. The negative association between depression and QOL was consistent in high-quality cross sectional and longitudinal studies, independent of the type of sample studied [7, 8, 9, 10].

Rural residents are more vulnerable since they face many barriers such as the long travelling distances and the cost or lack of transportation when accessing health care services, more visible in remote areas. In rural areas availability of doctors or specialists is lower compared to urban areas. A large portion of rural health care in India is provided by people without formal medical training[11].

Poor education, lack of awareness regarding mental health and mental illness, beliefs about medicines are common factors that affect adherence to psychotropic medication in rural areas. It is expected that in urban population factors like regular follow up and high adherence will lead to positive treatment outcome. However, it has been observed that urban people are more concerned about the side effects and long term effects of psychotropic medicines than rural people. This is because the urban dwellers have various modern sources from where they can acquire such knowledge about prescribed medicines unlike their rural counterparts. This concern adversely affects their treatment adherence. From this point of view rural people who come to psychiatrists may understand that symptoms of mental illness should be treated with medicine though they may not have the proper knowledge about the disorder and the side effects of medicines.

Review of available literature and studies therefore reveal that erroneous beliefs about psychotropic medications are strongly embedded in our society. In order to get rid of such toxins focused research studies are very much essential. These may reveal insights which increase the scope for positively changing the belief system within the individual and consequently increase their adherence to treatment and finally ensures a healthy life for them.

OBJECTIVES

1. To determine whether there was any difference between the group of urban and rural patients suffering from Major Depressive Disorder (MDD) with reference to the following variables :
    1. **Belief about medication** (necessity, concern, harmfulness and overuse)
    2. **Adherence to medication**
    3. **Symptom severity**
    4. **Quality of life** (physical, psychological, social and environmental)
2. To determine whether there is any difference in adherence to medication, symptom severity, and quality of life (physical, psychological, social and environmental) separately with respect to the difference between upper and lower group (based on median value) of four domains of belief about medication – necessity, concern, harmfulness and overuse of patients with MDD residing at urban and rural areas.
3. To determine whether there is any difference in symptom severity, and quality of life (physical, psychological, social and environmental) separately with respect to the difference between upper and lower group (based on median value) of adherence to medication of patients with MDD residing at urban and rural areas.

METHOD

SAMPLE :

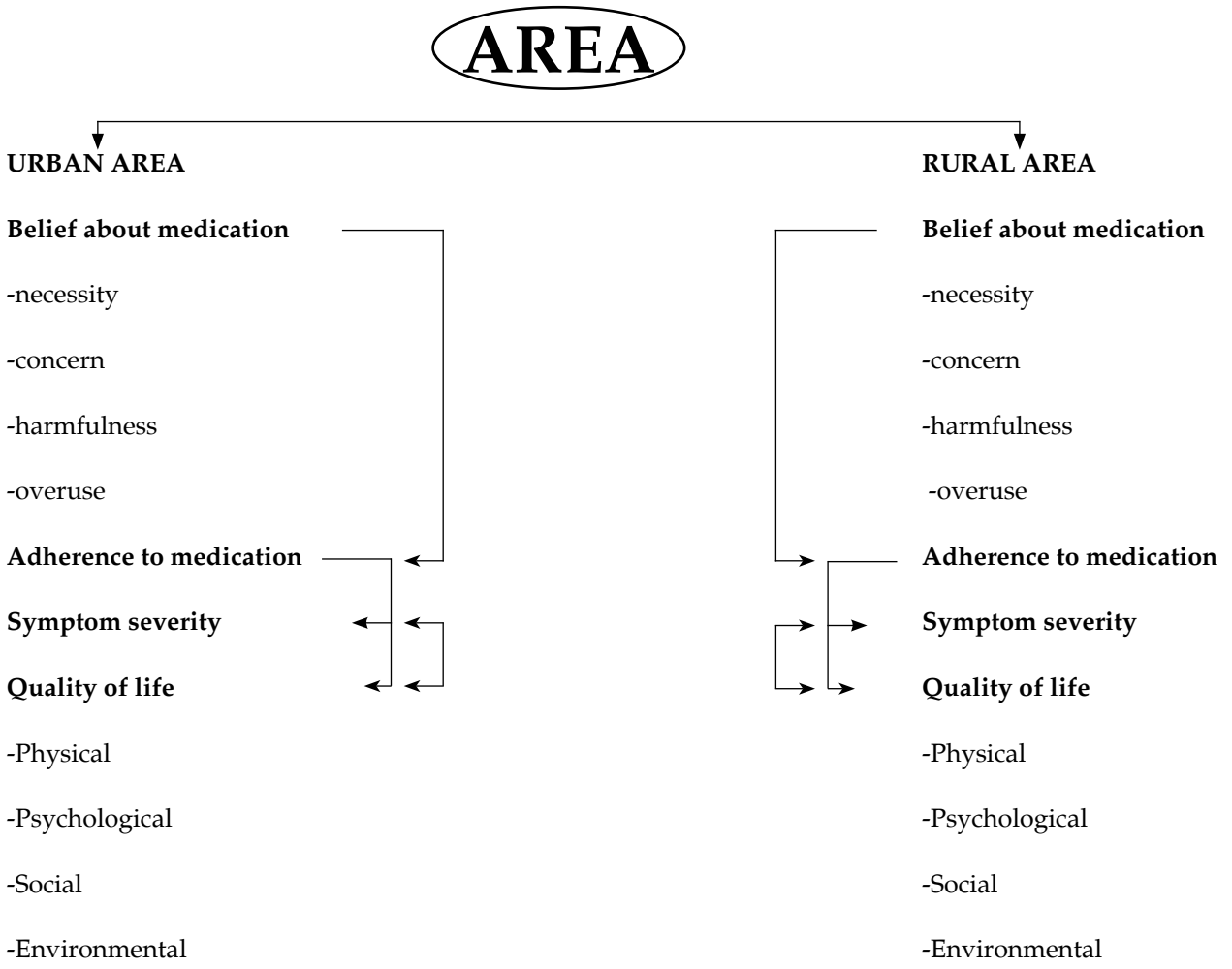
Purposive sampling technique has been used. Total 60 individuals, suffering from Major Depressive Disorder(30 from urban area and 30 from rural area) between the age of 20 and 60 years (both male and female) have been selected for the study. The criteria for selection :

- Absence of any psychotic symptom
- All are on medication at least for 3 months.

Patients were approached individually at urban (Kolkata-Bhawanipur, Behala) clinics and rural (DakshinBarasat, Laxmikantapur, Jaynagar, West Medinipur-Debra) clinics. Considering the ethical issues permission for taking data were collected from each patient as well as from the psychiatrists of the respective clinics.

RESEARCH DESIGN :

Ex-post facto design (criterion-group design) has been selected for the present study.



TOOLS :

INFORMATION SCHEDULE

To record the demographic information about the participants such as their name, age, sex, locality, educational qualification, occupation, family income per month, diagnosis (as per ICD-10), duration of medicine intake, substance history, and other medical condition (if any).

BELIEFS ABOUT MEDICATION QUESTIONNAIRE (BMQ - HORNE ET AL, 1997) [2]

Medication beliefs were measured with the Beliefs About Medication Questionnaire of Horne et al (1997), which assesses specific and general beliefs about medicines using 5-point Likert agreement-disagreement scales. The 2 medication - specific scales (necessity and concerns) consist of 5 items each, whereas the 2 general scales (overuse and

harmfulness) have 4 items each concerning medications in general (where 1-strongly agree, 2-disagree, 3-uncertain, 4-agree, 5-srtongly agree).

In BMQ – Specific scale item no. 1,3,4,7, 10 are scored for the necessity domain and item no. 2,5,6,8,9 are scored for the concern domain. In BMQ – General scale item no. 11,13,17,18 are scored for the overuse domain and item no. 12,13, 15, 16 are scored for the harmfulness domain.

The internal consistency (Chronbach alpha) reliability for BMQ-Specific scale is 0.74 (necessity) & 0.63 (concern) and BMQ-General scale is 0.73 (overuse) & 0.70 (harmfulness).

MORISKY MEDICATION ADHERENCE SCALE (MMAS-8, MORISKY ET AL, 1986) [12]

This scale consisting of 8 items assesses the medication adherence level. The first seven items have dichotomous responses (yes/no). The total score of MMAS ranges from 0 to 8, with higher scores representing low adherence. The reliability of this scale is 0.83 along with good predictive validity. (0=High adherence, 1-2=Medium adherence, 3-8=Low adherence)

THE HAMILTON RATING SCALE FOR DEPRESSION (HAM-D 21, HAMILTON, 1960) [13]

This is a multiple item questionnaire, used to provide an indication of depression and as a guide to evaluate recovery. Several versions of HAM-D are available, some with additional questions (which are not scored). The HAM-D is also known as HAM-D□□, HRSD and the HDRS. Although this version of HAM-D lists 21 items, only first 17 are scored. The remainder provides additional clinical information. It takes about 20 minutes to complete the interview and score the results. Eight items are scored on a 5-points scale, ranging from 0 = not present to 4 = severe. Nine items are scored from 0-2. Sum total of the first seventeen items is used to arrive at the total score. (0-7 = Normal, 8-13 = Mild, 14-18 = Moderate, 19-22 = Severe, >22=Very severe).

WORLD HEALTH ORGANIZATION QUALITY OF LIFE-BREF (WHOQOL-BREF, WHO 1996) [14]

This scale produces a quality of life profile. It is possible to derive four domain scores. Domain scores are scaled in a positive direction i.e. higher scores denote higher quality of life. The method of converting raw scores to transformed scores is done in two scales. This transformation method is given in Table-4 on page 11 of the WHOQOL-BREF manual. The first transformation method converts scores to range between 4-20, comparable with the WHOQOL-100. The secondtransformation method converts domain scores to a 0-100 scale. In this study the second transformation method is used.

STATISTICAL MEASURES

- t-test has been used to determine the significant difference between variables of urban and rural setup.
- Mann Whitney U test has been used to determine the significant difference in each dependent variable with respect to the lower group and upper group (based on median value) of each independent variable.
- SPSS version 20 has been used for all statistical analysis.

RESULTS

TABLE 1 : SIGNIFICANT DIFFERENCE BETWEEN URBAN AND RURAL AREA

VARIABLES	URBAN AREA		RURAL AREA		t	SIGNIFICANT VALUE
Belief about medication	MEAN	SD	MEAN	SD		
Necessity	16.13	4.63	18.33	3.69	2.04	0.046*
Concern	10.40	3.87	10.63	3.55	0.24	0.809
Harmfulness	6.30	2.05	7.27	2.49	1.64	0.106
Overuse	6.30	2.97	8.37	3.37	2.51	0.015*
# Adherence to medication	2.33	1.68	2.50	1.59	0.39	0.695
Symptom Severity	13.87	5.64	13.23	6.64	0.39	0.692
Quality of life	57	14.47	53.07	18.99	0.90	0.371
Physical						
Psychological	53.20	18.09	50.27	19.36	0.60	0.547
Social	53.93	11.51	57.73	14.42	0.53	0.595
Environmental	69.40	10.33	56.97	14.78	3.77	0.000**

**significant at 0.01 level
*significant at 0.05 level
[Higher the score = Lower the adherence level]

Table 1 represents the mean and standard deviation of each variable in urban and rural area, and also shows whether these variables differ significantly from urban and rural area in terms of their mean. It can be seen that there is significant difference in necessity and overuse domain of belief about medication and environmental quality of life among patients with MDD residing at urban and rural areas. Patients of rural areas show more necessity belief i.e. they feel the necessity of taking medicine and they also think that doctors prescribe extra medicines. Environmental quality of life is better in patients of urban area as indicated by the mean value.

TABLE 2 : Difference in dependent variables with respect to the difference between lower & upper group (based on median value) of each domain of belief about medication (necessity, concern, harm and overuse) in urban group.

DVs	NECESSITY					CONCERN					HARM					OVERUSE				
	LG		UG		U	LG		UG		U	LG		UG		U	LG		UG		U
	M	Q	M	Q		M	Q	M	Q		M	Q	M	Q		M	Q	M	Q	
ADH	3	1.5	1	1.37	**0.002**	1.5	1.12	3	1.37	**0.007**	1	1	3	1	**0.002**	1	1	3	1.5	**0.001**
SS	19	4	10	5	**0.006**	11	4	18	4	**0.010**	9	4.12	17	3	**0.003**	10	3	17	3	**0.000**
PHY	53	10.5	63	6.5	**0.038**	66	8	56	9.5	0.052	69	4.63	53	8.63	**0.001**	69	6.5	56	12.5	**0.006**
PSY	47	12.5	66	15.5	0.085	66	15.5	44	18	0.110	69	12.5	44	9.5	**0.004**	75	6	44	9.5	**0.000**
SOC	53	6.5	59	11	0.224	59	10.25	50	8.63	0.052	59	10.25	50	7.87	0.193	56	9.5	50	6.5	0.486
ENV	69	6.5	75	8.25	**0.028**	75	6.25	69	11.63	0.667	75	6	69	5.63	**0.015**	75	6	69	9.5	**0.067**

TABLE : 2 [ADH-adherence, SS-symptom severity, PHY-physical quality of life, PSY-psychological quality of life, SOC-social quality of life, ENV-environmental quality of life, UG-upper group, LG-lower group, M-median, Q-quartile, U-significant value of Mann-Whitney U Test].

TABLE 3 : Difference in dependent variables with respect to the difference between lower & upper group (based on median value) of #ADHERENCE to medication in urban group

Dependent Variable	Median of Lower group		Median of Upper group		Significant value (U)
	MEDIAN	QUARTILE	MEDIAN	QUARTILE	
Symptom Severity	7	2	17	3	0.000**
Physical quality of life	69	3	56	9.5	0.001**
Psychological quality of life	69	6	44	9.5	0.002**
Social quality of life	63	12.5	50	9.5	0.185
Environmental quality of life	75	3	69	6.5	0.018*

**significant at 0.01 level
*significant at 0.05 level
[Higher the score = Lower the adherence level]

TABLE 4 : Difference in dependent variables with respect to the difference between lower & upper group (based on median value) of each domain of belief about medication (necessity, concern, harm and overuse) in rural group.

DVs	NECESSITY					CONCERN					HARM					OVERUSE				
	LG		UG		U	LG		UG		U	LG		UG		U	LG		UG		U
	M	Q	M	Q		M	Q	M	Q		M	Q	M	Q		M	Q	M	Q	
ADH	3	1.5	2	0.5	0.134	2	0.5	2	0.37	0.158	2	1.5	3	1.5	**0.007**	2	0	3	1.5	0.161
SS	16.5	6.75	10	6.25	0.146	9.5	6	15	4.25	0.113	9.5	3.25	17.5	4	**0.002**	10	4.5	16	7	0.512
PHY	44	14.75	56	16.25	0.629	66	16.25	44	12.5	0.134	69	14	44	8.25	**0.000**	63	21.5	44	9	0.116
PSY	41	19.63	56	13.25	0.391	59.5	15.5	44	12.5	0.079	59.5	15.5	38	14.75	**0.001**	56	15.5	44	19	0.367
SOC	53	13.12	56	10.25	0.346	62.5	8.75	50	12.5	**0.035**	56	8.75	53	12.5	0.263	56	12.5	56	9.5	0.713
ENV	59.5	6.5	56	10.25	0.346	56	8.75	59.5	9.5	0.545	59.5	10.25	56	8.75	0.773	56	9.5	56	9.5	0.325

TABLE 4 : [ADH-adherence, SS-symptom severity, PHY-physical quality of life, PSY-psychological quality of life, SOC-social quality of life, ENV-environmental quality of life, UG-upper group, LG-lower group, M-median, Q-quartile, U-significant value of Mann-Whitney U Test].

TABLE 5 : Difference in dependent variables with respect to the difference between lower & upper group (based on median value) of# ADHERENCE to medication in rural group

Dependent Variable	Median of Lower group		Median of Upper group		Significant value (U)
	MEDIAN	QUARTILE	MEDIAN	QUARTILE	
Symptom Severity	6	1.87	16.5	4.5	0.003**
Physical quality of life	56	10.75	44	14.75	0.158
Psychological quality of life	56	15.5	50	18.25	0.273
Social quality of life	56	10.75	56	11.75	0.781
Environmental quality of life	59.5	5	56	11.75	0.743

**significant at 0.01 level
[Higher the score = Lower the adherence level]

DISCUSSION :

Findings showed that patients of both urban and rural areas felt the necessity of taking psychotropic medicine more than thinking of its consequences like side effects, long term effects, addictiveness etc. and rural patients felt the necessity more in comparison to the urban. Focusing on the general view about medicine it was seen that rural patients believed that doctors prescribe more medicines than its actual requirement, natural remedies are safer than medicines, more medicines are harmful etc. in comparison to the urban area.

Results revealed that adherence to medication was almost same for MDD patients of both urban and rural areas i.e medium level of adherence leading to mild depressive symptoms and average level of quality of life. Physical quality of life being better in urban area may be due to the cause that rural patients with MDD felt more somatic symptoms of depression like physical pain, inability to do work due to that pain, sleep disturbance that reduce their physical quality of life[15]. Environmental quality of life was better in urban area due to better physical environment, conditions of living place, availability of transport and better health services like medicine shop, doctor chambers, hospitals in comparison to rural area.

Focusing on urban area it was seen that ***adherence to medication*** changed with belief about medication (in each domain – necessity, concern, harmfulness and overuse). High necessity increased adherence to medication and low necessity decreased adherence to medication. Likewise higher level of concern, harmfulness and overuse negatively affected adherence to medication i.e they lowered the adherence and lowered level of concern, harmfulness and overuse increased the adherence level.

Symptom severity was influenced by four domains of belief system about medication and also the level of adherence to medication. High necessity, low concern, low harmfulness, low overuse and high adherence were seen to decrease the severity of depressive symptoms.

Physical quality of life and psychological quality of life were influenced by necessity, harmfulness and overuse domain of belief about medication and adherence to medication. High necessity, low

harmfulness, low overuse and low adherence level lead to better physical and psychological quality of life.

Conceptually it can also be stated that the negative belief about medication as well as lower level of adherence to treatment will definitely affect different aspect of social life of an individual. But in the present study absence of such result might be due to higher level of dispersion in the data.

Lastly, environmental quality of life was influenced by necessity and harmfulness domain of belief about medication and adherence to medication. High necessity, Low harmfulness, and high adherence level were seen to result in better environmental quality of life.

From the above discussion it can be said that positive belief about medication (necessity) leads to high adherence level, low severity of depression and better quality of life in patients with MDD residing at urban area.

Focusing on rural area it has been noticed that adherence to medication was influenced only by harmfulness belief about medication.

Severity of depression was influenced by harmfulness domain of belief about medication and adherence level. Lower harmfulness belief and higher adherence level decreased the severity level of depression.

Physical quality of life and psychological quality of lifewere also seen to be influenced by harmfulness domain of belief about medication. Perception of low harm about medication in general lead to better physical and psychological quality of life.

Social quality of life was influenced by concern domain of belief about medication. Low concern about psychotropic medication lead to better physical quality of life of MDD patients.

Environmental quality of life was not influenced by belief about medication and adherence to medication. Changes in environmental quality of life was seen with respect to the changes in each domain of belief about medication and adherence level. However, these changes were not significant due to the dispersion of data.

From the discussion focusing on rural area it can be seen that adherence to medication and belief about medication influence the symptom severity and quality of life. Due to the dispersion in data some changesin symptom severity and quality of life with respect to the changes in belief about adherence to medication are not significant.

From the comparative analysis of urban and rural findings it can be seen that all four domains of belief about medication influenced adherence to medication in urban area whereas in rural area only harmfulness influenced the adherence level. Lack of proper information regarding the psychotropic medicine, lack of proper education and absence of proper information providing agents in case of rural patients might have been the cause behind the present finding. In general, patients residing at rural area believe that natural remedies are better than medicines, medicines are harmful for health and they may not perceive psychotropic medicines differently from non-psychotropic ones as perceived by the urban patients. Hence, this harmfulness belief adversely affected their adherence to medication, symptom severity and quality of life.

On the other hand, in urban areas patients are more aware of the consequences and side effects of psychotropic medicines which made them hesitant and in turn also guide their adherence to treatment. Due to stigma about mental illness and improper knowledge about the disorder sometimes patients become unable to accept that they are suffering from MDD i.e., a psychiatric illness. More awareness regarding the negative consequences of psychotropic medicine and unacceptance of their 'mental' illness due to stigma about it lowers the need (lower level

of necessity belief about medication) for taking psychotropic medicine in comparison to the patients residing at rural area. Hence, lower level of necessity to take that medicine leads to poorer adherence to medication which increases the severity of depression and consequently a poor quality of life is being installed.

CONCLUSION :

It has been concluded that in both urban and rural areas belief about medication and adherence to medication have influenced severity of depression and quality of life. Necessity belief about psychotropic medication was lower in MDD patients residing at urban area in comparison to rural and it affected the level of adherence to medication, severity level of depressive symptoms and quality of life of those patients. Harmfulness belief about general medication was higher in MDD patients residing at rural area in comparison to urban and it did affect their level of adherence to medication, severity level of depressive symptoms and consequently the quality of life.

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