International Journal of Community Medicine and Public Health
Kumar S et al. Int J Community Med Public Health. 2023 Feb;10(2):760-765
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: https://dx.doi.org/10.18203/2394-6040.ijcmph20230234

Original Research Article

Relationship between automatic thoughts and mindfulness in patients with dual diagnosis: a correlational study

Sunil Kumar[1], Deepak Malik[2]*, Arunima Gupta[1]

[1]Department of Psychology, Maharshi Dayanand University, Rohtak, Haryana, India
[2]Division of Socio-Behavioural & Health Systems Research, Indian Council of Medical Research, New Delhi, India

Received: 06 December 2022
Revised: 18 January 2023
Accepted: 19 January 2023

***Correspondence:**
Deepak Malik,
E-mail: malikdeepak1987@gmail.com

ABSTRACT

Background: Mental disorders are one of the leading causes of non-fatal disease burden and being experienced by population at large. To overcome the mental health issues like stress, depression, people experience of drug used. Using a substance and co-morbid with any type of illness exaggerate the overall health and using these known as dual diagnosis which pose a significant challenge for the professionals, stakeholders and family. The present study has been taken up to find out the relationship of automatic though and dispositional mindfulness amongst patients with dual diagnosis.
Methods: A descriptive correlational study design was taken up for the present study, in which 150 male patients with dual diagnosis were selected and interviewed individually after ethical procedures, using Personal information schedule and Automatic thought questionnaire Scale**,** and Five Facet Mindfulness Questionnaire.
Results: A total 150 patients were taken in this study. The majority (55%) were between the ages of 20 and 30, married (62%). Descriptive statistics and Pearson Correlation Coefficient were used to see the relationship among variables. The study showed a negative significant correlation of automatic thought and mindfulness at 0.01 level among patients with dual diagnosis. It also suggests a vicious cycle of negative thoughts and mindfulness in such patients.
Conclusions: It was concluded that the automatic thoughts are negatively correlated with mindfulness. The current findings may help health professionals in providing better management to patients with dual diagnosis.

Keywords: Automatic thoughts, Dual diagnosis, Mental health, Mindfulness

INTRODUCTION

Mental illness affects person's cognition, biological functions like sleeping and eating patterns, impairs general health and functioning resulting adversely in person's family and personal relationships.[1] Diagnosing a primary mental illness in substance abusers is challenging as drug abuse itself often induces mental symptoms, thus making it necessary to differentiate between substance induced and pre-existing mental illness. Many mental illnesses co-exist with other illnesses and when it co- occurs with substance abuse, the diagnosis of other mental illness is often delayed or missed and the outcome worsens in such dual diagnosis cases. Co-morbid illnesses may occur simultaneously or sequentially. Severity in one disorder is associated with severity in the other.[2] The term Dual diagnosis means a person who is diagnosed with a mental illness along with a substance use or abuse disorder at the same time, also known as co-occurring disorders or co-morbidity.[3] Persons who are suffering from serious mental illness have 50% more chances of developing substance abuse disorder. According to a study, the risk that someone with a mental illness will use or abuse drugs increases as the severity of their condition does.[4] Another study reported that about 47% of the patients of schizophrenia also had a substance

misuse disorder at some time in their life. So, it is challenging for mental health professional to deal with such type of patients.[5] Prevalence and pattern of alcohol and substance abuse in urban areas of Rohtak city was found around 19.78%.[6] Dual diagnosis patients have sometime automatic thought; they face difficulties to control them. As automatic thought is much a part of everyday life, it is not surprising that automatic thought can result in despondency or even psychopathology. During negative automatic thought, people may decrease positive and become less mindfully. It was also found that dual diagnosis patient has social withdrawal and would not be aware of the present moment which affect the mindfulness state of the patients.[7] The word "mindfulness" can be used to describe a theoretical construct (mindfulness), a practice of cultivating mindfulness (such as meditation), or a psychological process (being mindful).[8] A study found that depression group showed high cognitive error and automatic thought and was low on mindfulness and meta- cognition.[9] These dual diagnosis cases pose a significant challenge for the professionals, stakeholders and family. Many studies have been conducted on the above said variables but by taking them separately and notably no study in Indian setting to the best of our knowledge has taken all the variables together. The present study can be helpful in addressing some of these complex issues.

Aim and objectives

Objectives of current study were; to study emotional regulation and mindfulness among patients with dual diagnosis and to study the relationship of automatic thought with mindfulness among patients with dual diagnosis.

METHODS

Study design, sample and setting

This study used a descriptive correlational design to collect the data from individuals with dual diagnosis. A sample of 150 stable patients with 'dual diagnosis' as diagnosed by the psychiatrist and the diagnostic criteria of the ICD-10, who were under treatment or medication and came for follow up, were selected purposively and contacted at private hospital/clinic at their convenience. The data were collected from January 2021 to February 2022 on OPD follow-ups. The patients fulfilling the selection criteria were taken. Prior to collecting data, the participants were told about the study and provided with a written informed consent.

Selection criteria

Following criteria was followed for recruitment of the sample: Both inpatient and outpatient, The age between 20-50 years, Duration of illness > 2 years and could read and understand English/Hindi.

Exclusion criteria

Exclusion criteria for current study were; any other physical and neurological co morbid illness, acutely ill and Unwilling or uncooperative.

Measurements

Personal Information Schedule: A specially designed schedule for collecting information about socio-demographic variables as well illness related data.

Automatic thought questionnaire (ATQ)[10]

The ATQ is a self-administered instrument containing 30 items which measures the frequency of negative automatic thought about self. ATQ measures four aspects of automatic thought like "personal maladjustment and desire for change (PMDC), negative self-concepts and negative expectations (NSNE), low self-esteem (LSE) and helplessness". The items are rated on a 5-point scale: 1='not at all', 2='sometimes', 3='moderately often', 4='often', and 5='all the time'. The scores on 30 items are summed up to give the total score for ATQ. It yields a score ranging from 30 to 150, with higher scores indicating high level of negative automatic thoughts. The tool showed promising internal consistency with an alpha coefficient of 0.97.

Five facet mindfulness questionnaire (FFMQ)[11]

This is a 39-item questionnaire designed to assess five core component skills of mindfulness like observing, describing, acting with awareness, non- judging of inner experience and non- reactivity to inner experience. It is a 5- point scale ranging from 'never or very rarely true' to 'very often or always true'. Higher scores reflect greater levels of mindfulness.

Data collection procedure

The participants were selected after being evaluated in accordance with the inclusion and exclusion criteria, and explaining the purpose of the study. Written informed consent was taken from them as well as about their willingness or unwillingness in the study and they were given the option to withdraw their consent at any stage without affecting their treatment. Each subject's personal information was collected during a face-to-face interview. ATQ and FFMQ were administered and data was organized by reshaping the obtained raw scores as per manuals and for further analysis.

Data analysis

The data were entered in Microsoft Excel 2007 and SPSS 20.0 (IBM SPSS Statistics, New York, US) was used to manage and analyzing the data. Quantitative data were reported using mean and standard deviation, mean percentage etc. correlation between study variables were

analyzed using Pearson correlation coefficient. All analyses used an alpha level of 0.5 for statistical significance.

RESULTS

The study intended to examine the automatic thoughts regulation and mindfulness and to correlate between these two variables of patients with dual diagnosis who visited the psychiatric facility for follow up.

Sample characteristics

Most of the participants in their age of 20-30s (55%), belonging to rural background (70.67%) and hailed from a nuclear family (80.67). More than half (62%) are married and nearly half completed degree course (48%), followed by secondary (29.33%) and higher secondary (20.67%). 29% of participants work in private sectors and 26.67% works in govt. sector. 19% were unemployed during the data collection period. 34% having annual income of 1.5 Lakh (Table 1).

Table 1: Sample distribution based on the socio-demographic characteristics (n=150).

Variable		N (%)
Age (years)	20-30	82 (55)
	30-40	60 (40)
	40-50	8 (5)
Domicile	Rural	106 (70.67)
	Urban	44 (29.33)
Family type	Nuclear	121 (80.67)
	Joint	29 (19)
Marital status	Single	47 (31.33)
	Married	93 (62)
	Divorced	10 (6.67)
Education	Up to Secondary	44 (29.33)
	Higher Secondary	31 (20.67)
	Degree/PG	72 (48)
	Above PG	3 (2)
Occupational status	Govt. employed	40 (26.67)
	Private employed	44 (29.33)
	Self employed	37 (24.67)
	Unemployed	29 (19.33)
Annual income (₹)	Up to 50,000	13 (8.67)
	50,001-1,50,000	51 (34)
	1,50,001-2,50,000	36 (24)
	2,50,001-5,00,000	15 (10)
	Above 5,00,000	35 (23.33)

The descriptive statistics shows obtained values for mean and SD of dual diagnosis patients on different type of automatic thought e.g., PMDC (M=20.38, SD=5.93), NSNE (M=29.03 SD=7.13), LSE (M=7.34, SD=2.26), helplessness (M=7.18, SD=1.17), and over all automatic thought (M=126.33, SD=22.68) (Table 2). On the next construct, obtained values for mean and S.D. of dual diagnosis patients on dispositional mindfulness of observed item was (M=14.47, SD=2.37), Describe items (M=17.03, SD=3.78), Act with awareness (M=16.31, SD=3.83), Non judging of inner experience (M=15.33, SD=5.08), Non reactivity to inner experience (M=12.79, SD=2.53) and overall dispositional mindfulness (M=75.98, SD=14.87) (Table 2).

Table 2: Descriptive statistics mean and SD of difficulties in emotion-regulation and Mindfulness (n=150).

Variables		Mean ± SD
Automatic thoughts	Personal maladjustment & difficulty for change	20.38±5.93
	Negative self-concepts and negative expectations	29.03±7.13
	Low self-esteem	7.34±2.26
	Helplessness	7.18±1.17
	Total ATQ Score	126.33±22.68
Mindfulness	Observing	14.47±2.37
	Describing	17.03±3.78
	Acting with awareness	16.13±3.78
	Non- judging of inner experience	15.33±5.08
	Non- reactivity to inner experience	12.79±2.53
	Total mindfulness score	75.98±14.87

To see the relationship between automatic thought and mindfulness among dual diagnosis, correlation analysis was computed. Table 3 depicts the correlational values amongst the mindfulness and its dimensions and the automatic thought and its four dimensions. All the obtained coefficients of correlation values of PMDC with total mindfulness (r=-0.233**; p≤0.01) and its dimensions namely "observing items (r =-0.198*; p≤0.05); describing items (r =-0.211; p≤0.01); acting with awareness (r=-0.275**; p≤0 .01); non-judging with inner experience (r=-0.179*; p≤0.05) are negative and significant but non-reactivity to inner experience" (r=-0.067; NS) was not found to be significant (Table 3).

DISCUSSION

According to data from the National Survey on Drug Use and Health, 52.9 million people over the age of 18 had a mental illness in the past year, and 17 million of these individuals also had a substance use disorder.[12] Mental illness and drug and alcohol addiction are often closely linked. People with mental illnesses can self-medicate with substances, but certain substances can also induce mental illness.[13] Overall, the present study included 150 patients with dual diagnosis, the majority of them were in age of 20 to 30, from Hindu nuclear families, and married. On

exploring the relationship between automatic thoughts and mindfulness among patients, the value of correlation indicates negative relationship among various sub-domains which further shows that patients with dual diagnosis having issues with thoughts and their management.

Table 3: Inter-correlation matrix for scores of mindfulness and automatic thought sub-domains (n=150).

Variable Mindfulness → Automatic Thoughts ↓	Observing	Describing	Acting with awareness	Non- judging of inner experience	Non- reactivity to inner experience	Total
Personal Maladjustment &difficulty for change	-0.198*	-0.211	-0.275**	-0.179*	-0.067	-0.233**
Negative self-concepts and negative expectations	0.030	-0.045	-0.242*	-0.184**	-0.256**	-0.213**
Low self-esteem	- 0.193*	0.014	-0.299**	-0.120	-0.084	-232**
Helplessness.	-0.186*	-0.213**	-0.144	-0.117	-0.210**	-243**
Over Automatic Thought	0.085	0.252**	-0.363**	-0.322**	-0.043	-311**

**p≤0.01, *Significant at 0.05 level, **Significant at 0.01 level

Negative correlation of PMDC with observing items revealed that as the personal adjustment problems and dilemmas in order to change increase, the patients' capability to observe and scrutinize the situations decreases. The patients' ability to pay attention and focus on the internal senses and external stimulations diminishes when they have more negative thoughts. Moreover, the negative relationship between PMDC and describing items indicated that as the adjustment problems among patients grow, the patients' capacity to catalogue and label their emotions weakens. Furthermore, the negative relationship between PMDC and acting with awareness suggested that with the increase in disequilibrium in adjustment the patients' potentiality to focus upon present scenario declines. The significant and negative relationship between PMDC with non-judging with inner experience explained that with the rise in maladjustment the patients' proficiency to not let the inward disquisition affect their health and wellbeing deteriorates. In the end the negative relation between PMDC and total mindfulness explained that as the difficulty for modification escalates the patients' efficiency to be present in existing moment declines.

The dual diagnosed patients who have more discordant self-concept and more contradictory predeterminations tend to opt less for mindfulness and are less likely to absorb themselves in present situations. The self-concept is enterprising challenge to perpetuate the individuality. This enterprising component of the self-concept makes an individual to understand him/her and to accept themselves. The individual's concept about himself is at the core of his thinking, motivation and behaviour. The person with positive self-concept tends to make changes in his lifestyle and debilitated habits and indulge in mindfulness practices which can give them protection from life threatening diseases and stresses whereas the person with negative self-concept may develop profound illnesses having a threat to their health and well-being.[14] The negative relationship between NSNE and acting with awareness revealed that as the patients tend to show more discordant self-concept, the patients' competence to focus upon present setting regresses. Further, low self-esteem has been negatively correlated with total mindfulness (r=-232**; p≤0.01) and its sub-domains like "observing (r=-0.193; p≤0.05) and acting with awareness" (r=-0.299**; p≤0.01) but not significant with other dimensions of mindfulness. The negative relationship revealed that the dual diagnosed patients who have low self-esteem do not participate fully in the present point of time. Self-esteem has been considered to be a social concept which is linked up with a number of positive psychological ramifications like confidence, adjustment, worthiness, stability, and flexibility.[15,16] The negative relationship between low self-esteem and mindfulness revealed that the patients who displayed low levels of self-esteem more frequently tend to show less observation, focus and awareness towards surroundings and present situations. In many studies it has been established that mindfulness tends to be linked with high level of self-esteem.[17-19]

The correlation coefficient value was negative and significant between helplessness and total mindfulness (r=-243**; p≤0.01) and its dimensions like "observing items ((r=-0.186; p≤0.05); describing items (r=-0.213; p≤0.01) and non-reactivity to inner experience" (r=-0.210; p≤0.01) but was not found significant with other sub-dimensions. The negative relationship suggested that dual diagnosed patients who showed more helplessness have less ability to observe the present environment consciously, and their ability to describe the situations and present environment lessens. The persons who exhibit the feelings of helplessness also manifest low levels of persistence, perseverance, concentration, attentiveness and passive with low motivation. Some studies revealed that mindfulness practices are linked with high fulfillment and meaning in life, and high level of optimism and self-confidence among counselors leaving behind the helplessness.[20,21]

Lastly, the negative and significant relationship has been established between "total automatic thought" and "total mindfulness" (r=-311**; p≤0.01). The negative relationship between them indicates that as the practice of mindfulness increases the individual's tendency to have negative thoughts decreases. The individual tries to challenge their negative thoughts while practicing the mindfulness. They become aware of their thoughts and then they try to oppose the negative thoughts coming in their way. A large number of studies on mindfulness revealed an association between mindfulness and psychological well-being.[11] Another study reported that as the mindfulness increased, the negative automatic thoughts decreased in psychiatric patients.[22] In a similar study, it was concluded that mindfulness-based therapy was found to be effective in reducing the frequency and belief of negative automatic thoughts.[23] Another study by suggested that mindfulness meditation was linked with diminished negative automatic thoughts that predicted increased life satisfaction.[24] In similar study, it was found that mindfulness could be effective relieving from chronic pain and depression associated with negative thoughts.[25] Research supports that mindfulness intervention was found to be beneficial in managing negative thoughts among patients with substance abuse as it breaks the chain of relapse among them and becomes fruitful.[26] In a recent study during COVID-19, it was highlighted that cognitive distortions and rumination among people was increased whose mindfulness practice was slowed down.[27] Despite of the major significant findings, the study has limitations. Being a cross-sectional study, it could not possible to access pre and post symptoms of the patients with dual diagnosis which might have hampered subsequent care. Including male patients only also stringent the result applicability on female. Participants from a particular state can also restrict generalization of the findings. These issues can be addressed in further multi-centric study.

CONCLUSION

The current study has concluded that there is a significant correlation between all of the automatic thought sub-domains and the total mindfulness scores. The findings showed that overall automatic thoughts are negatively associated with mindfulness, which can be considered as having a significant impact on the management of patients with dual diagnosis. The present study focuses mindfulness as major outcome in clinical population and use as an intervention method.

ACKNOWLEDGEMENTS

The authors gratefully acknowledges' support from the department of psychology, Maharshi Dayanand University, Rohtak, Haryana and Dr. Narender Rohilla, Psychiatrist, Global Neuropsychiatric Care, Hisar, Haryana, India, for support for data collection and necessary permission.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Kumar S, Malik D, Gupta A. Relationship between automatic thoughts and mindfulness in patients with dual diagnosis: a correlational study. Int J Community Med Public Health 2023;10:760-5.