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DISABILITY IN SCHIZOPHRENIA AND ITS RELATIONSHIP WITH TOBACCO-DEPENDENCE.

Psychiatry

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ABSTRACT

INTRODUCTION: Schizophrenia is one of the world's most debilitating illnesses with patients experiencing deficits in variety of everyday functional domains (i.e., social, vocational, and independent living). Tobacco use contributes to serious impacts among people with schizophrenia, including increased rates of mortality and morbidity, increased risk of cardiovascular disease, reduced treatment effectiveness, greater financial hardship .Both of them are responsible for the huge indirect costs of schizophrenia, which is up to three times larger than direct treatment costs for psychotic symptoms.

Objectives: To evaluate the degree of disability and its relationship with tobacco-dependence.

MATERIALS AND METHODS: A total of 318 Schizophrenic with minimum illness duration of 2 years were assessed for their disability and nicotine dependence using the Indian Disability Evaluation Assessment Scale (IDEAS) and the Fagerström Test for Nicotine Dependence (FTND) respectively.

RESULTS: Higher degree of disability is seen in tobacco-users compared to the non-users (mean IDEASG 6.86>5.98, p=0.009). A greater number of tobacco-users had moderate disability (25.8%), majority of which have moderate nicotine dependence (smokers 27%, chewers 44.4%). Nevertheless, severely disabled patients had high nicotine dependence in both smokers (3%) and chewers (4.9%).

CONCLUSION: Present study revealed that the use of tobacco products in schizophrenic is frequently associated with dependence. Mental health providers need to help patients with preventive and rehabilitative actions in the therapeutic plan of each such patient. These interventions should be focused on making the client and the primary care giver ready for bio-psychosocial treatment modality.

KEYWORDS

Disability, Schizophrenia, Dependence, Psychotic symptoms.

INTRODUCTION

Schizophrenia is a severe psychotic disorder characterized by a chronic and relapsing course with generally incomplete remissions, substantial functional decline, frequent psychiatric and medical co-morbidities and increased mortality [1]. Schizophrenia is one of the world's most disabling illnesses[2] with patients experiencing deficits in a variety of everyday functional domains [3] as well as variety of environmental and cultural influences that impact on everyday functioning, in both positive and adverse directions. Achievement of typical milestones is less common than in the healthy population, and many functional skills (i.e., social, vocational, and independent living) themselves are performed at lower levels. Schizophrenia usually starts during young age and is frequently associated with deterioration from the previous level of functioning and they are reported to have multiple psychological and physical impairment [4].

Finally, there are a large array of factors that impact everyday functioning inability is responsible for the huge indirect costs of schizophrenia, which may be as much as three times higher than direct treatment costs for psychotic symptoms.

Tobacco use is one of the primary preventable causes of poor health and premature mortality [5]. Various studies concluded that prevalence of tobacco-use with serious mental illness higher than the general adult population [6] and having major effect on clinical and public health outcome such as more severe psychiatric symptoms due to biological pathways modulating the expression of pathophysiology[7,8,9,10,11], implications for pharmacological treatment, barriers to cessation, poorer quality of life[8], co-occurring substance abuse[12] and more medical co-morbidities[8,13] than nonsmokers. Thus it create additional negative impact on multiple functional domain, reduced treatment effectiveness, greater financial hardship [14,15,16,17] and increases overall load of treatment cost on community.

MATERIAL AND METHODS

This study was conducted in Department of Psychiatry, M.B. GOVT. HOSPITAL, R.N.T. Medical College, Udaipur. Study was conducted on all consecutive patients age of 15-60 years attending both outdoor and indoor at psychiatry dept. diagnosed as Schizophrenia (according to ICD-10 criteria) minimum duration of illness at least 2 years or more.

A total of 318 Schizophrenic patients were assessed for their disability using Indian Disability Evaluation Assessment Scale (IDEAS) and nicotine dependence among them by Fagerström Test for Nicotine Dependence (FTND), respectively. Statistical analysis was done with help of statistical software PSS-19.

RESULTS

Disability is a complex bio-psycho-social phenomenon that results from interplay of illness-related factors and the overall socio-environmental context in which the person lives [World Health Organization, 2001] [18].

Participant characteristics: It was seen that majority of the participants in this study fell within the age range 25-45years with mean age of 35.19 (SD=9.7) years. On the basis of socio-demographic profile out of total 318 patients, 53.5% (170) were tobacco-users, among them 41.9% (133) were male and 11.6% (37) were female, 51.57% (164) were Hindu and approx 2% (6) were Muslim. In tobacco-user group 35.22% (112) were belong to rural community and 18.23% (58) were from urban while in non tobacco-users 32% (102) were from rural and 14.46% (46) were urban. (Table1)

Form of tobacco- use in participants:

In our study 53.5% (170) were tobacco users and 46.5%(148)non-tobacco users Among them majority of study subjects 32.4% (103) were used chewing form while 8.8% (28) were used smoked form and

12.2% (39) were used both form smoked as well as chewed regardless of their gender. (Figure 1)

Type of disability in participants:
Among all schizophrenic participants 5.7% (18) having severe disability, 39.6% (126) moderate, and 54.7% (174) having mild disability.

Among **tobacco-users** greater number of patients had moderate disability 26.2% (83) followed by severe disability 3.1% (10) as compare to non-tobacco users (13.5% n=43, 2.5% n=8 respectively). While in **non tobacco users** maximum had mild disability than compare to tobacco-users (30.5% n=97, 24.2%, n=77) **(P Value=0.001).** (Figure 2)

The mean IDEASG for tobacco users was more than non-tobacco users (6.86>5.98**, P Value=0.009).** Here both results were statistically significant. Thus it suggests that more degree of disability is seen in tobacco-user. (Table 2)

Relationship between degree of disability and Nicotine Dependence
It is observed that in schizophrenic (n=67) smokers among severely disabled (6%, n=4) half of patients had high nicotine dependence (3%, n=2) rest of low nicotine dependence (3%, n=2).Among Moderate disabled (56.7%, n=38) patients maximum had high nicotine dependence (16.4%, n=11) followed by low to moderate dependence (15%, n=10). In mild disabled (37.3%, n=25) patients maximum (15%, n=10) had moderate to high dependence. (Figure 3a)

In chewers (n= 142) severely disabled (6.3%, n=9) patient's maximum had high nicotine dependence (approx 5%, n=9) rest of moderate nicotine dependence (1.4%, n=2). Among Moderate disabled (out of 50%, n=71) patients 24% (n=34) had moderate nicotine dependence and 19% (n=71) high dependence. (Figure 3b)

So, it's showed that severely disabled patients of both groups (smokers 3% as well as chewers 5%) had high nicotine dependence.

DISCUSSION

Schizophrenia is one of the most challenging and complex disorders. It represents a heterogeneous syndrome affecting the perceptual, cognitive, vocational, occupational emotional, social psychological aspect [19] with resulting impairments in multiple functional domains of life.

In our study tobacco-user was found 53.4% (170); among them 41.9% (133) were men and 11.6% (37) were women using tobacco. Here 41.2% (131) of patients reported tobacco use in at least one form; chewing in 32.4% (103), smoking in 8.8% (28) and 12.3% (39) used both form of tobacco.

The prevalence of tobacco-user reported in **Chandra P et al (2005)** was 36% (n=988). 53% of men and 9% of women either smoke or chew but 39% (136) used more than one form. Men were more likely to smoke (45%) than chew (20%) tobacco; women were more likely to chew (8%) than smoke (<1%), of tobacco among psychiatric disorder. Similarly in **Jiang J et al (2013)** [20] study prevalence of smoking in Schizophrenia patients was significantly higher than that of healthy controls (54.1% v/s 29.3% P=0.001). They did not study the smokeless form of tobacco.

In the present study it was found that majority of the participants are having mild level of disability 54.7%, while 39.6% are having moderate level of disability, 5.7% are having severe level of disability. It's supported by the study of **Lyngdoth L & Ali A. (2016)** [21] where respondents are having moderate level of disability 43%, while 40% are having mild level of disability, 15% are having severe level of disability and 1.7% of the respondents are having profound disability. Other various researchers have also reported that majority of the participants have mild to moderate level of disability **(Ali, 2009 [7]; Kumar et al. 2008 [14]; Sihabuddeen, Ismail, Chandran Mohan &Moosabba, 2012)** [22].

In our study we found that that more degree of disability is seen in tobacco-users. Here greater number of tobacco-users had moderate disability 26.1% (83) followed by severe disability 3.1% (10) as compare to non-tobacco user. So use of tobacco had association with more degree of disability in schizophrenic patients.

Present study showed that severely disabled patients of both groups (smokers 3% as well as chewers 5%) had high nicotine dependence. It's showed that as severity of tobacco dependence increases proportionately degree of disability also increases.

Here results of this study indicate that Tobacco dependence occurs frequently in patients with schizophrenia. Tobacco use impairs the duration and quality of life for patients with mental illness The use of tobacco product can change biological pathways, modulating the expression of pathophysiology, co-occurring other substance abuse [20] and more medical co-morbidities [10,15] It can also reduce the therapeutic blood levels of some psychiatric medications**.** [14, 17] These lead more severe psychiatry symptoms, causing chronic course of illnesses and that result in significant disability as well as reduced life expectancy.

Understanding the effects of tobacco-use on the degree of disability in schizophrenia would help us to plan appropriate psychosocial interventions for these patients.

Most of the literature on tobacco and psychiatric disorders is limited to smoking forms of tobacco; they did not study the smokeless form of tobacco. Smokeless tobacco use remains understudied and under-researched. We couldn't find much literature who reported relationship between disability and Tobacco dependence.

LIMITATIONS

Nicotine/metabolite levels were not objectively measure. Medication and duration of treatment was not considered while comparing psychopathology among schizophrenic tobacco-users.It was cross sectional hospital based study and cannot be generalized. Follow up study need to be conducted.

CONCLUSION

Disabilities and social dysfunctions have a great impact on patients with schizophrenia. While antipsychotic medications affect the positive and negative symptoms and do not directly decrease the disabilities, such patients need rehabilitative and supportive programs. In schizophrenia treatment guideline practice patients who want to quit or reduce tobacco use should be offered treatment with bupropion, with or without nicotine replacement therapy, and that this pharmacological treatment should be accompanied by a smoking cessation education or support group. Mental health care services should implement persistent supportive and supervising programs for tobacco-abuse treatment and mental health providers need to help patients.

It seems that together with the effective pharmacological treatments, the public and these patients will benefit from psycho-education to family, and educating different occupational and social skills to patients.

Acknowledgment
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Conflicts of interest
There are no conflicts of interest.

Figure 1: Tobacco-consumption in sample size

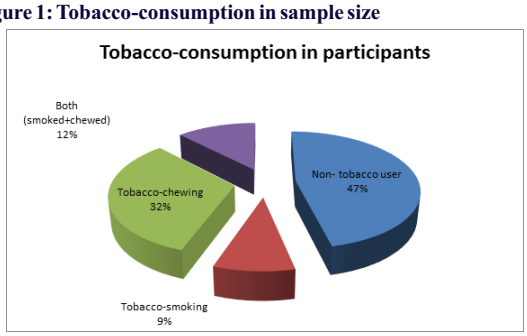
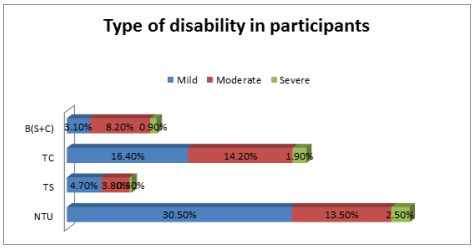


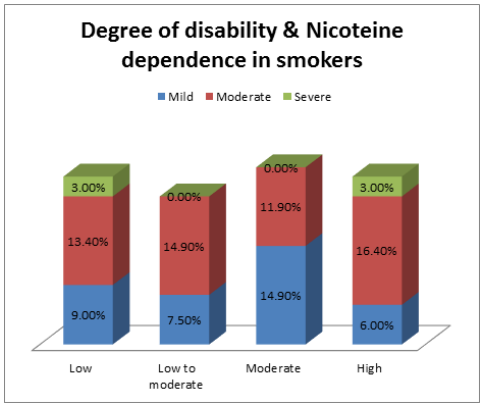
Figure 2: Type of disability in participants



P value =0.001 Statistically significant difference found.
NTU- Non tobacco-users
TS-Tobacco-smoking
TC-Tobacco-chewing
B(S+C)-Both (Smokers+Chewers)

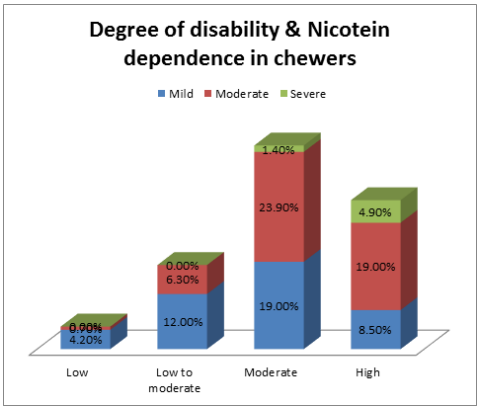
Figure3. Relationship between Nicotine dependence and degree of disability

a. In Smoking group (FTND)



P=0.285

b) In chewing group (MFTND)



P value=0.001 statistically significant difference found.

Table 1: Participant characteristics and Socio-demographic profile (N=318)

Variable	N (Percentage) or mean (standard deviation)	
	Non-tobacco users	Tobacco-user
Gender		
Male	55 (17.3%)	133 (41.82%)
Female	93 (29.24%)	37 (11.6%)
Religion		
Hindu	141 (44.33%)	164 (51.57%)
Muslim	7 (2.2%)	6 (1.9%)
Marital status		
Unmarried	21 (6.6%)	35 (11%)
Married	90 (28.3%)	101 (31.8%)
Divorced	27 (8.4%)	30 (9.4%)
Separated	10 (3.1%)	4 (1.25%)
Residential status		
Rural	102 (32%)	112 (35.22%)
Urban	46 (14.46%)	58 (18.23%)
Education		
Illiterate	56 (17.6%)	48 (28.2%)
Primary	17 (5.3%)	33 (19.4%)
High school	61 (19.18%)	80 (25.15%)
U.G./P.G.	11 (7.43%)	7 (2.2%)
Professional	3 (0.9%)	2 (0-6%)
Occupation		
Unemployed	46 (14.5%)	31 (9.78%)
Unskilled	16 (4.7%)	37 (11.63%)
Semiskilled	1 (0.67%)	9 (2.83%)
Farmer/clerical/shop-owner	78 (24.5%)	81 (25.47%)
Skilled	0 (0.0%)	4 (1.25%)
Semi-professional	2 (0.6%)	3 (0.94%)
Professional	5 (1.6%)	5 (1.6%)
Family income		
Lower	80 (25.15%)	89 (28%)
Middle	60 (18.86%)	78 (24.52%)
Upper	8 (2.5%)	3 (0.94%)

Table 2: Degree of disability among schizophrenia

	Non tobacco users	Tobacco users	P
	Mean (SD)	Mean (SD)	
IDEAS	5.98(2.95)	6.86(3.0)	**0.009***

statistically significant difference found.

Note: FTNDS- Fagerström Test for Nicotine Dependence
IDEAS-Indian Disability Evaluation Assessment scale

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