Original research article

IMPACT OF SOCIO-DEMOGRAPHIC VARIABLES AND MORBID CONDITIONS ON PERCEIVED MENTAL HEALTH COMPONENTS USING SF-36 QUESTIONNAIRE

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Publication Info

Paper Submission Date
5th February 2016

Paper Acceptance Date
3rd June 2016

Paper Publication Date
July 2016

DOI

Abstract

Introduction: Perceived Health is a subjective assessment of the physical as well as mental health and includes so many aspects as mentioned in SF-36 form that are difficult to capture clinically such as incipient disease, physiological, psychological reserves and social functions. To assess the impact of Diabetes Mellitus, Hypertension and other socio-demographic factors on the Social Functioning component of mental health of the patients attending a tertiary care hospital in Bareilly.

Material and Methods: Perceived health status of the patients was assessed by the Social Functioning dimension of the Mental Component Summary (MCS) using the SF-36 form.

Results: The presence of both Diabetes Mellitus and Hypertension was associated with lower Social Functioning scores compared to those with diabetes ($p = 0.013$) and hypertension alone. Age was negatively related with Social Functioning scores ($p<0.001$) but male gender ($p>0.000$) and higher income ($p<0.424$) were all associated with higher Social Functioning scores. Rural subjects were found to have better SF score compared to urban.

Conclusion: Age, gender and morbidity was found to have profound influence on Social Functioning scoring of the subjects. However, the results should be interpreted in terms of the study's limitations.

Keywords: Self perceived health, Mental health, Social Functioning, SF-36, Diabetes Mellitus, Hypertension, Co- morbidity.

INTRODUCTION

India is going through a period of transition, both epidemiological as well as demographic and there is an increasing prevalence of Non Communicable Diseases (NCDs) as a result of industrialization, socio-economic development, urbanization, changing lifestyles and dietary habits, thereby resulting in a growing burden of NCD's.[1] NCDs are a leading cause of deaths both in developing and developed countries, nearby two out of every three deaths on the planet are now attributed to Non-communicable diseases. United Nations (UN) estimates that by 2030, 52 million people will die annually due to NCDs i.e. five times as many deaths as the estimated deaths toll for infectious diseases.[2] These diseases like Hypertension, Diabetes Mellitus not only deteriorates objective health but also influence one's perception of health which is known as Self Perceived Health (SPH).[3,4]

Impaired social functioning is a defining criterion for mental disorders and thus also for psychopathology. The ability to maintain relationships with friends or perform work are important dimensions that shape social functioning. Therefore it seems obvious that the definition of psychopathology also depends on the presence of an impairment in social functioning. The word functioning derives from the Latin word functus and literally means: to perform or to operate. According to Tyrer and Casey (1993), in psychiatry, social functioning is defined as; "the level at which an individual functions in his or her social context, such function ranging between self preservation and basic living skills to the relationship with others in society".

Perceived Health is a subjective or self-assessment of their health and includes so many aspects as mentioned in SF-36 Questionnaire like PF, BP, SF, GH etc. that are difficult to capture clinically, such as incipient disease, physiological and psychological reserves and social functions. Till now more emphasis was given to the objective health by policy planners and health care providers but now there is a need to assess the subjective health also because it is strong, independent and reliable indicator of mortality as well as

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morbidity as shown by many studies. Hence this study was planned to explore the impact of various socio-demographic factors and morbid conditions on the social functioning component of mental health. To assess the impact of various socio-demographic factors & morbid conditions on social functioning of patients.

MATERIAL & METHODS

Study design: Facility based Cross-sectional Observational study.

Sample size: All cases who attended the OPD, IPD, RHTC and UHTC of SRMS-IMS during the study period from 1st June 2012 – 31st May 2013 were included in the study. So, a total of 1130 subjects participated in the study during the above period.

Study subjects: Registered subjects of Diabetes mellitus, Hypertension and Comorbid patients aged 35 years attending the Outpatient department(OPD), IPD, RHTC and UHTC of Shri Ram Murti Smarak Institute of Medical Sciences (SRMS-IMS), Bareilly.

Inclusion Criteria: Patients aged 35years and above suffering from Diabetes Mellitus, Hypertension or with comorbidity for more than 6 months.

Exclusion Criteria: Patients Suffering from DM/HTN for less than 6 months, Age < 35years, Type 1 DM, Gestational DM, Impaired Glucose Tolerance (IGT).

SamplingTechnique: Total enumeration of the cases.

Study Period: The study was conducted over a period of one year i.e. from 1st June 2012 – 31st May 2013.

Study tool: Two Forms were used to collect the required data. The first was a checklist containing items of socio-demographic and other epidemiological correlates (Form 1). The second was Hindi translated and patient friendly modified version of RAND SF-36 questionnaire, used to assess the Social functioning (Form 2).

It includes two items under Social functioning dimension of Self Perceived Health. Weightage was given for each question according to response i.e. 0 for worst and 100 for best performance, then the average score was calculated which is the average Social functioning score of individual patient.

Data Analysis: Statistical analysis was done by using SPSS version 20.0 and stats Direct Ltd version 2-70-800 software with level of significance set at 0.05.

RESULTS

A total of 1130 subjects participated in the study of which the rural–urban distribution revealed rural preponderance as majority of the subjects belong to rural area (53%) compared to urban (47%).

It was observed that out of 1130 subjects, majority (63.7%) were of non-geriatric age group (<60 years) while 36.3% belonged to geriatric age group. The preponderance of male subjects over female was evident in all age groups probably due to the fact that majority of the participants in the study was male (58.0%) compared to females (42.0%) (Table-1).

Table 1: Age-sex wise distribution of subjects

Age group (yrs)	Male		Female		Total	
	No.	%	No.	%	No.	%
35-40	78	57.3	58	42.6	136	12
40-45	71	55.4	57	44.6	128	11.3
45-50	86	51.5	81	48.5	167	14.7
50-55	111	62.7	66	37.3	177	15.6
55-60	68	60.7	44	39.3	112	9.9
>60	242	59	168	41	410	36.3
Total	656	58	474	42	1130	100

Majority (55.5%) had dual disease (DM +HTN) while 30.6% had Diabetes mellitus and 13.9% had only hypertension. The male preponderance was evident in Diabetes and Dual disease (64.5% and 56.9% males respectively) as against 35.5% and 43.0% females respectively while in case of hypertensives, situation was reverse i.e. females were in majority (51.6%) compared to males (48.4%). (Table-2)

Table 2: Distribution of Subjects according to Sex & Morbidity Pattern

Morbidity	Male		Female		Total	
	No.	%	No.	%	No.	%
Diabetes	223	64.5	123	35.5	346	30.6
Hypertension	76	48.4	81	51.6	157	13.9
DM+HTN	357	56.9	270	43.1	627	55.5
Total	656	58	474	42	1130	100

An inverse relationship was observed between the age and SF score with majority of the subjects aged> 60 years scoring low excellent scores (30.7%) while younger age groups 35-45 years age scoring better SF score in excellent group. Gender wise analysis of SF score revealed males

(39.8%) having better excellent scores than females (28.0%). Residence wise analysis of SF score showed rural subjects (40.07%) scored better than urban counterparts (33.33%) in excellent as well as in good and fair category respectively (Table-3).

Respondents in upper and upper middle socio-economic class showing better SF score compared to of subjects in upper lower and lower socioeconomic class (43.59% vs 38.58%) (Table-4).

Co-morbid subjects (8.13%) was found to have poor SF scores compared to diabetics (5.30%) and hypertensives alone (6.37%).It was also observed that hypertensives (30.57%) were found to have low SF score compared to Diabetics (37.28%) and it was found to be significant on statistical analysis counterparts (33.33%) in excellent as well as in good and fair category respectively (Table-5).

Table 3: Social functioning scoring of subjects according to Age & Geographical area

Variables	0-25 (Poor)		25-50 (Fair)		50-75 (Good)		75-100 (Excellent)		Total
Age Group	N	%	N	%	N	%	N	%	
35-40	2	1.47	25	18.38	51	37.5	58	42.65	136
40-45	6	4.69	27	21.09	38	29.69	57	44.53	128
45-50	7	4.19	45	26.95	49	29.34	66	39.52	167
50-55	9	5.08	38	21.47	62	35.03	68	38.42	177
55-60	6	5.36	22	19.64	42	37.5	42	37.5	112
>60	49	11.9	102	24.8	133	32.4	126	30.7	410
Total	79	6.99	259	22.92	375	33.19	394	34.8	1130
$\chi^2 = 51.8$, df =15, p = 0.001									
Sex									
Male	72	11	118	18	205	31.2	261	39.8	656
Female	72	15.2	119	25.1	150	31.6	133	28	474
Total	**144**	**12.7**	**237**	**21**	**355**	**31.4**	**394**	**34.8**	**1130**
$\chi^2 = 21.3$, df = 3, p = 0.000									
Geographical Area									
Urban	41	7.72	131	24.67	182	34.27	177	33.33	531
Rural	38	6.34	128	21.37	193	32.22	240	40.07	599
Total	**79**	**6.99**	**259**	**22.92**	**375**	**33.19**	**417**	**36.9**	**1130**
$\chi^2 = 5.92$, df = 3, p = 0.116									

Table-4: Social functioning scoring of subjects according to Socio-Economic Status

Socio-Economic Status	**0-25 (Poor)**		**25-50 (Fair)**		**50-75 (Good)**		**75-100 (Excellent)**		**Total**
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
Upper	2	11.11	3	16.67	7	38.89	6	33.33	18
Upper middle	4	6.15	8	12.31	18	27.69	35	53.85	65
Lower middle	4	3.51	27	23.68	42	36.84	41	35.96	114
Upper lower	13	5.91	43	19.55	68	30.91	96	43.64	220
Lower	56	7.85	178	24.96	240	33.66	239	33.52	713
Total	79	6.99	259	22.92	375	33.19	417	36.9	1130
$\chi^2 = 9.15$, df = 9, p = 0.424									

Table 5: Social functioning scoring of subjects according to Morbidity

Variables	0-25 (Poor)		25-50(Fair)		50-75 (Good)		75-100 (Excellent)		Total
Morbidity	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**	
DM	18	5.2	70	20.23	129	37.28	129	37.28	346
HTN	10	6.37	52	33.12	47	29.94	48	30.57	157
DM+HTN	51	8.13	137	21.85	199	31.74	240	38.28	627
Total	79	6.99	259	22.92	375	33.19	417	36.9	1130
χ^2 **= 16.1, df = 6, p = 0.013**									

DISCUSSION

In the present study, age significantly influenced the Social Functioning(SF) dimension of Mental Component Summary (MCS). As the age advanced, the score decreased in excellent group. Similar findings was obtained in a study by Wang et al (2008)[3] and Joshi et al (2003).[4] Baert et al (2007)[5] also reported in their study carried out in 25 European Countries that age negatively influenced the Social Functioning.

A study done in New Zealand show SF-36 profiles by sex: Males scored slightly, but statistically significantly, higher than females on most of the SF-36 scales, particularly on those scales more closely associated with mental health. Men scored higher than women in all scales except physical functioning.[8] In present study the relationship between SF and sex was found to be significant ($p < 0.001$).Gender influence was evident as average score for SF was better achieved by males as compared to females. Similar findings were also observed in various other studies.[6,7]

Findings have been depicted in Grigoriev et al[9] in his study in Belarus city of Russia. In the study, there was no significant influence of geographical area on SF dimension of MCS but rural subjects scored slightly better for SF which was also found to be significant on application of unpaired student t test. On the contrary, Bakshi et al[10] and Babones et al[11] in their study reported that individuals residing in rural area are less likely perceive their health as good or excellent as compared to their urban counterparts.

In the present study, the subject belonging to lower class scored poorly for SF dimension of MCS but it was found to be insignificant on statistical analysis. The findings of present study collaborates with the findings of other studies.[10,12,13,14]

The impact of morbidity either due to DM or HTN alone or comorbidity (DM+HTN) was found to be significant for SF dimensions of MCS which is comparable to a study by Mandhari et al study in Oman[13] as seen in our study.

CONCLUSION

Young age, males and morbidity especially diabetics performed better for SF and the association was significant, while geographical area and socioeconomic status had insignificant impact on SF.

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