Original Research Article

Impact of socio-demographic variables and morbid conditions on general health component of perceived health using SF-36 form

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ABSTRACT

Background: Perceived health (PH) is a subjective assessment of the health and it is a strong, independent and reliable predictor of morbidity, mortality. It includes so many aspects that are difficult to capture clinically such as incipient disease, physiological, psychological reserves. We assessed the impact of diabetes mellitus (DM), hypertension (HTN), co-morbidity and other associated factors on the general health (GH) dimension of the PH of the patients attending the outpatient department (OPD), Inpatient department (IPD), rural health training centre (RHTC) and urban health training centre (UHTC) of Shri Ram Murti Smarak Institute of Medical Sciences (SRMS, IMS), Bareilly.

Methods: PH status of the patients was assessed by the GH dimension of the physical component summary of PH using the 36-Items short form health survey (SF-36).

Results: The impact of morbidity deteriorate the GH score but hypertensive patients scored poor results as compared to those with DM and comorbid patients (p>0.05). Age was inversely related with GH scores but male gender, higher education (p<0.05) and good occupation were all associated with higher GH score. There was not much influence of geographical area on the GH scores but urban score slightly better and the association was insignificant (p>0.05).

Conclusions: Male young patients from urban area, educated and good job performed better score for GH and association was significant for education and occupation. The presence of morbidity and co-morbid condition deteriorate the GH of the patients. The impact of various socio-demographic factors on the PH status was also evident in the study.

Keywords: Self-perceived health, General health, 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 etc., 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 NCDs. 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] Perceived health

is subjective or self-assessment of their health and includes many aspects that are difficult to capture clinically, such as incipient disease, disease severity, 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 morbidity as shown by many studies.[5-7] There are few such type of studies in India, none in the Uttar Pradesh region. Hence it was planned to carry out this study to initiate an innovative & inexpensive approach. The study was planned to assess the impact of diabetes mellitus, hypertension, co-morbidity and of various socio demographic factors on general health of patients.

METHODS

This facility based cross-sectional observational study was conducted among registered subjects of diabetes mellitus (DM), hypertension (HTN) and co-morbid (DM+HTN) patients aged ≥ 35 years attending the OPD, IPD, RHTC and UHTC of Shri Ram Murti Smarak Institute of Medical Sciences, Bareilly. The sample included all patients aged 35 years and above suffering from diabetes mellitus, hypertension or with co-morbidity for more than 6 months, who attended the OPD, IPD, RHTC and UHTC of SRMS, IMS during the study period from 1st June 2012 –31st May 2013. So, a total of 1130 subjects participated in the study after considering the exclusion criteria i.e. patients Suffering from DM/HTN for less than 6 months, age <35 years, Type 1 DM, gestational DM, impaired glucose tolerance (IGT).

Two forms were used to collect the required data. The first was a checklist containing items of socio-demographic and other epidemiological correlates. The second was Hindi translated and patient friendly modified version of RAND SF-36 questionnaire, used to assess the general health. It included 6 items under general health 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 of all 6 questions which is the average general health score of individual patient. Analysis was performed using SPSS version 20.0 and stat Direct Ltd version 2-70-800 software with level of significance set at 0.05. Chi-square test was applied wherever applicable.

RESULTS

A total of 1130 subjects participated in the study in which the rural-urban distribution revealed rural preponderance as majority of the subjects belong to rural area (53%) compared to urban (47%). It was also observed that majority (63.7%) were of non-geriatric age group (<60 years) while 36.3% belonged to geriatric age group (Table 1).

Table 1: Distribution of study subjects according to age, sex and geographical area.

Age group (years)	Urban						Rural						Grand total	
	Male		Female		Total		Male		Female		Total			
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
35-40	32	23.53	20	14.71	52	38.24	46	33.82	38	27.94	84	61.76	136	12.04
40-45	35	27.34	25	19.53	60	46.88	36	28.13	32	25	68	53.13	128	11.33
45-50	37	22.16	30	17.96	67	40.12	49	29.34	51	30.54	100	59.88	167	14.78
50-55	45	25.42	33	18.64	78	44.07	66	37.29	33	18.64	99	55.93	177	15.66
55-60	38	33.93	23	20.54	61	54.46	30	26.79	21	18.75	51	45.54	112	9.91
60-65	52	27.51	45	23.81	97	51.32	60	31.75	32	16.93	92	48.68	189	16.73
65-70	30	27.78	22	20.37	52	48.15	32	29.63	24	22.22	56	51.85	108	9.56
70-75	22	30.99	15	21.13	37	52.11	21	29.58	13	18.31	34	47.89	71	6.28
>75	17	40.48	10	23.81	27	64.29	8	19.05	7	16.67	15	35.71	42	3.72
Total	308	27.26	223	19.73	531	46.99	348	30.8	251	22.21	599	53.01	1130	100

Table 2: General health scoring according age and sex.

Age group (years)	Poor and fair (0-50)				Good and excellent (50-100)				Total
	Male		Female		Male		Female		
	No.	%	No.	%	No.	%	No.	%	
35-45	74	28	69	26.1	75	28.4	46	17.4	264
45-55	102	29.7	105	30.5	95	27.6	42	12.2	344
55-65	108	35.9	80	26.6	72	23.9	41	13.6	301
>65	89	40.3	61	27.6	39	17.6	32	14.4	221
Total	373	33	315	27.88	281	24.88	161	14.28	1130

It is also evident that out of the 1130 total subjects, majority (57.90%) was of male as compare to female (42.10%) and on the basis of average GH scoring, as age advances male scoring better as compare to female subjects (Table 2).

GH score of the subjects according to their geographical area which shows that rural preponderance (53%) was evident in the study and urban participant score better than rural but again results are not significant on statistical analysis (p>0.05) (Table 3).

The GH scoring according occupation of participant and it is evident that higher qualified person score better as compare to poor qualification, it is also confirmed by getting significant results on application of chi square test (p<0.05) (Table 4).

On observation of the average GH scoring as per the education level of study subjects, as education improve GH scored more in good and excellent group i.e. intermediate, UG/PG and professor scored good & excellent in higher percentage and it found highly significant on statistical analysis (p<0.05) (Table 5).

On comparing the respondents by morbidity (DM, HTN or DM+HTN) and GH average score in Table 6, it was observed that overall majority were those subjects who had either DM or dual morbidity in both score categories as compared to those who had HTN alone. It was further observed that the morbidity either DM or HTN or both had significant impact on GH scoring but in present study hypertensive patient scored poor but it is insignificant (p>0.05) on application of statistics (Table 6).

Table 3: General health scoring according geographical area.

Geographical area	Poor and fair (0-50)		Good and excellent (50-100)		Total
	No.	%	No.	%	
Urban	313	58.9	218	41	531
Rural	375	62.6	224	37.4	599
Total	688	60.88	442	39.12	1130

χ^2=1.43, df=1, p=0.2318.

Table 4: General health scoring according their occupation.

Occupation	Poor and fair (0-50)		Good and excellent (50-100)		Total
	No.	%	No.	%	
Unemployed	53	55.79	42	44.21	95
Unskilled worker	87	72.5	33	27.5	120
Semiskilled Worker	8	33.33	16	66.67	24
Skilled worker	241	69.05	108	30.95	349
Clerical/ shop owner/ farmer	294	56.76	224	43.24	518
Semi profession	2	40	3	60	5
Profession	3	15.79	16	84.21	19
Total	688	68.88	442	39.12	1130

χ^2=46.1, df=6, p=0.000.

Table 5: General health scoring according their education.

Education	Poor and fair (0-50)		Good and excellent (50-100)		Total
	No.	%	No.	%	
Illiterate	265	73.01	98	27	363
Primary (1-5)	123	63.4	61	36.6	194
Junior (6-8)	72	67.29	35	32.71	107
High school	93	59.23	64	40.76	157
Intermediate	67	48.2	72	51.79	139
UG/PG	60	42.56	81	57.44	141
Professional	8	27.58	21	72.42	29
Total	688	60.88	442	39.12	1130

χ^2=70.1, df=6, p=0.000.

Table 6: General health scoring according their morbidity.

Morbidity	Poor and fair 0-50		Good and excellent 50-100		Grand total
	No.	%	No.	%	
DM	205	59.24	141	40.45	346
HTN	103	65.61	54	34.4	157
DM+ HTM	380	60.61	247	39.39	627
Total	688	60.88	442	39.12	1130

χ^2=1.88, df=2, p=0.3906.

DISCUSSION

In this study, age inversely influence the GH dimension, as the age advances the score decreased, similar findings was obtained in a study by Wang et al and Joshi et al.[3,4] Baert et al also reported in their study carried out in 25 European Countries that age inversely influenced the GH dimension.[8] In present study the relationship between GH average scoring and sex was found to be insignificant (p>0.05). Gender influence was evident as average score for GH was better achieved by males as compared to females. Similar findings were also observed in various other studies.[9,10]

In the present study, education significantly influenced the general health (GH) dimension of physical component summary (PCS) of perceived health. As the education level improve, the average GH score increases in good and excellent category while it decreases in poor and fair. The findings of this study are consistent with the study carried out in India in which illiterate and below matriculates were less likely found to perceive their health as good or excellent as compared to higher educated ones.[11] The results also collaborates with the findings of other studies in which educational attainment was found to be significant determinant of perceived health.[3,8,9,12-14]

In case of occupation which is also influence the GH dimension of PCS significantly and found that semi-professional and professional group scored better as compare to unemployed, unskilled group of occupation. Same results are also found in the study done by Wang et al.[3] Contrary to our study, Gueorguieva et al did not find any significant impact of occupation on changes in health.[15] Demirichyan et al also found that unemployed subjects scored poor as compare to their counterparts.[16]

In present study, there was no significant influence of geographical area for GH but urban subjects scored slightly better as compare to rural counterpart while Grigoriev et al in his study in Belarus city of Russia found the opposite results.[17] Similar results found by the Bakshi et al and Babones et al in their study reported that individuals residing in rural area are less likely to perceive their health as good or excellent as compared to their urban counterparts.[11,13]

In the study, the impact of morbidity either due to DM or HTN alone or co-morbidity (DM+HTN) was not found to be significant for GH dimension. While in present study hypertensive patients scored more poor results. So many studies shows the same results.[14,18-20]

CONCLUSION

Male patients from the younger age group with urban background with good education and good job performed better score for general health and their association was significant for education and occupation, while geographical area and morbidity had insignificant impact. SPH is considered to be a predictive variable of one's own morbidity and mortality and is an inexpensive and non-interventional method which is presumed to be far better than physician's evaluation as depicted by literature review on the topic.

Recommendations

The present study provides preliminary understanding of the factors influencing the SPH in this country with enormous socio cultural diversities, further longitudinal studies should be planned to explore more qualitative as well as quantitative data and other related variables to provide better insight into the factors that hinder or promote health and wellbeing. There is a need to frame a policy to include the subjective part of health in all health related studies because it is simple, inexpensive and more valuable than physician's evaluation.

Limitation

Due to paucity of literature & research being done on SPH in India, I had to compare my results with foreign studies.

Relevance of the study

This is new study carried out to focus the researcher's attention towards subjective part of health which has remained neglected since long. Also, not many studies have been carried out on this subject in India, so it was an initiative taken on the part of the author to study this topic and also encourages other authors to explore and develop a modified version of the study questionnaire i.e. SF-36 to be used in Indian context.

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