

## ASSESSMENT ON OVERALL PHYSICAL HEALTH STATUS OF DIFFERENT SOCIO-ECONOMIC CONDITION: A NORTH-EASTERN STATE POPULATION STUDY

Twinkle Duwarah<sup>1</sup> and Biswajit Basumatary<sup>2</sup>

<sup>1</sup>PhD Scholar, Department of Health Sciences, LNIPE, Gwalior, India

<sup>2</sup>Dean, Lakshmi Bai National Institute of Physical Education, Guwahati, NERC  
duwarah.twinkle@gmail.com, biswajitb64@gmail.com

### ABSTRACT

Health status of person differs in varied cities, countries and continents. Life style, infrastructure, emotional and social wellbeing are influential factors to physical as well as mental health. It is very necessary to have knowledge about one of the major aspect of overall health i.e. overall physical health. To assess the overall physical health status the present study was conducted in normal adult men living in Assam, a North-Eastern state of India by using SF-36 questionnaire. Visiting cards, a consent form attached with the Kuppaswamy's socio-economic status questionnaire and SF-36 questionnaire were used to conduct the study after getting permission from colleges, schools, offices, clubs etc. where ever it was required. Twenty five hundred normal individuals of age ranged between 30-40 years belonged to five different socio-economic classes from various districts of Assam state were considered as sample of the study. The study revealed that lower middle socio-economic class group was better in physical functioning, general health and overall physical health status amongst all different socio-economic groups.

**Keywords:** SF-36, North-Eastern, multidimensional, SEC, PCS.

### Introduction

In a region, status of an individual health is largely governed by the physical health infrastructure and the concerning services provided to the public. One can assess his health in terms of positive indicators of health status or the total absence of physical health as well as mental health, reflected in disease specific mortality rates. As per W.H.O statistics India is lagging much behind many countries of the world in health status. According to Annual Report, 2008 India got 112<sup>th</sup> position. According to study conducted by Basumatari, (2016) it was no less true in the case of Assam state. The self-reported health responses were collected as an indicator of an individual health status and these indicator measures individuals' perception of their overall

health. In the year 2016, Khan and Flynn conducted a research work on the self-reported health status of older adults in Malaysia and Singapore. Their study showed that health with poor condition was more prevalent among people with lower education. Again, a study revealed that older employed adults had better health outcomes than unemployed older adults and a strong relationship existed between employment and health status in older adults beyond what can be explained by socioeconomic factors such as education, income (Kachan & Fleming, 2015). Ronika Agrawal and Charleen D'silva found that the mean of physical component summary (PCS) was 47.87 with SD  $\pm 8.17$  while conducted a study among normal individuals of age group between 35 to 60 years. There was

almost similar between the physical component summary (PCS) score of overall Indian population and Assam state. Again, public from United States of America the physical component summary (PCS) mean value was 50 with SD  $\pm 10$ .

### Materials and Methods

The instruments used to conduct the present research study were Kuppaswamy's socio-economic status scale and SF-36 Questionnaires. The used socio-economic status scale was updated by Dr. R.L. Lakshman Rao and Dr. Nazia Tabassum while SF-36 was used to assess health status and it was developed by John E. Ware, Jr. Investigators collected the data on normal

adult working men with sample size twenty six hundred (N=2600) randomly and then categorized in to 500 samples in each socio-economic class as per socio-economic condition from five different divisions of Assam state. The age of the subjects was in between 30 to 40 years. Over aged respondents as well as respondents below 30 years were not considered as samples for this study. After providing information about the objective and methodology of the study, all respondents took part in this research work with their own interest.

The abbreviations used in the present study were as follows.

Abbreviation	Full form	Abbreviation	Full form
PF	Physical Functioning	SEC	Socio-economic class
RP	Role Physical	UC	Upper Class
BP	Bodily Pain	UMC	Upper Middle Class
GH	General Health	LMC	Lower Middle Class
PCS	Physical Component Summary	LUC	Lower Upper Class
		LC	Lower Class

The One way analysis of variance (ANOVA) was applied to ascertain whether any significance difference was there in overall physical health status and its subscales among five different socio-economic categories. In the testing of two tailed hypothesis, the level of significance was set at 0.05.

### Results and Findings

Table-1 presented the descriptive statistics of the data on various factors in overall Physical Health status of adult men belonging to five different socio-economic groups. Table-2 presented that F-values of Physical functioning, General health and Physical component summary were significant at 5% level because the sig. (p)

value attached with calculated F-value was 0.00 which was not more than 0.05 while insignificant differences were seen in some overall physical health factors namely Role physical and Bodily pain as p-values of these two factors were more than 0.05. In Table-3, it was observed that amongst all the socio-economic class (SEC) pair wise comparisons the difference between Physical functioning (PF), General health (GH) and Physical component summary (PCS) measures of the respondents between the socio-economic classes (as mentioned in Table-3) were significant at 5% level as the p-values for their respective mean differences were less than 0.05 or equal.

From findings obtained, it was observed that the adult working male belonged to lower

middle class (LMC) had better mean General health (GH) and Physical component summary (PCS) measures than remaining four different socio-economic groups. Also, the lower middle class (LMC) had better mean Physical functioning (PF) after upper socio-economic class. By means of these factors we can conclude that the lower middle socio-economic groups was good in overall physical health status in comparison to other socio-economic groups of Assam state.

### Discussion

We have conducted this study to ascertain the overall physical health status in normal working population with the help of the SF-36 questionnaire. There are different causes that affect the physical health in individuals belonging to various socio-economic groups. The maximum score in the used SF-questionnaire is 100 while the lowest is zero representing poor overall health.

The mean calculated for PF (physical functioning) is 58.18 and SD is  $\pm 11.42$ . In present days, many individuals live a sedentary life with the advancement in the technology. Because of less participation in any sporting activities and with the availabilities of elevators, escalators, lifts etc. they don't climb the stairs, there is a loss of muscle strength as the passage of age which in turn results in frailty and it affects a person from living an independent life. Regular exercises can help elderly population to be functionally self-reliant (Buchner 1997, La Croix et al. 1993, Nelson et al. 1994). The mean of PF (physical functioning) is 84.2 and SD is  $\pm 23.3$  in the United state of America population. The mean and standard deviation scores are higher than those got by our study. In western countries, people are involved in many extra-curricular activities like skating,

playing golf, skiing etc. and used to live more physically active. It was revealed from findings on physical functioning that upper socio-economic group had better PF than other socio-economic groups and followed by lower middle class.

General health (GH) considers an individual's perception of his or her health and his or her attitude towards life. The calculated mean for GH is 54.08 and SD is  $\pm 12.48$ . Health has fundamentals without which any drugs, operations and surgeries will be effective. The fundamental factors affecting our health are proper nutritious food, exercises, adequate hydration, sunlight, emotional aspects, spiritual aspects, proper sleep and hygiene. The mean of GH is 71.9 and SD is  $\pm 20.3$  in United States of America population which higher than those got by our study. Findings on general health revealed that the lower middle socio-economic group had better general health than socio-economic groups.

The physical component summary (PCS) calculated mean is 43.50 with SD  $\pm 5.94$ . In a research study findings on Indian population it found that the calculated mean of physical component summary (PCS) was 47.87 with SD  $\pm 8.17$ . That study was conducted by Ronika Agrawal and Charleen D'silva. There was very less difference between the physical component summary (PCS) score of overall Indian population and of particular north-eastern state in India i.e. Assam state. Again, when we looked at the population in the United States of America the physical component summary (PCS) mean value was 50 with SD  $\pm 10$ . In the present study, findings on physical component summary (PCS) revealed that the lower middle socio-economic class group had better physical health than other socio-economic groups.

Agrawal R. and D'Silva C. (2017) conducted a research on "Assessment of quality of life in normal individuals using the SF-36 Questionnaire", and it was published in International Journal of current research and review (IJCRR). They concluded their study that the quality of life of normal Indian population as per SF-36 scoring was around 75 on 100. The finding of studies was in partial consonance to our present study.

From findings and graphical representation as shown in figure 1, it was seen that the

adult working male belonged to lower middle class (LMC) had better mean General health (GH) and Physical component summary (PCS) measures than remaining four different socio-economic groups. Also, the lower middle class (LMC) had better mean Physical functioning (PF) after upper socio-economic class. By means of these factors we can concluded that the lower middle socio-economic groups was good in overall physical health status in comparison to other socio-economic groups of Assam state.

### References

**Smith, J. P. (1998).** Socioeconomic Status and Health. American Economic Association, 88(2) : 192-196.

**Kim, M. et al. (2010).** Socioeconomic Inequity in Self-Rated Health Status and Contribution of Health Behavioral Factors in Korea. Journal of Preventive Medicine and Public Health, 43(1), 50-61.

**Kumara et al. (2011).** Assessment of Socio-economic and Health Status of Fisherwomen Involved in Coir Retting in Dickwella Secretariat Division, Matara District. Tropical Agricultural Research, 23(1), 84-90.

**Khanday et al. (2012).** Health status of marginalized groups in India. International Journal of Applied Sociology, 2(6), 60-70.

**Galvez et al. (2013).** The Impact of Socio-Economic Status on Self-Rated Health: Study of 29 Countries Using European Social Surveys (2002–2008). International

Journal of Environmental Research and Public Health, 10(3), 747-761.

**Suman, et al. (2013).** Comparative study of health status in working men and women using Standard Form -36 questionnaire. International Journal of Pharmaceutical Science Invention, 2(3), 30-35.

**Basumatari, S. (2016).** Status of Health Infrastructure in Assam. Asian Journal of Multi-disciplinary studies, 4(9), 90-97.

**Gupta, A. A. et al. (2016).** Health and socioeconomic status of the elderly people living in Hilly areas of Pakhribas, Kosi Zone, Nepal. Indian Journal of Community Medicine, 41(4), 273-279.

**Agrawal R., D'Silva C. (2017).** Assessment of quality of life in Normal Individuals using the SF-36 Questionnaire. International Journal of Current Research and Review, 9(3), 43-47.

Table 1

Descriptive statistics of factors in overall Physical Health							
Factors	SEC	N	Mean	Std. Deviation	Std. Error	Minimum	Maximum
Physical Functioning	UC	500	59.86	11.83	0.53	15.00	100.00
	UMC	500	58.29	11.86	0.53	15.00	90.00
	LMC	500	58.40	11.53	0.52	20.00	90.00
	LUC	500	57.85	10.68	0.48	25.00	85.00
	LC	500	56.51	10.92	0.49	25.00	95.00
	Total	2500	58.18	11.42	0.23	15.00	100.00
Role Physical	UC	500	64.85	23.97	1.07	0.00	100.00
	UMC	500	64.80	23.87	1.07	0.00	100.00
	LMC	500	65.30	22.63	1.01	0.00	100.00
	LUC	500	65.05	22.60	1.01	0.00	100.00
	LC	500	65.45	23.58	1.05	0.00	100.00
	Total	2500	65.09	23.32	0.47	0.00	100.00
Bodily Pain	UC	500	49.49	17.81	0.80	0.00	100.00
	UMC	500	50.71	17.63	0.79	0.00	100.00
	LMC	500	51.87	17.79	0.80	10.00	100.00
	LUC	500	48.87	17.26	0.77	0.00	100.00
	LC	500	50.33	17.13	0.77	0.00	100.00
	Total	2500	50.25	17.54	0.35	0.00	100.00
Physical Component Summary measures	UC	500	43.30	5.87	0.26	27.07	59.29
	UMC	500	43.43	5.76	0.26	22.15	61.72
	LMC	500	44.50	5.75	0.26	21.21	64.38
	LUC	500	43.11	5.76	0.26	26.79	58.07
	LC	500	42.97	6.31	0.28	25.90	64.72
	Total	2500	43.46	5.91	0.12	21.21	64.72
General Health	UC	500	53.04	12.73	0.57	15.00	90.00
	UMC	500	55.64	11.77	0.53	20.00	90.00
	LMC	500	55.83	12.39	0.55	20.00	92.00
	LUC	500	52.19	12.72	0.57	20.00	90.00
	LC	500	53.73	12.40	0.55	15.00	87.00
	Total	2500	54.08	12.48	0.25	15.00	92.00

Table 2

One way analysis of variance of factors in overall Physical Health						
Factors	Groups	Sum of Squares	df	Mean Square	F	Sig.
Physical Functioning (PF)	Between	2890.34	4	722.59	5.58	0.00
	Within	322821.85	2495	129.39		
	Total	325712.19	2499			
Role Physical (RP)	Between	158.50	4	39.63	0.07	0.99
	Within	1358696.25	2495	544.57		
	Total	1358854.75	2499			
Bodily Pain (BP)	Between	2664.20	4	666.05	2.17	0.07
	Within	766329.02	2495	307.15		
	Total	768993.22	2499			
General Health (GH)	Between	5141.62	4	1285.41	8.35	0.00
	Within	384061.91	2495	153.93		
	Total	389203.53	2499			
Physical Component Summary (PCS)	Between	736.02	4	184.01	5.30	0.00
	Within	86623.35	2495	34.72		
	Total	87359.37	2499			

\*significant at 0.05 level

Table 3

Post Hoc Comparison of factors having significant differences among different socio-economic groups							
Factors	(I) SEC	(I) Mean	(J) SEC	(J) Mean	(I-J) Mean Difference	Std. Error	Sig.
Physical functioning (PF)	UC	59.86	UMC	58.29	<b>1.57*</b>	0.72	0.03
			LMC	58.40	<b>1.46*</b>	0.72	0.04
			LUC	57.85	<b>2.01*</b>	0.72	0.01
			LC	56.51	<b>3.35*</b>	0.72	0.00
	UMC	58.29	LC	56.51	<b>1.78*</b>	0.72	0.01
	LMC	58.40	LC	56.51	<b>1.89*</b>	0.72	0.01
Physical Component Summary (PCS)	UC	43.30	LMC	44.50	<b>1.20*</b>	0.37	0.00
	UMC	43.43	LMC	44.50	<b>1.07*</b>	0.37	0.00
	LMC	44.50	LUC	43.11	<b>1.39*</b>	0.37	0.00
			LC	42.97	<b>1.53*</b>	0.37	0.00
General Health (GH)	UC	53.04	UMC	55.64	<b>2.60*</b>	0.78	0.00
			LMC	55.83	<b>2.79*</b>	0.78	0.00
	UMC	55.64	LUC	52.19	<b>3.45*</b>	0.78	0.00
			LC	53.73	<b>1.91*</b>	0.78	0.02
	LMC	55.83	LUC	52.19	<b>3.64*</b>	0.78	0.00
			LC	53.73	<b>2.10*</b>	0.78	0.01
LUC	52.19	LC	53.73	<b>1.54*</b>	0.78	0.05	

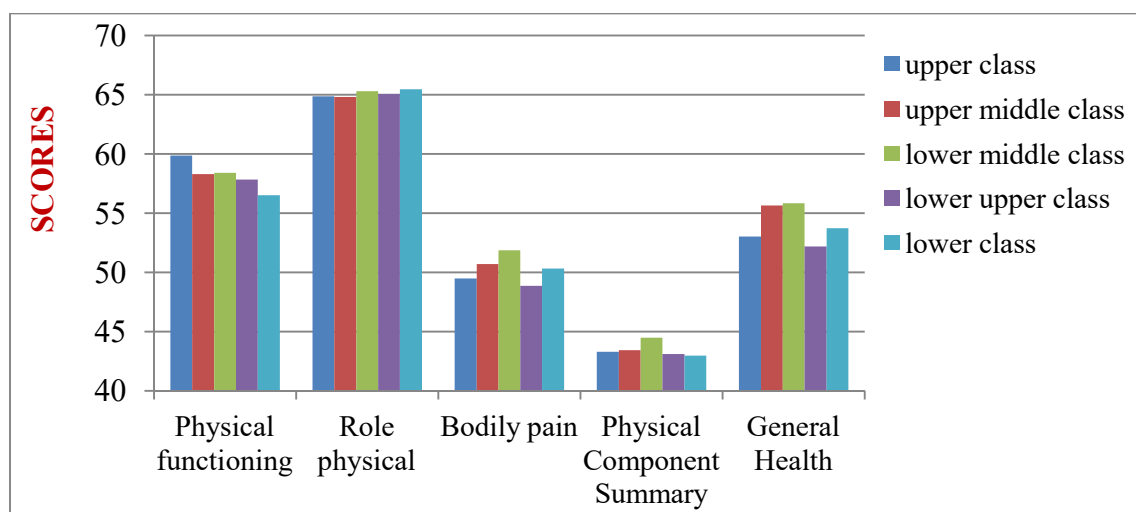


Figure 1: The mean scores of physical component summary (PCS) factors of SF-36 in five different socio-economic groups of Assam state.