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Short Communication

An update on B. G. Prasad's socioeconomic scale: May 2016

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ABSTRACT

Modified BG Prasad socioeconomic scale is a simple and widely used scale used by researchers to determine the socioeconomic status of study subjects in health studies in India. It is a scale based on the per capita income of an individual and hence has to be constantly updated to take inflation and depreciation of rupee into account. The consumer price index (CPI) for industrial workers (IW) is used to calculate updated income categories. The Consumer Price Index is updated every month and the same is available at the Labour Bureau of India website on the last day of every month. State-specific CPI values are also available on the Department of Labour website and should be used to determine more accurate income categories for the study area.

Key words: CPI, Socioeconomic, Prasad, Income

INTRODUCTION

One of the important determinants of health, nutritional status and morbidity and mortality of an individual is his/her socioeconomic status.[1]

Moreover, it is an important requisite to know the socio economic status of the study participants while conducting various community based studies, as it is an important factor for the standard of living and also influences social security in terms of the accessibility, affordability, acceptability and actual utilization of various health facilities.[2]

In India, B. G. Prasad's classification is one of the most commonly used scales for determining the socioeconomic class of an individual by researchers. This is a classification based on the per capita income of a person only and can be applied to both urban and rural populations. This article aims to give a brief description of the classification with its modifications and the latest update for May 2016 and a few points on the advantages and disadvantages of using the same.

Background

The B. G. Prasad's scale first appeared in the Journal of the Indian Medical Association in the year 1961 and was based on the consumer price index of 1960.[3] Given below is the original classification proposed by him in 1961.

Table 1: Social classification by B. G. Prasad (1961).

Social class	Per capita monthly income limits
I	100 and above
II	50-99
III	30-49
IV	15-29
V	Below 15

This classification was later modified by B.G Prasad himself in 1968 and in 1970.[4,5] The classification was further changed in1993 by Kumar.[6] This was revised in 1982 by introducing a linking factor of 4.93 to convert the new CPI (1982) to the old base CPI (1960). Again, a need was felt in 2001 to revise the base, which was done

by introducing the linking factor of 4.63. These linking factors have been given by the Labour Bureau of India.[7]

Calculating the new income values

To get the new income values, one has to first find out the current All India Consumer Price Index (AICPI) for industrial workers (CPI-IW; base 2001=100) from the website of the Labour Bureau of India. The Consumer Price Index for Industrial Workers (CPI-IW) is an important statistical/economic indicator which measures the change in prices of goods and services consumed by index population over time in reference to a base year. It was first introduced with base year 1960=100.

The series was then updated on base year 1982=100 and a revision in 1999-2000 has further updated the base on the year 2001=100. The current series of CPI-IW with base year 2001=100 covers 78 industrially important centres spread across the country. The CPI values are also available for different states of the country and for every month of the year on the website of the Labour Bureau of India. They are also available for different classes of workers, which can be used to calculate more specific income ranges.

The CPI (IW) is released on the last working day of the succeeding month and is updated on the same day on the labour bureau website. The CPI for agricultural and rural labourers is released on the 20th day of the succeeding month and is updated on the same day on the website of the Labour Bureau. Given below is a table showing the values of the CPI-IW with base 2001=100 for the last ten years.

Table 2: Consumer price index (Industrial Workers) Base 2001=100 for 2006 to 2016.

Year	January	February	March	April	May	June	July	August	September	October	November	December
2006	119	119	119	120	121	123	124	124	125	127	127	127
2007	127	128	**127**	128	129	130	132	133	133	134	134	134
2008	134	135	137	138	139	140	143	145	146	148	148	**147**
2009	148	148	148	150	151	153	160	162	163	165	168	169
2010	172	170	170	170	172	174	178	178	179	181	182	185
2011	188	**185**	185	186	187	189	193	194	197	198	199	**197**
2012	198	199	201	205	206	208	212	214	215	217	218	219
2013	221	223	224	226	228	231	235	237	238	241	243	**239**
2014	237	238	239	242	244	246	252	253	253	253	253	253
2015	254	**253**	254	256	258	261	263	264	266	269	270	**269**
2016	269	**267**	268	271	275							

Source: Labour bureau of India website (http://labourbureau.nic.in/indtab.pdf)

Table 3: Advance calendar for AICPI release date as per Labour Bureau of India for 2016.

Release of Index for the month	CPI(IW) Release Date (Base 2001=100)
January 2016	29 February 2016
February 2016	31 March 2016
March 2016	29 April 2016
April 2016	31 May 2016
May 2016	30 June 2016
June 2016	29 July 2016
July 2016	31 August 2016
August 2016	30 September 2016
September 2016	31 October 2016
October 2016	30 November 2016
November 2016	30 December 2016
December 2016	31 January 2017

Source: Labour bureau of India website (http://labourbureau.nic.in/indnum.htm).

The table 2 shows that the CPI-IW mostly shows an upward trend, except those values highlighted in bold, where it shows a negative trend. Also, we observe that the CPI-IW values remained static for three months in 2009 from January to March and 2010 from February to April. In July 2009 there was a sudden increase in CPI (IW) from 153 to 160.

Table 3 shows an advance calendar for the release of the CPI (IW) values for the current year.

To calculate the latest update of the B.G Prasad's scale, first, we have to find out the latest value for the CPI-IW which is 275 for May 2016. This value is then used to calculate the multiplication factor which is given by the formula:

Multiplication factor (MF) = Current index value/base index value in 2001 (i.e., 100)

Multiplication factor (MF) for May 2016 = 275 / 100= 2.75

The new income value can now be calculated using the following equation:

New income value = Old income value (Base 1960=100) × 4.93 × 4.63× MF

where 4.93 (to convert the value from base year 1960 to 1982) and 4.63 (to convert the value from base year 1982 to 2001) are the linking factors given by the Labour Bureau and the multiplication factor is used to calculate the income ranges for different socioeconomic classes considering the base year 2001 (to convert the income value from base year 2001 to current time, here May 2016).

Calculation of current income ranges for B. G. Prasad Socioeconomic Classes:

For the estimation of new income range for any socioeconomic class, the corresponding lower limit of the range of base year 1960 is taken into consideration. The lower limit of base year 1960 is multiplied with the linking factors and multiplication factor to get the lower limit of current socioeconomic range and rounded to next figure as the figures are per capita income in rupees. The upper limit of any socio economic class is calculated by deducting 1 to the lower limit of immediate upper socio economic class.

For example: For May 2016,

Socioeconomic class V:

The upper limit is calculated by 15 x 4.93 x 4.63 x 2.75 = 941.56 ≈ 942

So for socioeconomic class V the per-capita income must be less than (<) 942

The lower limits are:

Socioeconomic class IV: 15 x 4.93 x 4.63 x 2.75 = 941.56 ≈ 942
Socioeconomic class III: 30 x 4.93 x 4.63 x 2.75 = 1883.13≈ 1883
Socioeconomic class II: 50 x 4.93 x 4.63 x 2.75 = 3138.56 ≈ 3139
Socioeconomic class I: 100 x 4.93 x 4.63 x 2.75 = 6277.12 ≈ 6277

The upper limits are (Lower limit of immediate upper socioeconomic class - 1):

Socioeconomic class IV: 1883-1 = 1882
Socioeconomic class III: 3139-1= 3138
Socioeconomic class II: 6277-1=6276

Table 4 shows a hypothetical estimation of per capita income ranges for the base year 1982 and 2001 considering the linking factors 4.93 and 4.63. This is to understand how linking factors are used for estimation of income ranges for different socioeconomic classes. It also shows the per capita income ranges for May 2016 considering the All India Consumer Price Index (AICPI-IW) for May as 275.

Table 4: Updated B.G. Prasad classification for the month of May 2016.

Social Class	Per capita monthly income limits, (Base 1960 = 100)	Per capita monthly income limits, (Base 1982 = 100)	Per capita monthly income limits, (Base 2001 = 100)	Per capita monthly income limits, May 2016
	-	Linking Factor: 4.93 (1960 Value x 4.93)	Linking Factor: 4.63 (1960 Value x 4.93 x 4.63)	Multiplication Factor:2.75 (1960 Value x 4.93 x 4.63 x 2.75)
I	100 And Above	493 And Above	2283 And Above	6277 And Above
II	50-99	247-492	1142-2282	3139-6276
III	30-49	148-246	685-1141	1883-3138
IV	15-29	74-147	343-684	942-1882
V	Below 15	Below 74	Below 343	Less Than 942

Advantages and disadvantages

The main advantage of the B.G. Prasad SES is its simplicity. There are not many variables or values to learn by heart to apply it, unlike other SES, as it considers only the per capita income. Also, it is very easy to construct the table of income categories, once we find out the latest appropriate CPI value from the Labour bureau website. The scale can also be customized appropriately to suit the population of interest as there is different CPI for different classes, namely, agricultural workers, industrial workers etc. As for the disadvantages of using this scale, one has to continuously update this scale on a monthly basis according to the latest CPI values, due to the vagaries of the value of the rupee. It has also been suggested that for this reason, any income-based classification remains relevant to the study period only.[8]

Another criticism levelled against this scale is that, it tends to over simplify things by considering only the per capita income, ignoring other indicators like education, occupation, housing conditions and material possessions. It has been opined that B.G. Prasad SES Classification is not in tune with the current times and that regular

monthly or annual income may not be a true reflection of the family's economic standing, especially in rural areas.

Also, one-time monetary gain or loss may affect SES of the family and neither is their savings or their debt situation considered in this scale, which can have bearings on the social standing of the individual or the family. Also, any scale based on the per capita income is not a true measure of development but only shows economic growth.

CONCLUSION

Socioeconomic classification is an important predictor of the health status of an individual or a family. Constant changes in the price of goods and services in the country due to inflation make it imperative to constantly update the income-based socioeconomic scales. The B.G. Prasad scale used widely to determine the socioeconomic status in health studies has been updated for the most recent CPI (IW) for May 2016. State-specific CPI (IW) should be used by researchers in community health-related studies to determine the socioeconomic status of the study subjects which will make the same more appropriate.

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