Original Article

Validation of Standard of Living Scale with Comparison to Other Socio-Economic Scales in a Semi Urban Area of Mangalore : A Pilot Study

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Abstract

Introduction: Socioeconomic status is an important determinant of health condition of an individual or a family. Many tools are being used to assess the socioeconomic status. Each of the scales have their own advantages and disadvantages. But an appropriate and a standardized tool is yet to be developed

Objectives : To compare the standard of living based on different socioeconomic scales in a semiurban area of Mangalore and to assess the appropriateness of socioeconomic scales to be used in a semiurban area of Mangalore

Methodology : A cross sectional study was conducted in households of Kuthar and Manjanady villages of Dakshina Kannada district from June- August 2014. Questionnaire method was used to avail information about the socioeconomic status of the study population. The data was analysed using SPSS 16 software.

Results : Majority (70%) of the study population belonged to class IV of kuppuswamy scale. Whereas according to Modified BG Prasad scale majority of the population belonged to class III (35%) and class II (28%). According to Pareek's scale around 92% of population belonged to class IV. But when standard of living was assessed majority of them (62%) had high standard of Living.

Conclusions : We found that Standard of living is the better option in assessing the socio-economic status of a household as compared to all other scales whether be it urban, rural or semi urban.

Keywords : socio economic status, different socioeconomic scales, Modified Kupuswamy scale, Pareek scale, Modified BG prasad scale and standard of living index

Introduction

Socio-economic status has been defined as "The position that an individual or family occupies with reference to the prevailing average standards of cultural and material possessions, income and participation in group activity of the community".

The social status may be inherited, but in modern society it

is achieved on the basis of occupation, income, type of housing and neighborhood, membership of the certain associations and organizations, material possessions etc.¹

Socio-economic status also influences the accessibility, affordability, acceptability and actual utilization of various available health facilities.²

The Socio-economic status (SES) is an important determinant of health and nutritional status as well as of mortality and morbidity. The variables that affect socio-economic status are different in case of urban and rural societies. Hence, separate scales are used for measuring the socio-economic status in rural and urban areas.³

Socio-economic status is a important tool to identify below poverty line (BPL) families in order to identify the actual beneficiaries who will be benefitted by the government programs.⁴ According to the report of expert group of Government of India Planning Commission 2014 estimates

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that 30.9% of rural population and 26.4% of urban population was below poverty line in 2011-2012. The all-India ratio was 29.5%.⁵

There are different socio-economic scales which are widely used they are Modified kuppuswamy's socio-economic status scale for use in urban areas by employing three major characteristics namely education, occupation and monthly income from all sources, Modified BG Prasad for urban and rural areas based on the per capita income of the family and number of family members and Pareek's scale in rural area which is classified based on caste, occupation education, land, social participation, family members, housing conditions, farm power and material possession. Other scales are Standard of living and wealth index which is based on the housing conditions and material possessions¹

Only estimation of the Income, occupation and education does not correctly estimate their socioeconomic status. Availing an exact family income is difficult and most of time it is misleading in assessment of socio-economic status.

To understand the appropriateness of different socio-economic status in a semi-urban area .A study was undertaken to determine so.

Objectives

- 1) To compare the standard of living based on different socioeconomic scales in a semi-urban area of Mangalore
- 2) To assess the appropriateness of socioeconomic scales to be used in a semi-urban area of Mangalore

Methodology

Study setting

This was a community based study, conducted in Kuthar and Manjanady villages, rural field practice areas attached to The Department of Community Medicine, K S Hegde Medical Academy, Mangalore, Dakshina Kannada District which is covered under the Grama Kshema Project

Sample size & Sampling method

All the households covered under the Grama Kshema

Project was Included. Totally 40 households were included in the study.

Study duration

The study was conducted over a period of 1 month (June15th-August 15th 2014)

Method of data collection

Households were consecutively approached to assess their socio-economic status.

The data was collected by interview method using structured questionnaire method of different socio-economic scales available after obtaining an oral consent. The data was collected by a single interviewer who was trained on all the four classes of socio-economic scales (1st author) to avoid inter-observer and intra-observer bias.

For comparison of the scales, in the semi-urban area four commonly used SES scales were applied on the same family at the same time one after the other by the investigator; viz. Standard of Living, Kuppuswamy scale, Pareek scale and Modified B G Prasad scale.⁶ The correction factor for Modified BG Prasad and Modified Kuppuswamy scale were calculated by taking Consumer Price Index(2014) from the Ministry of Statistics and Program Implementation, Government of India.⁷ The households were classified based on different available socio-economic scales and later assessed to know the appropriateness of each scales.

Statistical analysis

The collected data was recorded using Microsoft excel. The data was analyzed using SPSS version 16. Proportions and comparisons were done. To measure the agreement between the scales, Spearman's rank correlation was applied.

Ethical Considerations

The following ethical issues were considered for this study

1. There is no physical harm to the participants as there was no intervention or collection of blood sample.
2. Oral consent was obtained from all the participants

Results

Among the 40 families surveyed, it was observed that, according to Standard of living Index majority (62%) belonged to high class, 35% belonged to Middle class and 3% belonged to low class. When for the same families Kuppuswamy scale was applied majority (70%) belonged to upper lower class (IV), 17% belonged to lower middle class (III), 10% belonged to upper middle (II) and 3% belonged to lower class (V). When Pareek scale was applied, majority (92%) belonged to the upper lower class (IV), 5% belonged to lower middle class (III) and 3% belonged to lower class (V). Similarly 35% belonged lower middle class (III), 28% upper middle class, 20% upper lower class (IV), 15% lower class (V) and 2% upper class (I) when Modified B G Prasad scale was applied ^{Table.1}

Among the 25 families classified as high class in the SLI scale, 60% belonged to upper lower class (class IV), 24% belonged to lower middle class (class III) and only 16% belonged to upper middle class (class II) of Kuppuswamy scale. Families belonging to medium class in SLI scale, 92.9% belonged to class IV and 9.1% belonged to class III of Kuppuswamy scale. Only in families classified as low class in SLI scale, all them belonged to class V of Kuppuswamy. ^{Figure 1}

Similarly when SLI was compared with Modified BG Prasad scale. In families classified as high class in SLI scale, 40% families belonged to upper middle class(Class II) , 32% of them belonged to lower middle(Class III) 16% belonged to upper lower(Class IV) , 8% of families belonged to lower class(Class V) and only one family(4%) belonged to upper class(Class I) according to B.G.Prasad Classification. .In families belonging to medium class in SLI scale, 42.9% belonged to class III, 28.6% belonged to class IV, 21.4% to class V and 7% belonged to class II of Modified B G Prasad scale. Only in families classified as low class in SLI scale, all them belonged to class V Modified B G Prasad scale. ^{Figure 2}

When compared standard of living with pareek scale. In families classified as high class in SLI, 92% belonged to upper lower class (class IV) and 2(8%) families belonged lower middle class (class III) of pareek scale. In Families classified as middle and low class in SLI scale, all them belonged to

class IV and V of Pareek's scale respectively. ^{Figure 3}

When we compared Modified B G Prasad with the kuppuswamy scale. There was no similarity in class I, a similarity of 27% in class II, 14.3% in class III, 87.5% in class IV and 16.7% in class V between Modified BG Prasad and Kuppuswamy was seen. ^{Figure 4}

When Pareek scale was compared with the kuppuswamy scale. There was no similarity between class I, II, III, but a similarity of 75.7% was seen in class IV and 100% in class V between Pareek scale and Kuppuswamy was seen. ^{Figure 5}

When Pareek scale was compared with the Modified B G Prasad scale. There was no similarity between class I, II, III, but a similarity of 21.6% was seen in class IV and 100% in class V between Modified B G Prasad scale and Kuppuswamy. ^{Figure 5}

A rank correlation computed between SLI and Kuppuswamy scale with the above data shows that there is a positive correlation agreement ($R = 0.427$, $P = 0.006$) between them. There was also a similar observation between SLI and Modified BG Prasad scale ($R=0.428$ and P value= 0.006) and SLI and Pareeks scale ($R=0.322$ and P value= 0.042).

Table 1 : Showing socioeconomic status according to different scales

N=40	Modified Kuppuswamy Scale	Modified BG Prasad Scale	Pareek's Scale	Standard of Living Index
Class I	-	2%	-	62%(High SLI)
Class II	10%	28%	-	35%(Medium SLI)
Class III	17%	35%	5%	3%(Low SLI)
Class IV	70%	20%	92%	
Class V	3%	15%	3%	

Discussion

In this study according to Standard of living Index majority (62%) belonged to high class, Similarly according to NFHS 3 data also 63% of the Indian population were above poverty line.(9)

However, majority of the same families were grouped as upper lower class (class IV) according to kuppuswamy scale, upper lower class (class IV) according to Pareek's

Fig. 1: Showing agreement between standard of living index and kuppuswamy scale

Fig. 2: Showing agreement between standard of living index and modified bg prasad

Fig. 3: Showing agreement between standard of living index and pareek scale

Fig. 4: Showing agreement between modified bg prasad and kuppuswamy scale

Fig. 5: Showing agreement between kuppuswamy scale and pareek scale

Fig. 6: Showing agreement between modified b g prasad and pareek scale

scale and according to Modified BG Prasad they belonged to upper (class II) and lower middle class (class III) which was similar to the previous study conducted by Masthi RNR et al.⁴

Around 60% of families of class IV Kuppuswamy, 92% of lower (class IV) class in Pareek scale and 72% of the upper middle and lower middle class of Modified BG Prasad scale

had also been placed under high in SLI.

Correlation was applied between the SLI and Kuppuswamy scale, SLI and Modified BG Prasad scale and SLI and Pareek scale. It was seen that all the other scales when correlated with SLI had a positive correlation. Even though they had positive correlation the discrepancy among the classes was seen. Many of the population who had high standard living

belonged to IV class of kuppuswamy, II and III of Modified BG Prasad and IV class of pareek. But one family which had low standard of living belonged to class V of kuppuswamy, BG Prasad and Pareek scale. So, Kuppuswamy, Modified BG Prasad and Pareek scales can determine the lower class but determining the upper classes it was difficult.(9)

Hence, Kuppuswamy scale, Modified B G Prasad scale and Pareek's scale which is more focused on income and inappropriate possessions did not give the approximate picture of living standards.

The modified Kuppuswamy scale which primarily considers education, occupation and Income and does not give importance to possessions and number of family members. Similarly Modified BG Prasad scale considers only family Income and Family members which gives no importance to other criteria such as material possessions.

As far as Pareek scale is concerned even though material possession is included it is inappropriate. Pareek scale considers only agricultural possessions and does not include the household possessions. The earlier study said that SLI stands out as a unique reliable measure of SES by taking into consideration the wealth possession which we agree with it.⁴

Even though wealth index is an appropriate measure of socioeconomic status. It can be considered only in large survey and not in individual case taking or interventions as it has many components included in it.⁹

As per our study we could see that the NFHS 3 data which talks about wealth index (Quintiles) is similar to SLI. But, wealth index does not go with any other socioeconomic scales. It would be better to use SLI to obtain high specificity even for large surveys.⁹

But possessions of things should be increased in SLI for it to be more appropriate.

Socio-economic status is an important indicator of the

health status. Hence along with material possessions and number of family members there is a need to add all expenditure of the family.

There is also a difficulty in updating the Kuppuswamy and Modified BG Prasad scale due to Inflation and change in the CPI (consumer price Index) every month. Again CPI according to the Labour Bureau, Government of India, 2014 is different from the CPI according the Ministry of Statistics and Programme Implementation, Government of India. So determining CPI for these scales are going to be difficult. So, a single nationalized CPI for calculating socio-economic status would be helpful.

Limitations of this study were that it was done on a small sample because it is a pilot study. The study is being planned on a larger scale with better representation of the households so as to get a better picture and the results published at a later date.

Conclusion

As always been seen the different socio-economic scales used in different regions of India have been inappropriate to assess the standard of living and status of people in the society which is also endorsed in our study. We found that Standard of living is the better option in assessing the socio-economic status of a household as compared to all other scales whether be it urban, rural or semi urban. But to add on, the existing SLI scales needs some more modification too.

Recommendations

Along with the education, occupation and income it is important to consider their material possessions, family members, expenditure on health, food, education, sanitation and occurrence of major events at the family. Even though many scales are being used to assess the socio-economic status each of these scale have their own advantages and disadvantages. Hence, an appropriate socio-economic scale is in need to be developed

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