RISK OF BENIGN PROSTATIC HYPERPLASIA WITH REFERENCE TO SOCIOECONOMIC STATUS: A BRIEF STUDY

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ARTICLE INFO	ABSTRACT
Article history Received 18/06/2021 Available online 30/06/2021 **Keywords** Benign Prostatic Hyperplasia, Epidemiology, Prostate Cancer, Socioeconomic Status.	Benign prostatic hyperplasia (BPH) is a non-malignant condition with poorly characterized epidemiology affecting older men . Androgens play a vital role in its development. The most common manifestations of BPH known as lower urinary tract symptoms, are hesitancy, straining, weak flow, prolonged voiding, partial or complete urinary retention and increased frequency of micturition. It was estimated to affect approximately 10% of men in their 30s, 20% of men in their 40s, 60% of men in their 60s, 80% of men in their 70s, and 90% of men in their 80s. It has been found that BPH and prostate cancer is highly prevalent among Africans and Africans in the Diaspora. Interestingly not enough study is available related to Socioeconomic group and risk of BPH. Methodology: In the current study sixty (60) diagnosed and randomly selected cases of BPH were categorized as per the standard socioeconomic scale, Kuppuswamy`s Socioeconomic status scale. Results: The study reveals that majority (40%) of randomly selected BPH patients belong to upper-lower class followed by (31.66%) lower-middle, (26.67%) upper middle and only 1.65% belongs to upper Socioeconomic class. Conclusion: From this study it was concluded that BPH is more common in men belonging to moderate socioeconomic classes and less common in extremes.

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INTRODUCTION

Benign prostatic hyperplasia (henceforth BPH) refers to the prostate gland enlargement with poorly characterized epidemiology affecting older men [1]. It has been estimated that approximately 10% of men in their 30s, 20% of men in their 40s, 60% of men in their 60s, 80% of men in their 70s, and 90% of men in their 80s, get affected [2]. Sir Benjamin Bordie has very rightly quoted, " when the hair becomes grey and thin, when there forms a white zone around the cornea, at the same time ordinarily, I dare say invariably, the prostate increases in volume" [3]. Due to significant gaps in knowledge there are lots of opportunities for future research to further enrich the epidemiological field with robust data. Dihydrotestosterone derived from testosterone with the help of 5-α reductase is probably a major stimuli for stromal and glandular proliferation of prostate in men with nodular hyperplasia [3,4]. The most common manifestations of BPH known as lower urinary tract symptoms (LUTS), are hesitancy, straining, weak flow, prolonged voiding, partial or complete urinary retention, increased frequency of micturition, urgency with urge incontinence, nocturia and painful urination [5,6]. Complications, such as urinary retention, renal insufficiency and bladder stone can occur and if left untreated, surgical intervention is required [5,6]. In BPH there is reduced quality of life and increased annual healthcare cost [7]. Different factors are thought to influence the clinical profile of patients suffering from BPH, including the degree of urbanization and ethnicity [8]. It has been found that prostate volume in men varies regionally across the world; larger in western regions as compared to south East Asian regions [9]. Ganepule et al demonstrated in a large sample size of Indian population that the International Prostate Symptom Score (IPSS) is higher at a comparatively lower prostate volume than in western population [10]. Early in the year 2008 it was observed that race and Socioeconomic status (SES) are independently associated with BPH [11]. Subsequent studies found that BPH and prostate cancer is highly prevalent among Africans and Africans in the Diaspora [12]. Another study suggests a strongest relationship between BPH patients and their profession, education, place of residence and health related quality of life [13]. Thus more studies are demanded to understand the risk factor epidemiology of BPH which is indispensable in health service planning and management. The present study was desirable to observe a relationship of BPH patients with their socioeconomic status which may boost up the limited data available regarding this issue.

Methodology

A study was conducted at RRIUM, Srinagar, Kashmir, in the year 2018-19 in which sixty (60) diagnosed cases of BPH selected randomly were interrogated and assessed according to the modified Kappuswamy' s Socioeconomic status (SES) scale [14], and the observations so derived were recorded in the case record form (CRF) of each case individually.

Table 1. Kuppuswamy`s Socioeconomic status (SES) scale (Modified for 2018).

Occupation of the head of the Family		
Sr. No.	**Occupation of the Head**	**Score**
1	Legislators, senior officials & managers	10
2	Professionals	9
3	Technicians and associate professionals	8
4	Clerks	7
5	Skilled workers and shop & market sales workers	6
6	Skilled agricultural & fishery workers	5
7	Craft & related trade workers	4
8	Plant & machine operators and assemblers	3
9	Elementary occupation	2
10	Unemployed	1
Education of the Head of the Family		
Sr. No.	**Education of the head**	**Score**
1	Profession or honors	7
2	Graduate	6
3	Intermediate or diploma	5
4	High school certificate	4
5	Middle school certificate	3
6	Primary school certificate	2
7	Illiterate	1

Total Monthly Income of the Family			
Sr. No.	**Updated monthly family income in rs. (2012)**	**Updated monthly family income in Rs. (2016)**	**Updated monthly family income in Rs. (2018)**	**Score**
1	>30375	> 40430	>126360	12
2	15188-30374	20210-40429	63182-126356	10
3	11362-15187	15160-20209	47266-63178	6
4	7594-11361	10110-15159	31591-47262	4
5	4556-7593	6060-10109	18953-31589	3
6	1521-4555	2021-6059	6327-18984	2
7	<1520	<2020	<6323	1

Kuppuswamy' s Socioeconomic Status (SES)		
Sr. No.	**Score**	**Socioeconomic class**
1	26-29	Upper (i)
2	16-25	Upper-middle (ii)
3	11-15	Lower-middle (iii)
4	5-10	Upper-lower (iv)
5	<5	Lower (v)

Case selection criteria
Diagnosed cases of BPH were randomly selected and included in our study with following criteria;
a) Inclusion criteria
» Men in age group of 40-79 years.
» Patients complaining of LUTS.
b) Exclusion criteria
» Patients < 40 and > 80 years of age.
» Mentally retarded patients.
» Patients with debilitating diseases like chronic heart disease, chronic kidney disease, liver disease and hypertension.

Results

Table 2: Distribution of 60 BPH patients as per SES.

Socioeconomic status	Number of patients
Upper	1
Upper-Middle	16
Lower-Middle	19
Upper-Lower	24
Lower	0

BPH- Benign prostatic hyperplasia; SES- Socioeconomic status.
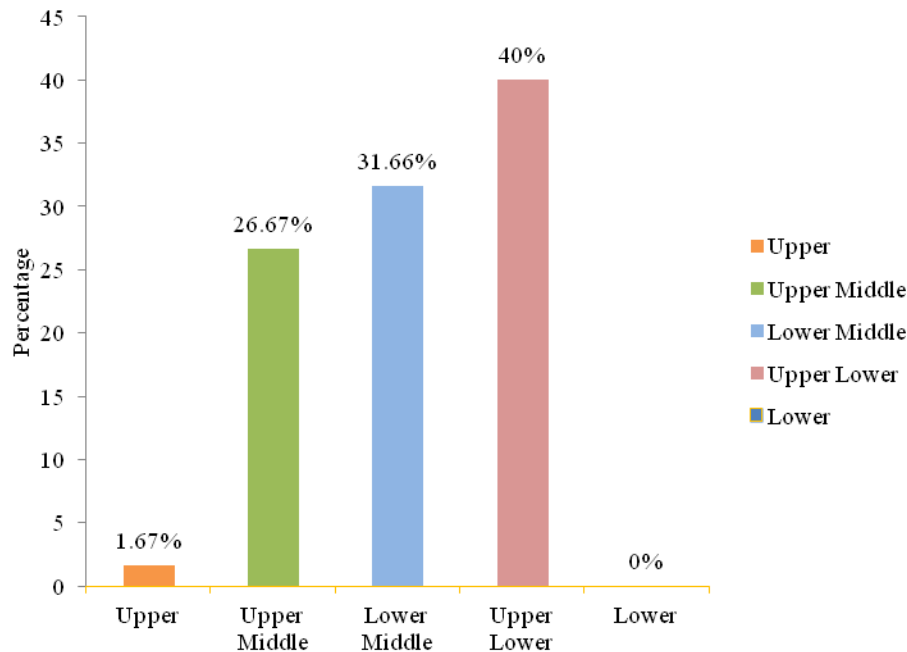
Fig. 1. Percentage of BPH patients' distributed as per SES; BPH- Benign prostatic hyperplasia; SES- Socioeconomic status.

DISCUSSION

BPH is a major cause of LUTS and highly disturbing condition in elderly males. As of 2010 BPH affects about 210 million males throughout the world, which corresponds to about 6 percent of the total population. Current study observes the risk of clinical BPH in relation to SES. A standard SES scale known as Kappuswamy's scale was used to classify the patients in different Socioeconomic groups. The scale is comprised of 5 classes with different scores based on multiple factors. A score of 26-29 correspond to upper class, score in the range of 16-25 corresponds to upper-middle class, 11-15 to lower-middle class, 5-10 upper-lower and score of <5 corresponds to lower class respectively. For statistical analysis, recorded data was compiled and entered in a spread sheet and then exported to data editor of SPSS version 20.0.

From the table-2 it is evident that out of 60 cases majority i.e., 24 (40%) of patients were from upper-lower class of the society, 19 (31.65%) were from lower-middle class, 16 (26.7%) from upper-middle class and only 1 case (1.65%) was belonging to the upper class. No case of lower class was observed in this study. This may be attributed to men with no formal education and belonging to poorest sects are incognizant of ailments or they are not willing to have medical help due to their underprovided knowledge and economy. In this study little percentage of patients belonging to upper class may be due to their creamy health plans and visiting much sophisticated super specialty centers rather than visiting a medium standard public health centre. Thus a vague distribution of BPH cases was seen with respect to SES but still it was evident that a good percentage belongs to middle class which demand elucidation by further studies with much larger sample size at multicentre levels.

CONCLUSION

BPH is a common disorder of older men affecting their day-to-day activities yet has poorly characterized epidemiology. Understanding the risk factor epidemiology of BPH for health service planning is thus indispensable. From the current study it was concluded that BPH is more common in men belonging to upper-lower and middle socioeconomic class and less common in extreme i.e., upper and lower classes. Since the study was conducted with a small sample size in a limited region, elucidation by further studies with much larger sample size at multicentre levels is demanded which might prove beneficial in understanding the epidemiology of BPH.

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Abbreviations
BPH   - Benign Prostatic Hyperplasia
LUTS   - Lower Urinary Tract Symptoms
SES   - Socioeconomic status

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