

**Research Article****STUDY OF IMPACT OF PATIENT EDUCATION ON HEALTH RELATED QUALITY OF LIFE IN BENIGN PROSTATIC HYPERPLASIA (BPH) PATIENTS IN A SOUTH INDIAN TEACHING HOSPITAL**

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**ABSTRACT**

**Aim:** To assess the influence patient education on Lower Urinary Tract Symptoms (LUTS) improvement and health related quality of life in patients with BPH visiting Urology outpatient department of a tertiary care teaching hospital.

**Methods:** Validated KAP questionnaire was administered to assess the knowledge, attitude and practices (KAP) of BPH patients, and Kannada translated and validated ICS-QoL questionnaire was administered to analyze the impact of education on health related quality of life. KAP questionnaire was administered at base line and final follow up on all enrolled patients. ICS-QoL questionnaire was administered at every follow up to study the influence of education. The test group patients were provided with education regarding BPH and its management including life style modifications where as control group patients were continued with conventional therapy and received education at the final follow up.

**Results:** A total of 109 patients (Control=53 and Test= 56) with mild to moderate symptoms of BPH meeting the study criteria were randomized in to control and test groups. A significant ( $P<0.05$ ) improvement in the KAP scores of test group patients was observed compared to the control group. It was also observed a significant ( $P<0.05$ ) improvement in the bothersome symptoms and QoL of test group patients when compared to control group.

**Conclusion:** Our study conclude that the patient counseling has shown an improvement in knowledge about the disease, symptoms, management of the disease, treatment outcomes and QoL of BPH patients.

**KEY WORDS** BPH patients, LUTS, HRQoL, Patient education

**INTRODUCTION**

Benign Prostate Hyperplasia (BPH) is defined as non cancerous enlargement of the prostate gland caused by the growth of new cells. It is characterized by the Lower Urinary Tract Symptoms (LUTS) like urinary hesitancy and intermittency, weak urinary stream, nocturia, increased frequency, urgency and the sensation of incomplete bladder emptying. These symptoms significantly affect the quality of life (QoL) of the patients with BPH.<sup>1</sup> Although BPH is not a life threatening disease, but it affects individual's QoL in different ways. The impairment in QoL of BPH patients is mainly because of sleep disturbance due to nocturia, disruption of social life due to urinary frequency, psychological burden due to urgency, inadequate sex life, and fear of prostate cancer.

Interference of BPH symptoms with patient's daily activities has been identified as an important factor that influences patients desire to seek the treatment.<sup>2</sup> The standard treatment guidelines for the management of BPH range from watchful waiting to pharmacological intervention and finally surgical intervention. Many international studies have shown the importance of self management interventions such as life style modifications and behavioral changes in the management of BPH. If these interventions are successfully implemented through a structured education program, patient outcomes will be improved and reduce the economic burden of LUTS treatment.<sup>3</sup> Studies were extensively conducted to assess the influence of education on HRQOL(Health Related Quality of Life) in Diabetes, Hypertension

and Asthma.<sup>4, 5, 6</sup> However only few studies regarding the educational intervention on HRQOL in BPH patients are available. In Indian context no studies are available. Thus the present study was designed and conducted to assess the influence of pharmacist provided education on HRQOL in patients with BPH.

## MATERIALS AND METHODS

The present study was a prospective randomized educational intervention study conducted at the department of Clinical pharmacy in association with the department of Urology in a South India teaching hospital. BPH patients above 40 years of age with mild to moderate symptoms and agreed to give the written consent to participate in the study, were enrolled and randomized in to control and test groups through a simple randomization technique. A data collection form was designed to collect the demographic details, disease history, symptoms, IPSS score to assess the disease severity, medication history and the disease management strategies. In order to assess the patients knowledge regarding disease, medications usage, diet, and the disease management practices, a 15 item KAP questionnaire was designed in English and Kannada languages and the content was validated by the team of Urologists and Clinical Pharmacists. Reproducibility of the questionnaire was tested on a sample population and the language translation was done by the linguistic expert. In order to assess the HRQOL of the study patients, ICS-QoL questionnaire (International Continence Society Quality of Life questionnaire) was administered after taking permission from the author. This questionnaire was translated in to Kannada and was validated on a sample of patient population for reproducibility. The ICS-QoL questionnaire has three domains such as bothersome symptoms, QoL, and sexual life. ICS-QoL questionnaire contains a

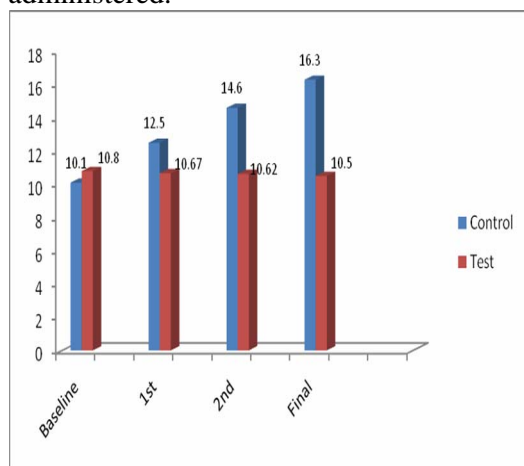
total of 34 questions among them, question numbers 1 to 20, 22, 23, and 28 assess the bothersome symptoms (BSS) of an individual BPH patient, question numbers 21, 29, 30, 31, 32, 33, and 34 assess the QoL of the BPH patients, and question numbers 24, 25, 26, and 27 assess the sexual life of the BPH patients.<sup>7</sup> The questionnaire was administered on all study subjects at every follow-up visit and the scores were analyzed separately in order to assess the three separate domains of the questionnaire. A patient information leaflet (PIL) was designed containing information regarding disease, medications, diet, and life style modifications and translated in to Kannada language with the help of a linguistic expert. A total of three follow-ups were conducted from the baseline visit. KAP questionnaire was administered on all patients at baseline and at the final follow-up in order to assess the impact of patient education on knowledge, attitude and practices. HRQOL questionnaire was administered on all patients from baseline to final follow-up. The test group patients received the education and followed for four months with one month interval between two follow-ups. The control group patients received the education along with PILs at the final follow-up after the final assessment of scores.

Statistical analysis was carried out by using SPSS version 11.0 for windows. Chi-square test was used to find out the significant difference between KAP scores of test and control group patients at baseline and at last follow-up. One-way ANOVA was used to compare the QoL scores of study patients at baseline and various follow-ups. Post hoc analysis by Bonferroni was used to find out the intergroup significance. A p value less than 0.05 was considered as statistically significant.

## RESULTS

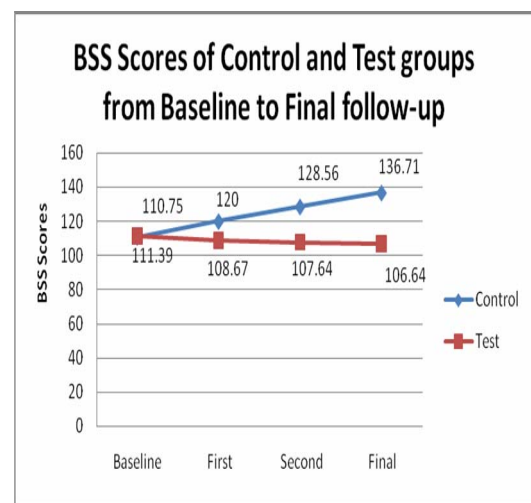
A total of 117 patients were enrolled in to the study, among them eight

(6.83%) patients were lost to follow up (5 patients underwent TURP and 3 patients were irregular in the study follow-ups), and a total of 109 randomized patients (control = 53 and Test = 56) completed all the four follow-ups. The baseline demographic details and treatment details of the study patients are presented in the TABLE-1. At baseline follow-up of the study, it was found that there was no significant difference in the Knowledge, Attitude, and Practice (KAP) scores; bothersome symptom scores (BSS), QoL, and sexual function scores of test and control group study patients. A significant improvement in the KAP scores of test group patients was observed at final follow-up compared to baseline KAP scores. No statistical significant improvement was observed for some of the KAP questions at final follow-up when compared to baseline KAP of the test group patients. The data is given in the TABLE .2. To assess the severity of symptoms of prostate enlargement, International Prostate Symptom Score (IPSS) is used. The IPSS scores of both control group and test group patients from baseline to final follow up were calculated and presented in FIG. 1. To determine the impact of patient education on HRQOL of BPH patients, the validated Kannada version of ICS-QoL questionnaire was administered.



**FIG. 1. International Prostate Symptom Scores of the patients BPH**

The components such as BSS, QoL, and sexual function of the patients were assessed through this questionnaire. There was a significant ( $P < 0.05$ ) increase in BSS scores of control patients from baseline to final follow-up. It indicates the worsening of the disease condition in the control group patients. The Post hoc analysis reveals that a significant increase in BSS scores from baseline to first ( $P < 0.01$ ), first to second ( $P < 0.01$ ), second to final follow-ups ( $p < 0.01$ ). The one-way ANOVA has shown a significant ( $P = 0.002$ ) decrease in the BSS scores of test group patients from baseline to final follow-up. This suggests an improvement in the disease condition of the test group patients (FIG: 2)



**FIG.2. Bothersome symptom scores of both control and test group patients**

The post hoc analysis revealed a significant decrease in BSS scores of test group patients from baseline to second ( $P = 0.024$ ), and baseline to final follow-ups ( $P = 0.002$ ) but no significant decrease in BSS scores observed from baseline to first ( $P = 0.219$ ), and first to second ( $p = 1.00$ ). There was a significant ( $P < 0.05$ ) decrease in QoL scores from baseline to final follow-up, indicating an improvement in QoL of test group patients from first follow-up to final follow-up (Fig: 2).

**Table 1: Demographic characteristics of the study subjects**

Parameters	No. of patients (n=109) n (%)
<b>Age (In Years)</b>	
56-60	17 (15.59%)
61-65	53 (48.62%)
66-70	34 (31.19%)
71-75	05 (04.58%)
<b>Education Level</b>	
Illiterate	45(41.28%)
Primary education	40(36.69%)
Secondary education	08(07.33%)
Pre university	12(11.00%)
Degree	04(03.66%)
<b>Employment Status</b>	
Employed	48(44.0%)
Retired from the service	61(56.0%)
<b>Social habit</b>	
Smoker + Alcoholic	37 (41.1%)
Non smoker + Non alcoholic	23 (21.1%)
Past smoker + past alcoholic	37 (33.94%)
<b>Marital status</b>	
Married	108 (99.08%)
Unmarried	01(0.92%)
<b>Class of drugs received</b>	
Alpha blockers	57(52.29%)
5-ARIs	21(19.26%)
Both alpha blockers and 5-ARIs	31(28.44%)

**Table 2: Assessment of Knowledge, Attitude and Practices of Patients with BPH**

S.No	Questions	Control		Test	
		BL	FF	BL	FF
1	What is Benign Prostatic Hyperplasia (BPH)?	12	11	13	48
2	In which age group of patients BPH is most commonly seen?	14	15	16	51
3	BPH most commonly causes?	31	32	36	54
4	Which of the following are the most common urinary symptoms of BPH?	26	26	28	47
5	Which of the following treatments initially used to treat BPH?	11	11	14	45
6	Do you think that there is a need to consult the doctor for your problem?	44	46	46	53
7	Are you embarrassed to talk to your doctor about your disease?	39	38	41	55

8	Which of the following therapies may reduce your bothers?	23	23	24	52
9	Do you take the prescribed medicines regularly?	31	30	32	54
10	Do you know how does your drug(s) act?	01	01	02	48
11	Do you think that your drugs have some side effects?	27	27	29	51
12	Do you alter the doses / frequency of medications based on your symptoms without consulting your doctor?	49	49	51	56
13	Do you think that there is a need to maintain diet control for your disease?	16	17	18	56
14	Do you think that there is a need to avoid taking fluids during bedtime?	27	27	29	56
15	Do you think that alcohol consumption can aggravate your symptoms?	16	17	15	46
			0.38		< 0.0001

P value < 0.05 is significant and <0.001 is highly significant (Paired t test)

BL = Base Line, FF= Final Follow up

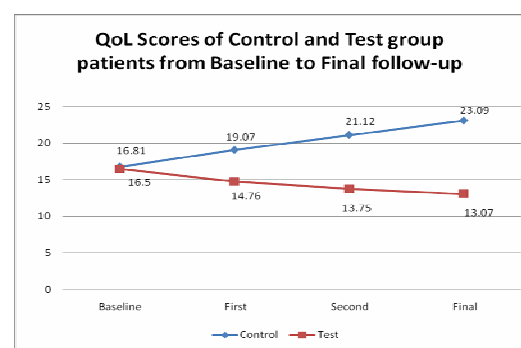
Post hoc analysis revealed a significant ( $P < 0.05$ ) decrease in QoL scores from baseline to first, second, and final follow-up visits. But no significant decrease in the QoL scores of test group patients from first to second ( $P = 0.096$ ), and second to final follow-up visits ( $P = 0.641$ ). There was an increase in the scores of sexual function in control group and test group patients, however it was statistically non significant ( $p = 0.661$  and  $p = 0.990$ ).

## DISCUSSIONS AND CONCLUSION

QoL is identified as one of the important indicators in assessing the treatment goals in many chronic disorders.<sup>4</sup> Many studies have appreciated the role of the pharmacists' provided education in improving the HRQoL in patients with chronic disorders like Diabetes, Asthma, and Hypertension.<sup>4,5,6</sup> BPH is a common chronic disorder in elderly men causing bothersome Lower Urinary Tract Symptoms. Studies have shown that the presenting symptoms affect the general well being and the overall quality of life in patients with BPH.<sup>8, 9</sup>

Only Few studies were available regarding the influence of patient education on quality of life in BPH patients. In India, no such studies were reported.

**Fig.3.: Overall Quality of Life scores of both control and test group patients**



Present study assessed the impact of patient education on KAP, IPSS and HRQoL in BPH patients. The low KAP scores at base line suggest that the study patients possess poor awareness regarding the disease and its management. This may be due to lack of awareness regarding disease or may be due to lack of accessibility to health care professionals and or may be due to their lack of interest

to know about their disease. In a study conducted in US, regarding the public, patient and professionals attitudes towards the diagnosis and treatment of enlarged prostate, 29% of the patient respondents could not consult their clinicians due to the fact that, they were not knowing that the symptoms were due to enlarged prostate. Early diagnosis prevents the bothersome symptoms and minimizes the risk of disease progression and potential complications.<sup>12</sup> This necessitates the importance of providing patient education to the patients suffering from enlarged prostate. The post educational KAP scores of the test group patients were significantly improved compared to control group patients KAP scores. This confirms the positive impact of patient education on KAP of BPH patients. The major determinants of QoL in BPH patients include LUTS, sleep disturbances, anxiety and worry about the disease, impaired daily activities, and impaired satisfaction with sexual relationship. Treating LUTS with appropriate medications will improve the symptomatology and ultimately improves the HRQoL. LUTS management can be effectively done with the help of drugs and with appropriate self management strategies. The self management strategies include changes in the diet like avoiding spicy foods, coffee and evening fluids, and life style modifications and behavioral modifications such as practicing relaxation techniques. Such changes control the bothersome symptoms. Suitable structured education programs will help the patients to learn the self management strategies.<sup>11</sup> At base line, no significant difference in bothersome symptom scores was observed in both control and test group patients. But at the final follow-up, a considerable decrease in bothersome symptom scores of test group patients was observed. The IPSS scores at baseline for both groups were similar but at the final follow up, a non significant decrease in IPSS scores was observed compared to the control group

patients. Continuous increase in IPSS scores in control group patients suggests the poor disease management. This change in the scores suggests the positive influence of education in the management of the disease which has reduced bothersome symptom scores and overall IPSS in test group patients. The major improvement of the bothersome symptoms was observed in the test group patients relating to the improvement in nocturia, which might have helped the test group patients to have a better sleep, resulting in improved BSS scores. The ICS-QoL questionnaire comprised of social and emotional symptom questions, which are also considered as QoL determinants.<sup>7</sup> Studies have shown that the above mentioned determinants are the important parameters to assess the QoL of an individual patient.<sup>12</sup> In our study though there was no significant difference observed in the baseline QoL scores in both the control and test group patients however a significant improvement in overall QoL was observed in test group patients. But no significant improvement was found on scores relating to sexual life. This can be attributed to the fact that, majority patients were above sixty years of age. In Indian conditions, at this age very few people will have the sexual pleasure. This may be due to the reasons like co morbidities, lack of privacy and family burdens, death of the wife etc., We have also observed that, age and employment has shown some relationship with QoL scores. QoL was found to be decreased in employed patients compared to retired patients. Employed patients may have social embarrassment with the symptoms, which disturbs their emotions. Our study has shown the positive impact of education in the over all QoL scores of test group patients compared to control group patients. The present study has shown the positive influence of pharmacist provided patient education on KAP, IPSS and overall quality of life in patients with BPH.

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