

A Study on Co-morbidities, Precipitating and Associated Factors of Nocturia among Adults-Pilot Study

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ABSTRACT

Introduction: Night urination is an extremely nagging condition affecting men and women of all ages. Multiple medical conditions are associated with nocturia and negatively impact the quality of life. However people often hesitate to seek the healthcare and consider as an untreatable condition and part of aging process. Understanding the underline illness and its associated factors are vital aspects in the management of Nocturia.

Objectives: The aim of this study was to assess the Co-morbidity, Precipitating and associated factors of Nocturia among adults.

Materials and Method: An exploratory descriptive design was carried out among 54 adult clients of 35-65 years of age. The data was collected using self-assessment tool of Co-morbidity, Precipitating and associated factors of Nocturia and interview technique was adopted. The data was analysed using descriptive and inferential statistics.

Results: The finding of the study showed that the Proportion of Nocturia among adult clients was 54%. More than half 58.6% of the subjects were males and the mean age 55.4±8.8. The highest respondents were with primary education. The Majority of the respondents(96.6%) were married. The severity of Nocturia assessment shows 48.3% had moderate form of nocturia. The Co-morbidity assessment reveals that the 35% of subjects equally had increased blood pressure and constipation and 21% of subjects equally had Diabetes Mellitus and incontinence of urine. Among 12 females 25% of subjects had uterus related diseases and among 17 males, 35% of subjects had disease related to prostate gland. The results related to Precipitating factors of Nocturia shows that 38 % of subjects were consuming coffee, 28% were smokers, and 69% were taking Afternoon Naps, 97 % were consuming more water / fluids before bedtime, 93% were getting anxious easily, 90% were consuming spicy foods, 87% were urinating before going bed. The Associated factors of Nocturia result shows 100% of the subjects had insomnia, 55% had frightening or unpleasant dream during sleep, and 41% were reported that they snore. The study found that there was significant association between the Co-morbidity of Nocturia and the selected demographic variables such as age ($p \leq 0.043$), Marital status($p \leq 0.001$), number of children ($p \leq 0.013$), occupation ($p \leq 0.001$), Diet ($p \leq 0.001$), BMI ($p \leq 0.001$), Type of attainment of menopause ($p \leq 0.003$) and Type of delivery($p \leq 0.003$).

Conclusion: The study found that numerous factors contribute to the night urination.

Key-words: Co-morbidity; precipitating factors; associated factors; Nocturia

INTRODUCTION

Nocturia is an extremely prevalent, taxing and serious medical condition affecting men and women of

all ages, which can negatively impact quality of life and increase morbidity & mortality. The contributing factors are numerous and one or many of these factors may be present in an individual¹. Though many people awaken during the night to urinate, it is often unreported and largely misunderstood urological disorder. However this condition has seldom received attention in the medical literature. Multiple factors may contribute nocturia, it may range from lifestyle choices to medical conditions

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in both gender; these include behavioural patterns, intake of caffeine, chocolates, spicy foods, acidic foods, alcohol, or excessive fluids before bedtime, and pathological conditions, such as stroke, cardiovascular disease, peripheral oedema, prostatic disease, diabetes mellitus or diabetes insipidus, obstruction of the lower urinary tract, anxiety, or sleep disorders and diuretic medications². Moreover contributing factors of nocturia are seldom studied in south India. Raising the awareness of nocturia and its associated factors among the people are required; in order to control and manage the nocturia.

OBJECTIVES OF THE STUDY

- To determine the proportion of Nocturia among adults
- To assess the severity of Nocturia
- To describe the co-morbidities and precipitating factors of Nocturia
- To find the association between co-morbidity Nocturia and selected demographic variables

Assumption

The study assumes that the adults with nocturia may have co morbidities

The adults with nocturia will honestly respond to the question regarding co morbidities and precipitating factors of nocturia

Delimitation

The study is delimited to the adults with age group of 35 to 65

The adults those who are attending the urology and gynaecology OPD of selected hospitals only

Hypothesis

H₁: There will be significant association between the Co-morbidity of Nocturia and selected Demographic Variables.

Research Methodology

An exploratory descriptive design was used in this study to assess the Co-morbidity, Precipitating and Associated factors of Nocturia among adults. The

institutional ethical clearance and permission to conduct the study was obtained from the concerned authority. The study sample size consists of 54 adults of 35-65 years of age were recruited using purposive sampling from the departments of Urology and Gynaecology of selected Hospitals at Mangaluru. The subjects were screened for nocturia and out of 54 subjects 29 had nocturia. The subjects who had night urination more than two times and difficulty to get enough sleep only were included for further interview. Then the identified proportion of subjects with nocturia were interviewed for baseline Proforma, self-assessment tool of Co-morbidity, Precipitating & associated factors of Nocturia. The data was analyzed using descriptive and inferential statistics.

RESULTS

Section 1: The proportion of Nocturia among adults

Out of 54 screened subjects 29 subjects presented the history of having nocturia. Therefore the proportion of Nocturia among adults was 54% in this study.

Section II: Self reported clinical symptoms of Nocturia

All subjects who has screened for nocturia had night urination more than two times and difficulty to get enough sleep. Out of that 97 % had moderate and a great deal botheration of sleep.

Section III: Baseline Characteristics of adults with Nocturia.

More than half of the subjects (55%) were in the age group of 56-65 years. The mean age was 55.5±8.95. The subjects 10 (34.5%) were illiterate and only 6 (20.7%) subjects had high school education. The majority 28 (96.6%) of them were married. More than half of the subjects 17 (58.6%) were male. About 16(55.2%) subjects had 4-6 children, More than half of the subjects 17 (58.6%) were unskilled workers, and none of them were professional. The least 5(17.2%) subjects have income between rupees more than 9000. The majority (89.7%) were consuming mixed diet. The majority subjects 21(72.4%) have toilet outside the house. All of the 29(100%) had nocturia. Among 12 female subjects 10(83%) attained menopause. The majority subjects 10(83%) had normal delivery.

Section IV: Severity of Nocturia

Table 1: Frequency and Percentage, of Severity of Nocturia among adults n=29

Frequency of voids	Severity	f	%
1-2	Mild Nocturia	3	10.3
3-4	Moderate Nocturia	14	48.3
5&>5	Severe Nocturia	12	41.4

The subjects 12 (41.1%) had severe, 14(48.3%) had moderate and 3(10.3) had mild form of nocturia

Section V: Co-morbidities of adults with Nocturia

Table 2: Frequency and percentage of Co-morbidities of Nocturia among adults n=29

Sl.No	Items	f	%
1	Heart diseases	4	14
2	Hypertension	10	35
3	Recurrent urinary tract infection	2	7
4	Any kidney disease	1	3
5	Diabetes Mellitus	6	21
6	Constipation	10	35
7	Are you on any medications	9	31
		Male n=17	
8	Any disease related to prostate gland	6	35
		Female n=12	
9	Do you have any uterus related diseases	3	25

The highest observed co morbidities were the subjects 35% of them equally had hypertension and constipation and the least observed symptom was kidney disease (3%)

Section VI: Precipitating factors of Nocturia among adults

Table 3: Frequency, and Percentage of precipitating factors of Nocturia n=29

Sl.No	Items	f	%
1	Intake of coffee	11	38
2	Alcoholism	2	7
3	Smoking	8	28
4	Medication that excrete more urine	4	14
5	Nap	20	69
6	Anxious easily	27	93
7	Consume spicy foods	26	90
8	Urinate before you go to bed	29	100

The highest presented Precipitating factors were Urinate before go to bed(100%) , anxious easily (93%), Consuming spicy foods (90%), Nap (69%) the least presented Precipitating factor was Alcoholism (7%).

Section VII: Associated factors of Nocturia among adults

Table 4: Frequency and Percentage of Associated factors of Nocturia n=29

Sl.No	Items	f	%
1	Do you have insomnia?	29	100
2	Do you have periodic leg movement at night?	8	28
3	Do you walk during sleep?	2	7
4	Do you have a frightening or unpleasant dream during sleep	16	55
5	Do you repeatedly stop and start breathing during sleep	3	10
6	Is it reported to you that you snore?	12	41

The subjects 100% of them had insomnia, 28% had periodic leg movement, 7% had a habit of walk during sleep, 55 % had a frightening or unpleasant dream during sleep, 10 % had repeatedly stop and start breathing during sleep and 41 % had snoring during sleep.

Section VIII: Table 5: Association between the Co-morbidity of Nocturia and selected Demographic Variables.

H₀₁:-There is no significant association between the Co-morbidity of Nocturia and selected Demographic Variables. n=29

Sl.No	Variable	Co-morbidity		c ² (Yates correction)	P
		Median<2	Median>2		
1.	Age				
	35-45	1	3	6.276	.043
	46-55	5	5		
	56-65	5	10		
2.	Education				
	Illiterate	1	9	2.552	.279
	Primary	7	6		
	High school	3	3		
3.	Marital status				
	Single	0	1	25.138	.001
	Married	11	17		
4.	Number of children				
	Nil	1	2	8.759	.013
	1-3	4	6		
	4-6	6	10		
5	Gender				
	Male	6	11	.862	.353
	Female	5	7		
6.	Occupation				
	Unemployed	3	4	19.966	.001
	Unskilled	5	12		
	Skilled	2	2		
	Professional	1	0		
7.	Diet				
	Vegiterian	1	1	41.448	.001
	Ovo –Vegiterian	0	1		
	Mixed	10	16		
8.	Income				
	≤3000	1	3	5.345	.148
	3001-6000	5	7		
	6001-9000	4	4		
	>9000	1	4		
9	BMI				
	Under Weight	0	1	25.586	.001
	Normal	3	1		
	Over weight	0	5		
	Pre- obesity	8	11		
				n=12	
10	Type of attainment of menopause			11.655	.003
	Yes	1	1		
	No	4	6		
11	Type of delivery				
	Vaginal delivery	4	6	11.655	.003
	Caesarean section	1	1		

Foot note: c²₍₁₎ =3.84, c²₍₂₎ =5.99, c²₍₃₎ =7,81, c²₍₄₎ =9.48

*significant at 0.05 level

The Data in Table 5 –reveals that the chi-square value(Yates correction) computed between Co-morbidity and selected variables, namely, Age ($c^2_{(2)} = 6.276$), education ($c^2_{(2)} = 2.552$), Marital status ($c^2_{(1)} = 25.138$), and Number of children ($c^2_{(2)} = 8.759$), Gender ($c^2_{(1)} = .862$), Occupation ($c^2_{(4)} = 19.966$), Diet ($c^2_{(2)} = 41.448$), Income($c^2_{(3)} = 5.345$), BMI($c^2_{(3)} = 25.586$), Type of attainment of menopause ($c^2_{(1)} = 11.655$), Type of delivery ($c^2_{(1)} = 11.655$) had significant association at 0.05 level except education, gender and income. Therefore, the null hypothesis was rejected (H_0) and research hypothesis was accepted.

DISCUSSION

The current study 54 subjects were screened for nocturia and out of that 29 (54%) had reported to be having nocturia. The result shows that among the subjects with nocturia 35 % of subjects were with hypertension, 21% of subjects had Diabetes Mellitus, 35% of subjects had disease related to prostate gland, 25% of subjects had uterus related diseases, 100% of the subjects had insomnia, study 93 % of subjects get anxious easily and 41% subjects were reported snoring.

Co-morbidities of Nocturia related to hypertension and Diabetes Mellitus

The study findings indicate among Asian and European continent also has revealed nocturia as a major complaints among Diabetes Mellitus and hypertension. The study findings revealed the prevalence of nocturia among hypertensive clients were ranged from 25.5 to 54.9%^{3,4,5,6,7}; Diabetes Mellitus was between 18.3% and 60.7%^{3,4,5,6,7}.

The Co-morbidities of Nocturia related to diseases of prostate gland and uterus

The current study findings are congruent with Asian and European continent studies also has shown the prevalence of nocturia among clients with BPH were ranged from 42.8% to 85.9%^{8,9,10,11}. The present study reveals that 35% of subjects had disease related to prostate gland. The present study result shows that 25% of subjects had uterus related diseases. The findings were supported by the study conducted to determine the Bladder Symptoms in the Early Menopausal transition shows that the most common bladder symptoms were nocturia (72%).¹² Another study conducted in California

revealed, the Nocturia occurred more among women with hysterectomy was 53%.¹³

The Co-morbidities of Nocturia related to insomnia, snoring and anxiety

In present study associated factors shows 100% of the subjects had insomnia and these findings were consisted with the study conducted to determine the effect of nocturia on sleep quality reveals that there was a significant correlation between nocturia and quality of sleep¹⁴. In this study 93% of subjects get anxious easily. The findings supported by the systematic review conducted reveals that nocturia and anxiety is strongly associated.¹⁵ In present study 41% subjects were reported snoring. The findings were supported by the study conducted to evaluate the factors associated with Nocturia shows that 35.1 % had reported snoring¹⁶.

CONCLUSION

In this study the nocturia has been significantly associated with various factors, suggesting that multiple approaches are necessary in the treatment of patients with nocturia. The choice of therapy should be adapted based on the underlying factors of nocturia. Therefore the further detailed studies are required to identify the co morbidities in detail, thus can help the healthcare professionals to provide awareness and appropriate health care to manage such problems.

Limitation of the study: The current study was limited to a small sample size which limits the generalization of the study findings.

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Conflict of Interest:-Nil

Ethical Clearance - Ethical clearance was obtained from the institutional ethical committee

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