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Research Article

AN ASSESSMENT OF QUALITY OF LIFE IN *SWASAKASAM* (BRONCHIAL ASTHMA) PATIENTS REPORTING AT AYOTHIDOSS PANDITHAR HOSPITAL – A CROSS SECTIONAL STUDY

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ABSTRACT

Asthma is a chronic inflammatory disease of the small airways that affects all age groups. Asthma symptoms lead to impairment in the physical, emotional and social aspects of patient's life. Bronchial asthma can be correlated to *Swasakasam* as per siddha text book *Yugi vaithiya chinthamani* 800. In *Swasakasam* patients, respiratory symptoms are important determinants of reduced health related quality of life. Evaluation of Health Related Quality of Life (HRQoL) is a primary outcome measure in patient with chronic disease. The objective of the study is to assess the HRQoL in *Swasakasam* patients and to evaluate the risk factors associated with it. It was a hospital based observational study of which 100 asthma patients were evaluated to quality of life who were reporting at OPD of Ayothidoss Pandithar Hospital, National Institute of Siddha (NIS) through Asthma Quality of Life Questionnaire (AQLQ). In this study, asthma affects females more than males (63% and 32%) and with 2% of male children. For the total patient population, there was a maximum limitation in physical activity domain (2.22±0.41) of HRQoL compared to other 3 domains. In case of sub score of all domains the mean of emotional function domain is lesser in female patients than male. Bronchial asthma significantly affects QOL. To reduce the asthma severity yoga, *Pranayamam* may be used adjunctively with standard medication in bronchial asthma patients and awareness should be given to improve their quality of life and to reduce the number of asthma attacks per week.

KEYWORDS: Bronchial asthma, *Swasakasam*, Asthma quality of life, AQLQ.

INTRODUCTION

Bronchial asthma is an inflammatory disease of the small airways, characterised by episodic, reversible bronchial obstruction due to hyper responsiveness of tracheobronchial tree to a multiplicity of intrinsic and extrinsic stimuli manifested clinically by paroxysms of polyphonic wheeze, dyspnoea and cough which may be relieved spontaneously or as a result of therapy. There are 2 types of bronchial asthma - extrinsic asthma, intrinsic asthma[2]. The disease Bronchial asthma can be correlated to *Swasakasam* as per *Yugivaithiya chinthamani* 800[4], of which the symptoms include rhinitis, sneezing, chest discomfort, tightness of chest, shortness of breath, dyspnoea, abdominal distention, sweating. The risk factors of *Swasakasam* as per literature are excessive intake of drinks, exposure to smoke and fumes, due to excessive hunger, physical inactiveness, excessive intake of non-vegetarian foods, consumption of improperly cooked foods, due to excessive stress, not being generous, excessive sexual indulgence[1]. As per American Lung Association asthma risk factors are having family history, viral respiratory infections, allergies, occupational exposure, smoking, air pollution, obesity. The prevalence of asthma increased steadily over the later part of the last century first in the developed and then in the developing countries. Current states that asthma affects 300 million people worldwide, with a predicted additional 100 million people affected by 2025[3]. To date, outdoor allergens, microbial exposure, diet, vitamins, breastfeeding, tobacco smoke, air pollution and obesity but no clear consensus has emerged. Health related quality of life is considered to be an important variable to be managed in airway obstruction diseases[4]. As a result of physical and psychosocial complications, asthma can reduce HRQoL. Evaluation of HRQoL is a primary outcome measure in patients with chronic diseases. Asthmatic symptoms lead to the impairment in physical, emotional and social aspects of patient's life[5]. The assessment of Health related quality of life is thus rendered even more relevant in patients having chronic asthma which can be treated but not cured as the achievement of the best possible quality

of life becomes the best paramount objective in the management of the *Swasakasam* patients. This study was conducted with the objective to assess the effect of bronchial asthma in reducing the quality of life of asthma patients.

MATERIAL AND METHODS

It was a hospital based cross sectional study in which 100 *Swasakasam* (Bronchial Asthma) patients aged between 11 and 60 years reporting at OPD of Ayothidoss Pandidhar Hospital, National Institute of Siddha were selected based on having the clinical symptoms of *Swasakasam*, inclusion and exclusion criteria. The study was approved by IEC of National Institute of Siddha and the IEC number is IEC number is NIS/IEC/2019/M-6,22/2/19. Also registered in CTRI and the number is CTRI/2019/05/019035. The study conducted from May 2019 to July 2019 (3 months). Patients with some other co-morbidities such as Diabetes mellitus, hypertension, hypo and hyper thyroidism, cardiac disease, renal diseases and other pulmonary infections were excluded from the study.

Methodology

A pre-designed self administrated questionnaire is used to collect the socio-demographic characteristic (which includes age, address and type of residence, marital status, occupation, socio-economic status, locality, personal habits, dietary style). The duration of the disease, family history, presenting symptoms, past history, treatment history, sleeping habits were also collected from the patients. The vital signs like heart rate, pulse rate, respiratory rate, blood pressure and *Naadi* were recorded. Then their height and weight were measured, from which the BMI was calculated. Patients who were performing yoga and *Pranayamam* in their daily life were asked about and then grouped.

Asthma Quality of Life Questionnaire (AQLQ)

Then they were assessed for Quality of Life using Asthma Quality of Life Questionnaire (AQLQ), which was filled by the investigator by asking the respective questions from the patients. The questionnaire consists of 32 item instrument which is a disease specific one[5]. It includes 4 domains: Symptoms, emotions, exposure to environmental stimuli and activity limitations. Patient's impairment that they have experienced in past 2 weeks, were rated and their response for each item on 7 point scale. Initially the patients were asked about the five most important activities in which they were limited by their asthma. When five activities have been identified subjects were asked about the extent to which they have been limited in each of the activities. The remaining 27 questions are same for all the subjects. The scoring was done by dividing the 32 items of AQLQ in to 4 domains. The items 1-5, 11, 19, 25, 28, 31, 32 were included under the domain activity limitation. For calculating the symptoms domain items 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 29 and 30 were included. The emotional function domain was calculated using items 7, 13, 15, 21 and 27. For Environmental stimuli domain items 9, 17, 23 and 26 were included. The individual items were equally weighed. The mean AQLQ score was obtained by adding all 32 responses and dividing it by 32. The scores for 4 domains were analysed by adding the response of each of items in the domain and dividing by number of items in particular domain. Thus, the overall scores and domain scores range from 1 to 7 with higher scores indicating better quality of life. The score of 1 was considered to have severe disability while patients with score 7 was considered to have no difficulties due to asthma. The middle in the range of score 4 indicated the moderate degree of disabilities. So when the score falls below 7 the degree of disability and thus the quality of life in asthma patients was elucidated.

Statistical analysis

The statistical software SPSS was used for the analysis of the data and Microsoft word and Excel are used to enter data and to generate tables. The quality of life parameters were described by mean and standard deviation for age groups, gender.

Results

In this study, majority of 63% were females and most of them were middle aged with 46% (Figure 1,2). Among 100 patients, 76 were married. According to socio economic status, most of them were from middle class family with 88% and regarding to the locality most of the 63% were from rural areas (Figure3,4). As female were majority in this study, most of them were home maker with 39%. The mode of travel used by most of them was bus (50%). The patients were asked about their type of residence. About 54% were living in concrete house (Figure 5). Most of the 81% of them had no pets at home. Many were non-vegetarians with 88% (Figure 6). The study subjects were enquired about their personal habits of which non smokers were 96%, non alcoholic were 90%.

BMI was calculated using their weight and height of which most of the 48% were under normal BMI, followed by 33% of overweight obese category (Figure 7). Most of the patients had *Naadi* of *Pithakabam* with 25%, followed by *Pithavatham* with 21%. The duration of disease was asked about in which most of the 74% of them were between 1-10 years of duration with the disease. Most of the 66% had family history of *Swasakasam* (Figure 8). In this

study, only 10% had past history of lung infections in their childhood. In case of treatment history, most of the 85% cases had taken allopathy medicines, of which 58% of them had taken both inhaler and internal medicines. Majority of them were taking Siddha medicines with 81% of which most of the 82% cases had reduced symptoms after taking Siddha medicines (Figure 9).

According to sleeping habits, most of the 69% cases had good sleeping habits without any disturbances. In their day to day life, only 27% were practicing yoga and 33% were practicing *Pranayamam* (Figure 10). In this study, out of 100 cases, 19% were new cases and 81% were old cases.

AQLQ Score

For the total patient population, the mean of total AQLQ score was 3.31±0.57 and mean of subscores was 5.06±0.96 for symptom domain, 4.03±1.30 for emotional function domain, 2.22±0.41 for physical activity limitation domain, 2.42±1.21 for environmental stimuli domain. For the total patient population, there was a maximum limitation in physical activity domain (2.22±0.41) of HRQOL compared to other 3 domains (Table 1).

Table 1: The mean and S.D of 4 domains and the mean AQLQ score

	N	Minimum	Maximum	Mean	Std. Deviation
Symptoms	100	1.83	6.75	5.0667	.96676
Emotional function	100	1.60	6.80	4.0360	1.30466
Environmental stimuli	100	1.00	6.25	2.4237	1.8725
Physical Activity limitation	100	1	3	2.22	.417
overall	100	1.68	4.66	3.3127	.57848

Among the activity domain most of the asthma patients (82%) avoid a situation or environment because of cigarette smoking and 34% were limited by asthma while walking upstairs/uphills. In symptom domain many of them had experienced shortness of breath (29%) most of the time in the past two weeks. The emotional function limitation is mostly of feeling concerned about having asthma. In environmental stimuli most of the 74% of the asthma patients had experienced symptoms as a result of being exposed to dust.

The mean of total AQLQ score was almost equal in both genders. In case of subscore of all domains the mean of emotional function domain is lesser in female patient than male. The mean of overall AQLQ score was almost equal in all age groups of <30 years, between 30-50 years and > 50 years. In case of mean of subscore of symptom domain, it was greater in patients < 30 years, while in case of mean of subscore of emotional function domain, it was lesser in patients between 30 and 50 years (Table 2). The mean of subscore of physical activity limitation domain and environmental stimuli domain was almost equal in all three age groups.

Table 2: The mean of subscore of 4 domains in gender and different age group:

	Groups	N	Symptoms Domain	Emotional Function Domain	Environmental Stimuli Domain	Activity Domain	Over All Score
Gender	MALE	35	5.1905	4.2571	2.4725	2.21	3.3847
	FEMALE	63	5.0066	**3.9111**	2.3826	2.23	3.2760
Age Group	<30	29	5.1149	4.2138	2.5695	2.09	3.3297
	30-50	46	5.0833	**3.9217**	2.5924	2.27	3.3097
	>50	25	**4.9800**	4.0400	2.39	2.26	3.2985

DISCUSSION

Bronchial asthma is one of the major causes of morbidity and has great impact on reduction in the quality of life in patients. In present study, there was a maximum limitation in activity domain compared to other 3 domains. In female patients as compared to male there was more limitation for emotional function domain. In India, the women have to play equal role at home and also in the society. The stress faced by them may aggravate the asthma condition which leads to the impairment in their quality of life. The previous studies[8] have found that women have poor outcomes for asthma than men.

The previous study[9] has shown that there was maximum limitation with symptom domain where as in this study there was activity limitation followed by environmental stimuli limitation. A research conducted by Ferreira *et al*. in Portugal has noticed that the highest quality of life was noticed in younger patients. In this study, the subscore of symptoms domain compared to other domains was

greater in patients <30 years which confirms with the previous studies.

The studies conducted before[9] has shown the same, that the HRQOL was less impaired in asthma patients<30 years. Whereas the subscore of emotional function domain was lesser in patients between 30-50 years (middle age). This may be due to the stress faced by them due to family responsibilities and financial crises.

In this study, in the symptom domain, most of them were limited by shortness of breath and in activity domain, most of the asthma patients (82%) avoid a situation or environment because of cigarette smoking due to breathlessness and among activity limitation many were limited by asthma while walking upstairs/uphills. The previous studies had shown the "breathlessness" subscale tended to reflect greater benefit from the yoga intervention[10]. In this study only few were practicing yoga (27%) and *Pranayama* (33%) in their day to day life.

The limitation of this study is that quality of life assessment was done only in a single visit of the asthma patients not in subsequent visits. The assessment of QOL in every visit would be of better value in health research.

CONCLUSION

Bronchial asthma significantly affects QOL. In this study the quality of life in asthma patients was mainly affected by activity limitations and exposure to environmental stimuli. To reduce the asthma severity yoga, *Pranayamam* may be used adjunctively with standard medication in bronchial asthma patients and awareness should be given to improve their quality of life, especially 'symptoms', 'environmental' and 'emotions' domains as well as to reduce the number of asthma attacks per week. The results of this study can be used to improve the quality of life in asthma patients in NIS OPD and to create awareness among them to practice yoga and *Pranayama* regularly.

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Figure 1: Distribution of *Swasakasam* according to gender

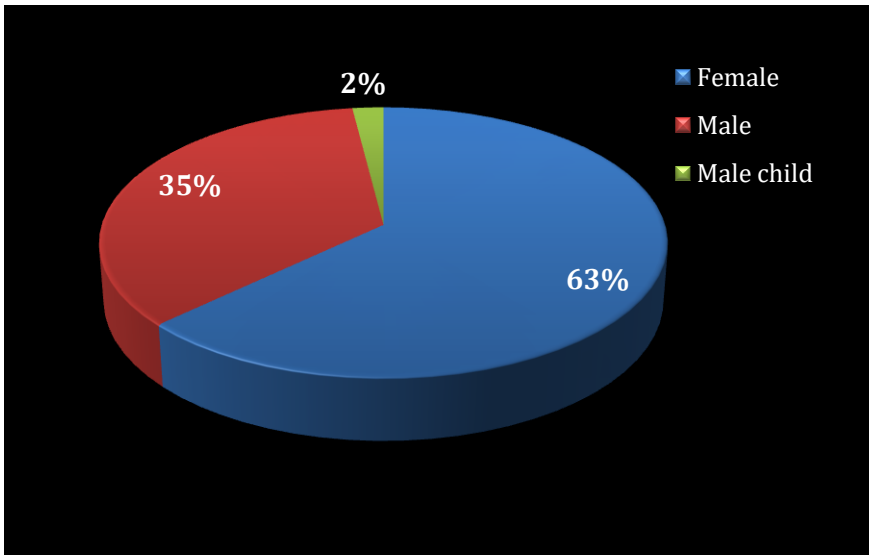

figure 2: Distribution of *Swasakasam* according to age distribution

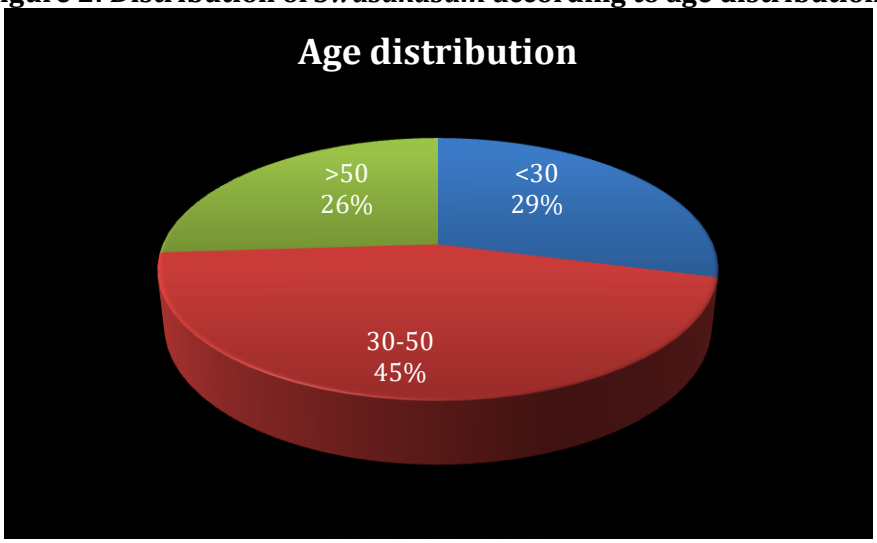

Figure 3: **Distribution of *Swasakasam* according to socio-economic status:**

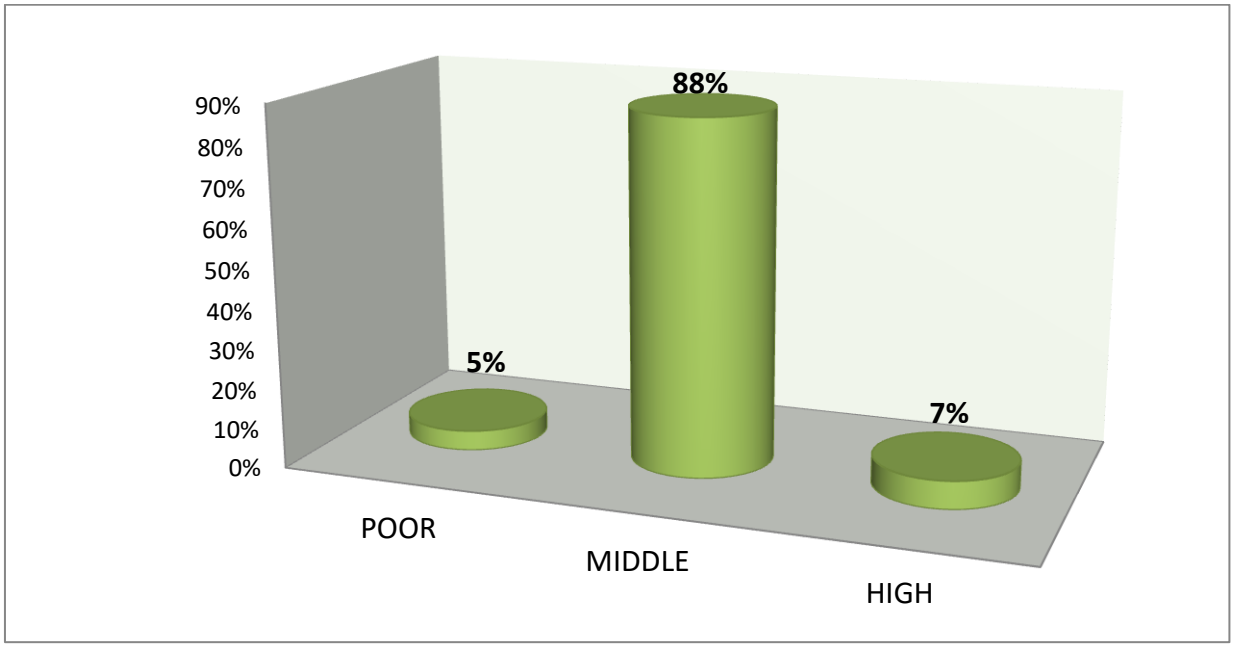

Figure 4: Distribution of *Swasakasam* patients according to locality

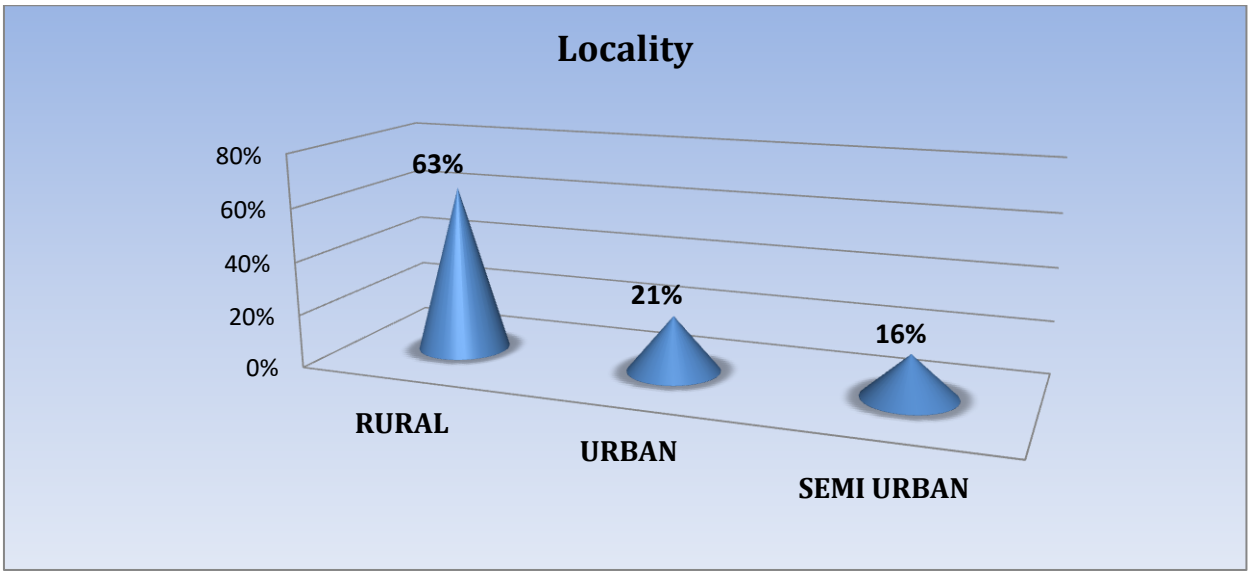

Figure 5: Distribution of *Swasakasam* according to type of residence

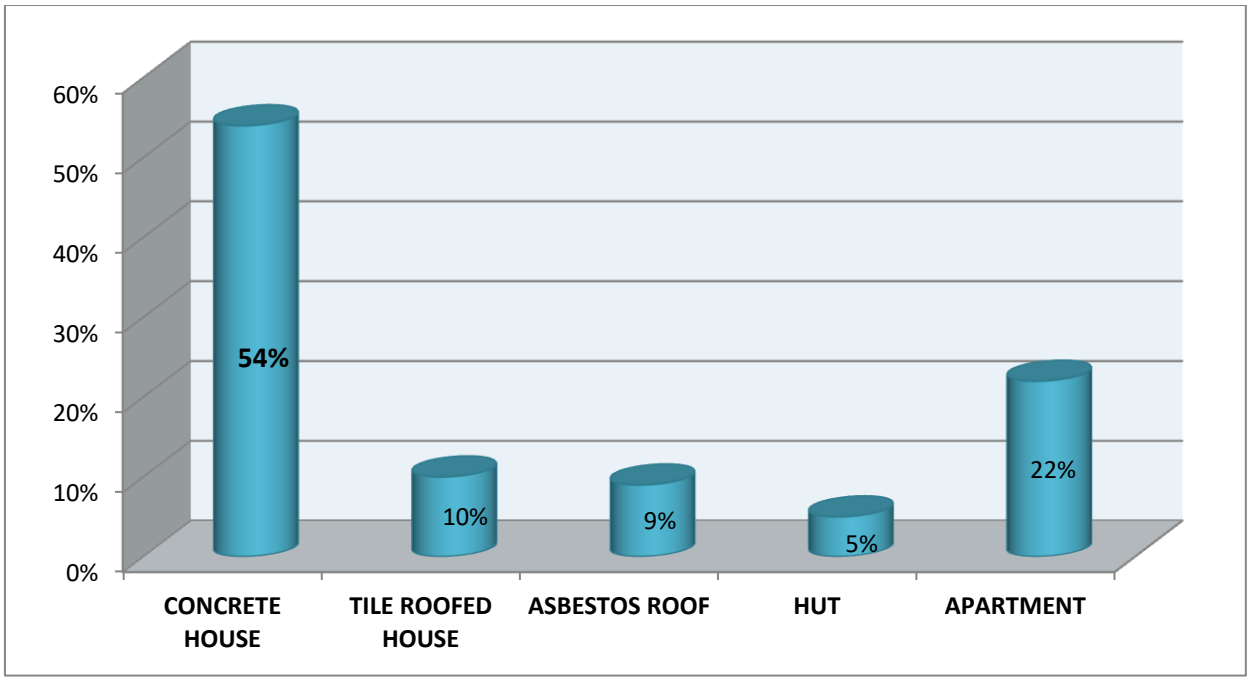

Figure 6: Distribution of *Swasakasam* according to dietary style

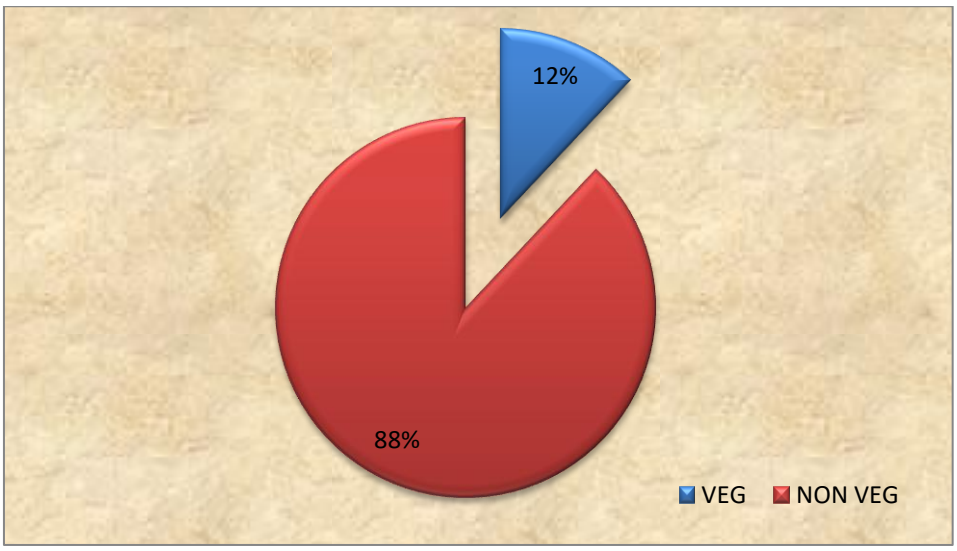

Figure 7: Distribution of *Swasakasam* according to obesity

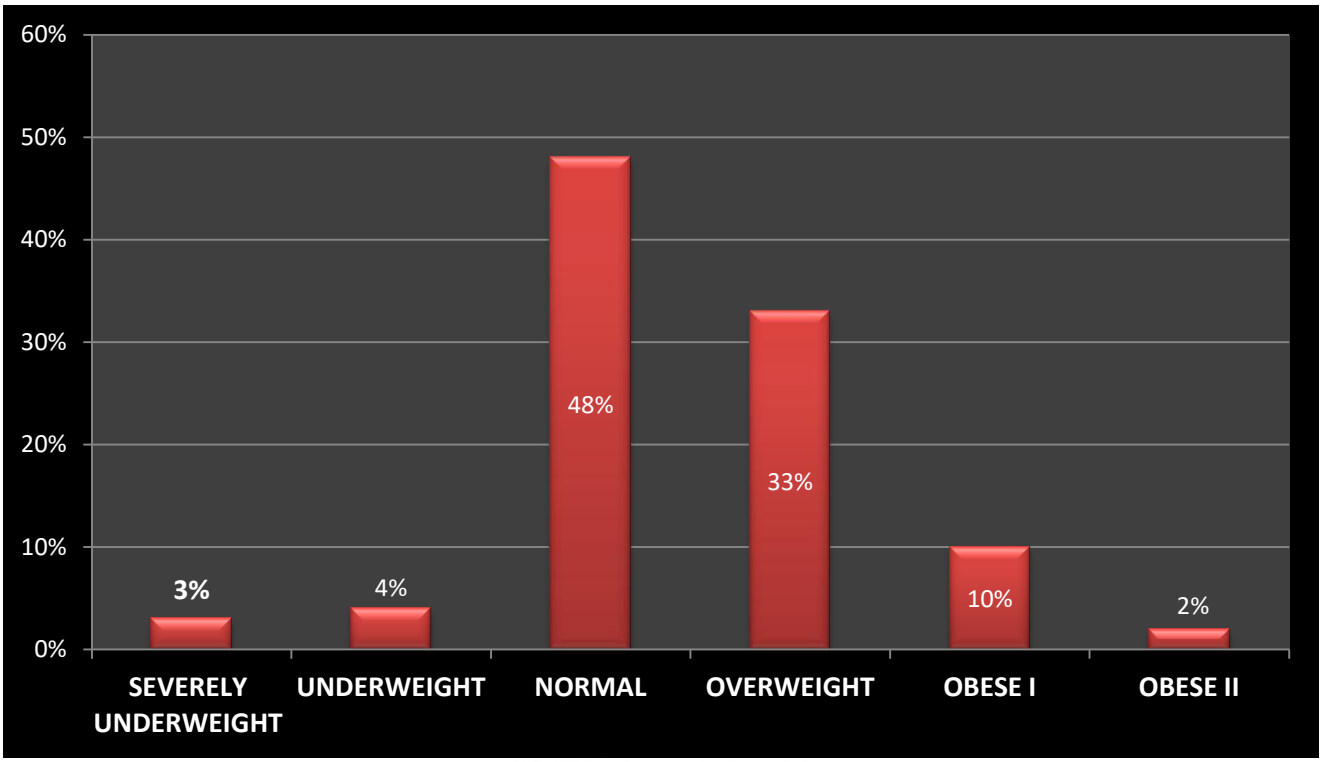

Figure 8: Distribution of *Swasakasam* according to family history

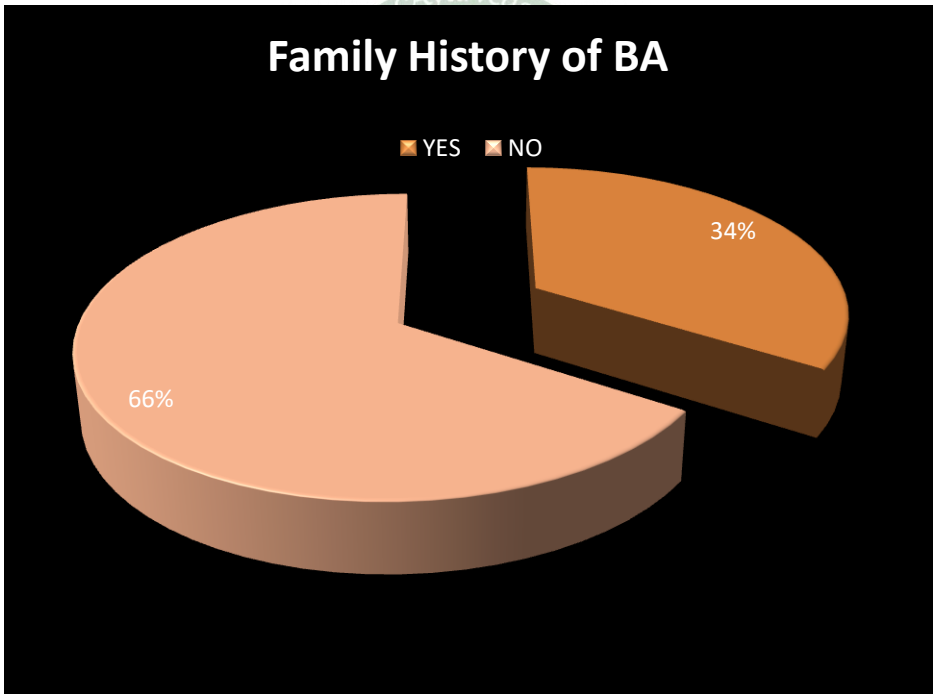

Figure 9: Treatment History of taking Siddha medicines

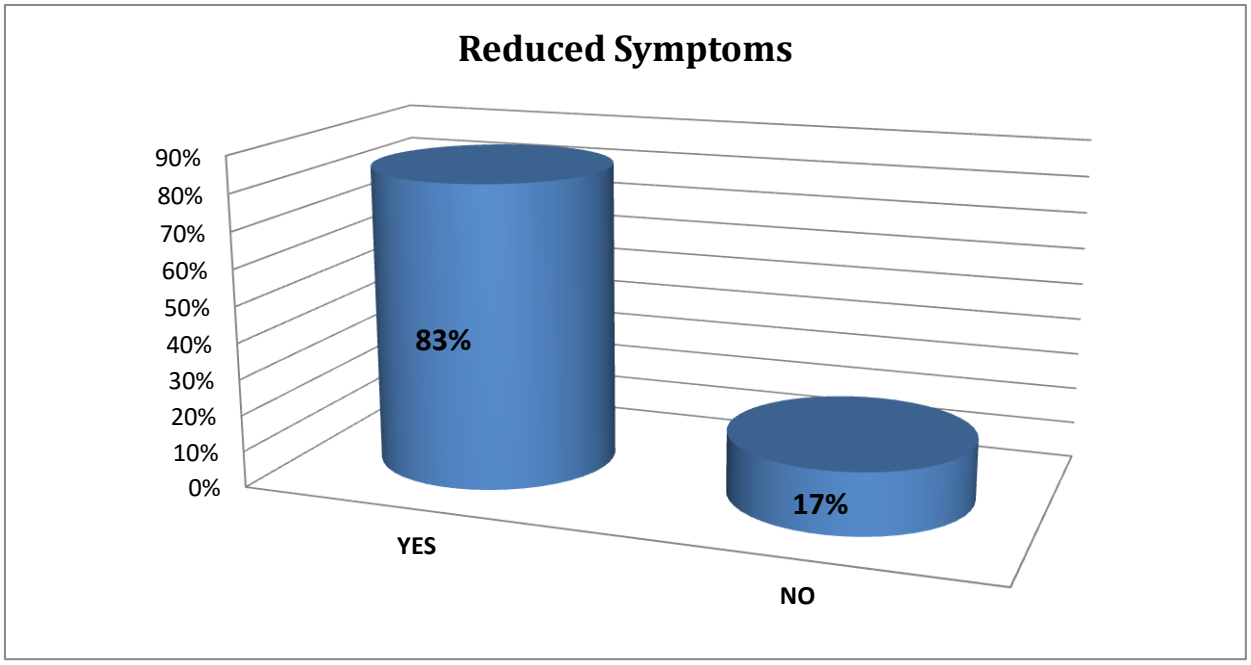

Figure 10: Distribution of *Swasakasam* patients performing yoga and *Pranayamam*