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Research Article

ASSESSMENT OF HEALTH RELATED QUALITY OF LIFE IN HYPERTENSIVE PATIENTS IN RURAL POPULATION OF GUNTUR DISTRICT IN SOUTH INDIA

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A B S T R A C T

Background: Hypertension is considered as one of the leading causes of death and disability, and its prevalence is rapidly increasing in developing countries. Adequate treatment of high blood pressure lowers the cardiovascular risk and other complications like vascular disease, and chronic kidney disease. However, the major problem for controlling hypertension is compliance with treatment

Aim and Objectives: To study and assess the quality of life in patients suffering from hypertension.

Methodology: A prospective observational cohort study was conducted for a period of 6 months in a rural area of Guntur. A total of 300 hypertensive patients who are newly diagnosed or suffering from hypertension since 3 years were recruited. Blood pressure was measured by using a sphygmomanometer and other demographics were collected. Health related quality of life was assessed by using 36-item short form (SF-36) and respective scores were calculated.

Results: By using SF-36 questionnaire Physical health (49.4) was the component mostly effected in hypertensive patients followed by Vitality (61.75), emotional aspects (69.06), pain (67.3), social functioning (78.54), appear to be least effected.

Conclusion: Proper treatment and awareness about hypertension is necessary to improve patient's quality of life. Good compliance not only improves the clinical outcomes, it is also having a great impact on improving quality of life and reducing health care costs which are due to complication and co-morbidities of hypertension.

INTRODUCTION

Hypertension is one of the most common chronic disease affecting humans and is a major risk factor for stroke, myocardial infarction, vascular disease, and chronic kidney disease. Due to the associated morbidity and mortality and cost of disease to society, preventing and treating hypertension is an important public health challenge now-a-days. Modern life is full of hassles, deadlines, frustrations and demands. Mental stress or psychosocial stress is one of the major risk factor for hypertension, which it is the risk factor for various other cardiovascular diseases.

The Constitution of the World Health Organization (WHO) defines health as "A state of complete physical, mental, and social well-being not merely the absence of disease". It follows that the measurement of health and the effects of health care must include not only an indication of changes in the frequency and severity of diseases but also an estimation of well -being and this can be assessed by measuring the improvement in the quality of life related to health care. WHO defines Quality of Life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.[1]

Quality of life (QOL) is a broad multidimensional concept that usually includes subjective evaluations of both positive and negative aspects of life.

- HRQOL is related to both self-reported chronic diseases (diabetes, breast cancer, arthritis, and hypertension) and their risk factors (body mass index, physical inactivity, and smoking status).
- Measuring HRQOL can help determine the burden of preventable disease, injuries, and disabilities, and can provide valuable new insights into the relationships between HRQOL and risk factors.
- Measuring HRQOL will help monitor progress in achieving the nation's health objectives.[2]

The QOL construct, implemented presently, includes a framework for assessing personal outcomes, a social construct

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that guides quality improvement at multiple levels, and a criterion for assessing effectiveness.[3]

There are many instruments used for evaluating the HRQOL, example of these instruments are the Medical Outcomes Study Short Forms: SF-12 and SF-36.[4]

Barriers to the acceptance of the notion of quality of life may include difficulties in both the understanding of the underlying concepts as well as in the interpretation of the results. [5]

Essentially two perspectives taken in quality of life research: social indicators research which considers the elites' valuation of what the people need, and conventional quality of life research which studies what people want, in order to improve their quality of life.[6]

The advantages of QOL key indicator systems are straightforward. Providing a human dimension to measuring progress in broad issue or policy areas by allowing for an integration of indicators that take into consideration and gauge people's values, preferences, and opinions.[7]

HRQOL goes beyond the direct measures of health and focuses on the quality-of-life consequences of health status. Another related concept to HRQOL is well-being. Measures of well-being typically assess the positive aspects of a person's life such as positive emotions and life satisfaction.[8]

The quality of life of hypertensive patients is strongly related to how their blood pressure is controlled, because symptoms caused by unsatisfactory disease control limit the performance of usual daily activities, resulting in financial difficulties, low self-esteem, feelings of incompetence, social isolation among others. Evaluating the quality of life of hypertensive individuals have suggested that the very chronic condition, side effects of the drug therapy and clinical complications interfere in the physical, emotional and intellectual state, in social interaction, and activities of daily living, which are decisive factors for quality of life.[9]

Measuring Quality of Life through 36-Item Short Form of The Medical Outcomes Study Questionnaire (SF-36)

The 36-item short form (SF-36) health survey is the most popular generic HRQOL instrument that has been widely used to measure several population studies and variety of health conditions including hypertension.[10] Health related quality of life (HRQOL) refer to the physical, psychological, and social domains of health, it is the distinct areas that are influenced by a person's experiences, beliefs, expectations, and perceptions. Individuals' perceptions of their quality of life may be affected not only by their illness but also by their therapy.[11] Hypertension impairs the quality of life (QOL) in advanced stages of the disease and shortens life span, although its course is silent at the beginning. Hypertensive patients feel the psychology of having a chronic disease and have difficulties to change their lifestyle; accordingly, there are negative effects on QOL. Different factors affect QOL of hypertensive patients and few studies are available about compliance to therapy and QOL in these patients.[12] On the individual level, this includes physical and mental health perceptions and their correlates-including health risks and conditions, functional status, social support, and socioeconomic status. At the community level, HRQOL includes resources, conditions, policies, and practices that influence a population's health perceptions and functional status. HRQOL can be adversely affected by hypertension itself and side-effects of antihypertensive drugs. [13]

MATERIALS AND METHODS

Prospective Observational Cohort Study was conducted in a rural area of Guntur district from December 2016 to May 2017. Inclusion criteria for the study was, people who were diagnosed with hypertension and were initiated on antihypertensive therapy at least 3 years ago. Pregnant women, patients with chronic complications and disabling diseases were excluded. A total of 300 patients met the inclusion criteria and were included in the study after obtaining the necessary consent. The necessary data was collected in a priorly designed data collection form and the quality of life was assessed using Short form 36 item health survey questionnaire. Follow up data was collected on a monthly basis and patients were counseled and provided with a validated patient information leaflet which includes information regarding the disease, use of antihypertensive medications, lifestyle modifications.

The SF-36 Health Survey is a multi-purpose, short-form health survey which contains 36 questions. It yields an eight-scale profile of scores as well as summary physical and mental measures. The eight scales are Functional Capacity (10 Items), Physical Aspects (4 Items), Pain (Two Items), General Health (5 Items), Vitality (4 Items), Social Aspects (2 Items), Emotional Aspects (3 Items), Mental Health (5 Items).

For the evaluation of results, each question is scored. Each domains are considered separately and the scores are transformed into a scale of 0 to 100. In the scale 0 correspond to worst health where as 100 shows best health condition.

Statistical analysis: Data was statistically analyzed using Graphpad Instat 3.0. Student't' test was used for the comparison of the data and the obtained values were expressed in actual number, percentage, and mean ± standard deviation and a Probability "P" value of less than 0.05 was considered as statistically significant.

Table 1 Baseline characteristics of sample population

Parameter	Value
Patient with hypertension	300
Mean age (years)	58.12
Males	87(29%)
Females	213(71%)
Mean Systolic blood pressure (SBP) in mm of Hg	146.8±14.36
Mean Diastolic blood pressure (DBP) in mm of Hg	91.66±9.09
Mean quality of life (QOL)	54.34±14.30

Total number of sample recruited at the initiation of the study was 300. Baseline characteristics of the sample population were depicted in (Table-1). A total of 300 samples were recruited with a mean age of 58.12 years and it is observed that female population (71%) is more when compared to male population (29%). Mean systolic and diastolic blood pressure at the initiation of the study was 146.8 and 91.66 respectively. Mean quality of life was 54.34.

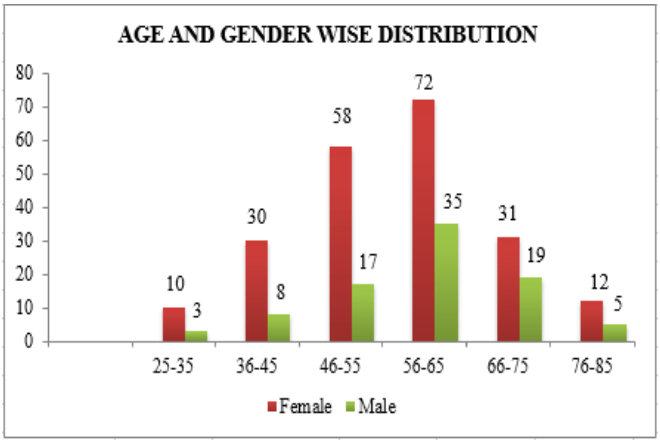

Figure 1 Age and gender wise distribution of sample population

By reviewing all the demographic data among 300 people most of the members 107 (36%) aged between 56-65 years are suffering from hypertension in that females are more 72 (24%) and males are only 35 (12%).

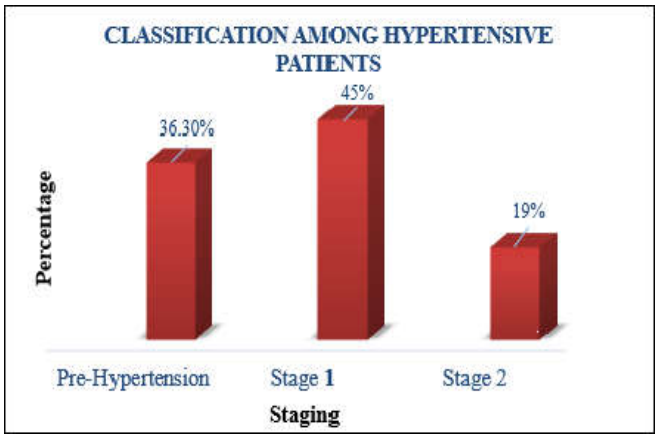

Figure 2 Staging of sample population based on JNC8

Among the sample population, 45% are in stage-1 hypertension followed by 36.30% are in the pre-hypertension stage and 19% are in stage-2 hypertension.

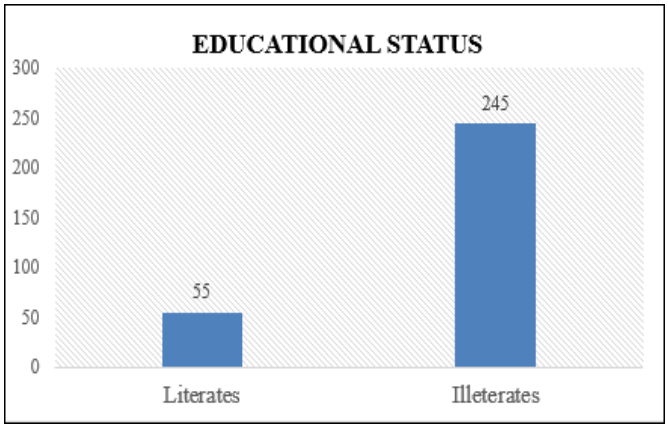

Figure 3 Educational status of sample population

Figure-3 depicts the educational status of sample population where 18% are literates and 82% are illiterates. The percentage of literate sample was much less than that of illiterate as the study was conducted in a rural community setting.

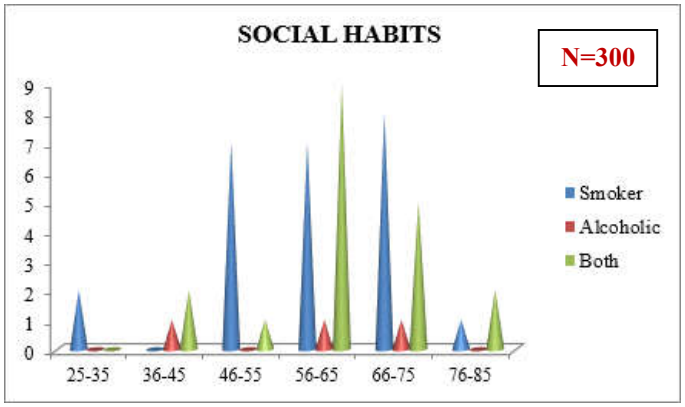

Figure 4 Social habits of sample population

In this study we found that among the sample population males are only 29% remaining 71% are females. In that smokers (3%) are more in 66-75 years age group and both smoking and alcohol (4%) taking members are high in 56-65 years age group.

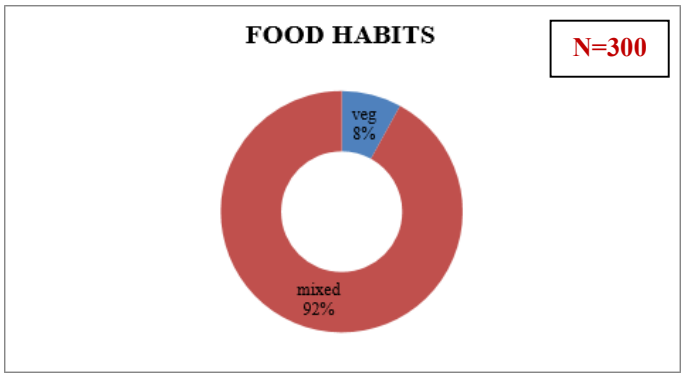

Figure 5 Food habits of sample population

Those patients who are taking mixed diet is more (92%) when compared to patients taking vegetarian diet (8%).

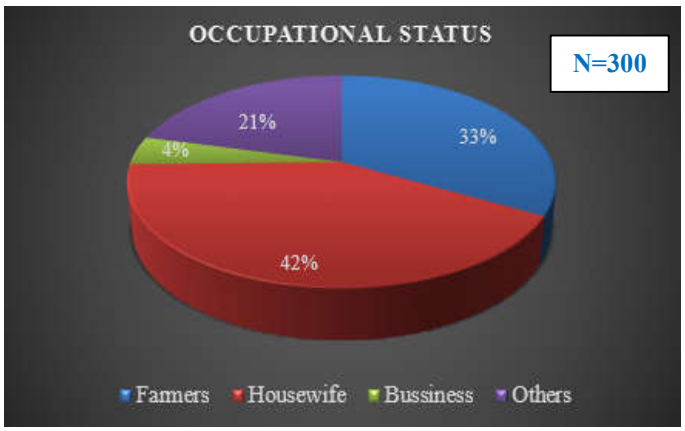

Figure 6 Occupation status of sample population

According to the occupational status, mostly Housewives (42%) are suffering with hypertension when compared to other occupation

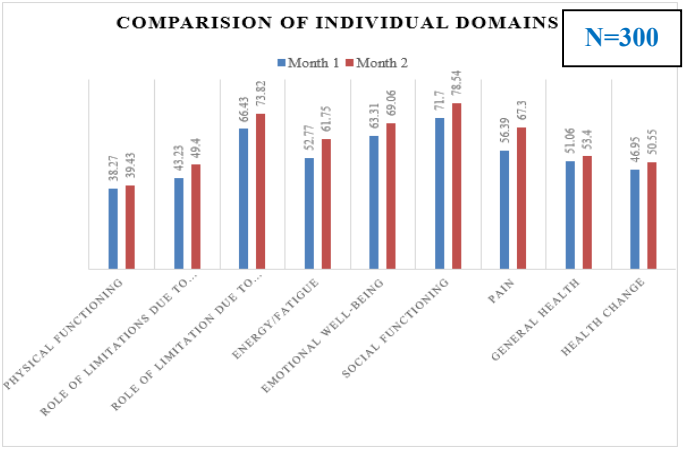

Figure 7 Scores of different domains of SF-36 (Compared between month-1 and month-4)

Above figure represents the scores of different domains of QOL of sample population compared between month-1 and month-4. A better improvement in all domains specifically role of limitations due to emotional problems (66.43 to 73.82), pain (56.39 to 67.3), and social functioning (71.7 to 78.54) are improved more than other domains.

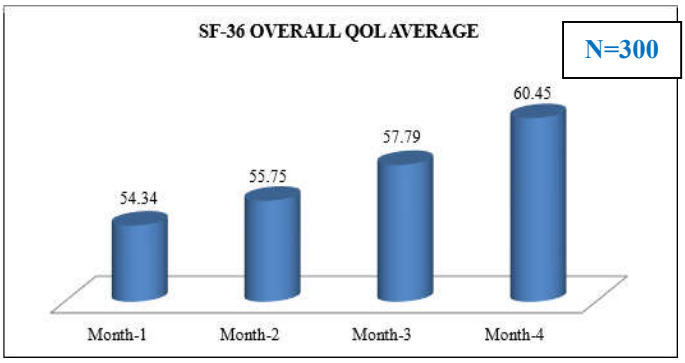

Figure 8 Average QOL of Sample Population during the study

Average QOL of sample population was improved during the study with a mean difference of 6.11.

limitations due to emotional problem (7.39), energy/fatigue (8.98), emotional well-being (5.75), Social functioning (6.84), pain (10.91), general health(2.42), health change (3.6) and the overall QOL Average was (6.11).

DISCUSSION

A total of 300 patients were enrolled out of which 29% were male and 71% were female. This is comparable to a study performed by Bhusal A, Jadhav PR, *et al*., in hospital settings (n=129), where the female population was more (52.2%) compared to the male population [14].

The mean systolic blood pressure of sample population was 146.8±14.36 mm of Hg and diastolic blood pressure was 91.66±9.09. This result is similar to the study conducted by Bhusal A, Jadhav PR, *et al*., where the mean systolic blood pressure was 140.10±14 mm of Hg and diastolic blood pressure was 90.12±8.9 mm of Hg [14]

45% patients are in stage 1 hypertension and 19% patients are in stage 2 hypertension. Which is comparable to study was conducted by Kaliyaperumal S, Hari SB, PrasanthKumar S, *et al*., 54.6% patients are in stage 1 hypertension and 45.3% are in stage 2 hypertension [15]

The present study showed a definite correlation between literacy rate and adherence. 61.8% literate population of our study were adherence to therapy, whereas only 35.1% illiterate were adherent. This is similar to Johnson AB, Sebastian A, Anusha S, *et al*., study where literates (92%) were more adherent compared to illiterates (83%). The number of illiterates in our study was more owing to the fact that our study was performed in a rural community based setting [16]. SF-36 questionnaire was used to assess the health related quality of life of the patient population. The same questionnaire was also used by Kaliyaperumal S, Hari SB, Prasanth Kumar S, *et al*., and comparable results were obtained comparing the two. Physical functioning aspect of the present study had an average of 39.43±19.35 whereas Kaliyaperumal S, Hari SB, Prasanth Kumar S, *et al*., study had it at 75.40.

Table 2 Comparison of different domains of SF-36 during the study

Parameter	Month-1 (Mean± SD)	Month-2 (Mean± SD)	Month-3 (Mean± SD)	Month-4 (Mean± SD)	'P' Value
Physical functioning	38.27±19.49	39.01±19.48	39.01±19.48	39.43±19.35	<0.05
Role of limitations due to physical health	43.23±48.61	43.1±48.43	47.31±48.73	49.4±48.73	<0.05
Role of limitations due to emotional problem	66.43±46.82	67.10±46.58	69.93±45.40	73.82±42.88	<0.05
Energy/Fatigue	52.77±11.93	54.81±12.22	57.84±12.34	61.75±13.04	<0.05
Emotional well-being	63.31±14.83	65.74±14.12	67.02±13.57	69.06±14.74	<0.05
Social functioning	71.7±18.12	73.57±17.10	75.33±16.44	78.54±15.37	<0.05
Pain	56.39±19.55	58.97±17.91	62.00±16.98	67.3±15.59	<0.05
General health	51.06±10.81	52.93±17.58	52.58±9.50	53.48±8.97	<0.05
Health change	46.95±14.21	48.55±13.11	49.46±12.97	50.55±11.75	<0.05
SF-36 Overall QOL Average	54.34±14.30	55.75±13.83	57.79±13.63	60.45±12.85	<0.05

*P value <0.05 considered significant (Paired student t-test- Two Tailed)

Table 3 Comparision of different objective parameters during the study

Parameter	Month-1 (Mean± SD)	Month-2 (Mean± SD)	Month-3 (Mean± SD)	Month-4 (Mean± SD)	'P' Value
Systolic Blood pressure	146.8±14.36	143.15±12.38	139.11±10.72	135.6±8.49	<0.05
Diastolic Blood pressure	91.66±9.09	90±8.10	87.43±7.15	86.53±5.66	<0.05
SF-36 Overall QOL Average	54.34±14.30	55.75±13.83	57.79±13.63	60.45±12.85	<0.05

Mean quality of life of sample population was summarized in the Table -2. Quality of life was analyzed by using SF-36 scale in the different aspects. Physical functioning with a mean difference of (1.16), limitations due to physical health (6.17),

This may be because of improper nutrition in rural areas. Other aspects were also compared between the present study and Kaliyaperumal S, Hari SB, Prasanth Kumar S, *et al*., study like emotional well-being (69.06 to 33.43), pain (67.31 to 49.3),

social functioning (78.54 to 83.1), vitality (61.75 to 36) and general health (53.48 to 54.25).[15]

CONCLUSION

Hypertension is one of the most common chronic diseases worldwide Proper treatment and awareness about hypertension is necessary to improve patient's quality of life. Good compliance not only improves the clinical outcomes, it is also having a great impact on improving quality of life and reducing health care costs which are due to complication and co-morbidities of hypertension. From our study the reduced quality of life in hypertensive patients was mainly due to physical health than that of mental and emotional aspects. Increase awareness on health promotion and hypertension among population, especially those people with low income and education levels, regular checkups, and life style modifications which can help in maintaining the HRQOL.

Limitations

1. The study needs to be conducted for longer periods with a huge sample size to establish the exact health related quality of life in hypertensive patients.
2. The health related quality of life was assessed based on the information provided by the patient, which may be biased as patients were not observed directly during the study.
3. Complications of hypertension, which can affect the health related quality of life couldn't be studied due to the limited study duration and lack of access to facilities.

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