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Available online at www.ijit.net**Research Article****GENDER DIFFERENCES IN QUALITY OF LIFE AND WELL BEING AMONG ADULTS FROM THE REGIONS OF DAKSHINA KANNADA DISTRICT****ARCHANA PRABHAT* AND KHYRUNNISA BEGUM****Department of Food, Nutrition & Dietetics, Alva's college, University of Mangalore, Moodbidre-574227. Email: drarchanaprabhat@gmail.com**Department of Studies in Food Science & Nutrition, University of Mysore, Mysore-570006***ABSTRACT**

Quality of Life is a multidimensional concept that includes vitality, pain, depression and other cognitive functions grouped under the broad headings of physical, functional, physiological and social health. **Objectives:** To examine gender disparity related to adult's health and Quality of Life (QoL) and to assess their nutritional status. **Methods:** Participants were selected from two taluks namely Karkala and Moodbidri from Dakshina Kannada. 350 families from each taluk formed the population, men and women heads aged more than 35 years were interviewed. Standard schedules were used to elicit information. Demographic profile including education and occupation, anthropometric measurements, weight, height, waist and hip circumference and MUAC were measured using standard procedures and equipments and Health Related Quality of Life (CDC HR QOL-14) were measured. **Results:** Nuclear family system predominated, with size varying from 02 - 04. 75% of the participants were Hindus. 67 -74% practiced non-vegetarian eating pattern. All the participants were literates; however, high % in Moodbidri had school education. Majority of women were home makers while men had daily wage jobs or business. The differences in all parameters between the two regions were extremely significant ($P < 0.0001$). Females with hypertension from Karkala were screened for obesity than the diabetes and normal subjects while male partners with a BMI of 26.8 ± 2.4 were diabetic and showed an elevated BP. Male partners with hypertension from Moodbidri were tend to be in BMI range of 29.0 ± 4.8 . BMI of all healthy subjects of either regions were comparatively low than the Diabetes and Hypertension, however, prevalence of Central obesity was seen among all the subjects. More than 50% of the participants claimed to maintain good health and had no illness of major significance. **Conclusion:** Gender difference did not appear across any dimensions of health-related quality of life.

KEY WORDS: QoL, Gender, Diabetes, Hypertension, Obesity**INTRODUCTION**

Quality of Life is a multidimensional concept in the field of health, since it includes vitality, pain, depression and other cognitive functions grouped under the broad headings of physical, functional, physiological and social well being. Health-related quality of life (HRQOL) (Bute et al., 2003) studies also have linked depression to unhealthy behaviours such as smoking and physical inactivity. Interest in health-related quality of life is soaring because people are living longer and want to stay healthy and active for as long as possible (Campbell, 1999). In all these initiatives the issue that is given least prominence is the "Gender in the context of Nutrition advocacy and social significance". Such approaches should take into account gender differences when examining objective quality of life. Epidemiological research

studies have indicated that there is a vast majority of the adult male members are healthy and have no significant illness over and above the female subjects. Nevertheless Quality of life as a measure of health have the additional benefit of obtaining a description of health related characteristics and serves as an important supplement to wealth and employment.. (Drewnowski, 2001).

MATERIALS AND METHODS**Selection of subjects**

700 households from Karkala and Moodbidri taluks of South Kanara district were included for the study. 350 households each from the two regions were selected according to cluster sampling. Also, the households who co-operated to provide complete information were included.. The female head of the family were approached to elicit the

information. The study was approved by Institutional Human Ethical Committee (IHEC), University of Mysore, Mysore, India. A consent letter was obtained from the participants. The content of the letter was read by the contractor/head and explained to the labour groups.

The demographic information such as family size, structure, education and employment status was elicited using pre tested and standardised questionnaire. Health Related Quality of Life (CDC HR QOL-14, 1977) (Ogden, 2002) application was used to obtain Quality of life data. Both men and women were assessed for height, weight, mid upper arm circumference (MUAC), waist and hip circumferences were measured according to standards non flexible fiberglass tape. The methods of measurement was as described by Jelliffe, 1966. Body weight was measured using electronic body weighing machine and recording was done nearest to 0.1Kg. The machine was checked using standard weights before use. Height was measured using a height scale, measurement was made nearest to 0.1 cms. Descriptive analysis was

used to analyse the data; Chi-square analysis was employed for comparisons between variables.

RESULTS AND DISCUSSION

The results of this study indicate the quality of life – particularly, the health-related quality of life. The analysis of the data set indicates that the sample is well represented in terms of gender, Diet type, Family size education and SES distribution. The demographic profile of the selected households is presented in Table 1. Nuclear families formed 67% and joint families are 24%. 97% of the families comprised of less than 6 members, and had children ≤ 4 . Our observation was similar to other reports since nuclear family systems seen predominant in most of the urban areas of developing countries (Bickel et al., 2000, Benson 2004). Majority of the participants practised Hinduism followed by Jainism. There was an essentially similar distribution of the families practising vegetarianism/Non vegetarianism. Family size has a greater relevance to the distribution of family resources among family member and is an important index of security (Alderman and Garcia M, 1994).

Table 1: General profile of the study population

| Variables | Characteristics | Karkala Tq (%)No. | Moodbidri Tq (%)No. | Chi-square |
|--------------------|-----------------|-------------------|---------------------|---------------------|
| Family Type | Nuclear | 82.0 (289) | 54.0 (188) | 67.293*** |
| | Joint | 15.0 (52) | 38.0 (134) | |
| | Extended | 3.0 (9) | 8.0 (28) | |
| Head of the family | Female headed | 10.0(35) | 16.0(56) | --- |
| | Male headed | 90.0(315) | 84.0(294) | |
| Family Size | 2-4 | 61.0 (215) | 55.0 (193) | 0.749 ^{NS} |
| | 5-6 | 38.0 (132) | 44.0 (153) | |
| | 7-8 | 1.0 (3) | 1.0 (04) | |
| No. of children | 1-2 | 79.0 (280) | 91.0 (320) | 22.099*** |
| | 3-4 | 19.0 (68) | 7.0 (26) | |
| | >5 | 1.0 (2) | 2.0 (4) | |
| Religion | Hindu | 73.0 (256) | 75.0 (264) | 16.923** |
| | Muslim | 6.0 (21) | 5.0 (19) | |
| | Christians | 16.0 (57) | 9.0 (30) | |
| | Jainism | 5.0 (16) | 11.0 (37) | |
| Type of Diet | Vegetarian | 28.0(97) | 33.0(115) | 2.449 ^{NS} |
| | Non-vegetarian | 72.0 (253) | 67.0(235) | |

P<0.01, *P<0.0001 & NS -Non Significant

Table 2 presents other characteristics of the participants. Male members were more educated than female members, although all participants were literates. However, the association was not significant. 59 & 20% of females were homemakers and daily wagers respectively; the rest were engaged in different occupational activities

like teacher, professionals and government officials. Among the male participants, 56% were business men and government officials, 21% were teachers & professionals and 15% were daily wagers. The pattern of occupation was found to have statistically extremely significant association.

Table 2: Education, Occupation And Income Status Of The Study Population

| Variables | Characteristics | Karkala Tq | | Chi-square | Moodbidri Tq | | Chi-square |
|------------|--|---------------------|-----------------------|------------|---------------------|-----------------------|------------|
| | | Males % (No.) | Females % (No.) | | Males % (No.) | Females % (No.) | |
| Education | Attended schools | 53.0 (188) | 62.0 (217) | 21.029** | 60.0 (208) | 70.0 (245) | 11.070* |
| | Graduates | 31.0 (108) | 51.4 (110) | | 28.0 (101) | 24.0 (83) | |
| | Profession- Dr./B.E./LLB | 16.0 (54) | 6.6 (23) | | 12.0 (41) | 6.0 (22) | |
| Occupation | Home makers | -- | 50.0 (174) | 292.442*** | -- | 48.0 (169) | 272.201*** |
| | Labourers- Agriculturalist/ Others | 33.0 (117) | 20.0 (68) | | 35.0 (121) | 26.0 (92) | |
| | Professionals/ Teacher | 15.0 (54) | 21.0 (75) | | 17.0 (58) | 16.0 (55) | |
| | Business/ Govt Official /Agriculturalist | 38.0 (133) | 8.0 (29) | | 39.0 (137) | 5.0 (18) | |
| | Others | 13.0 (46) | 1.0 (4) | | 9.0 (34) | 5.0 (17) | |
| | SES | Low | 50.0(176) | | 55.0(191) | | |
| Middle | 40.0(140) | | 37.0(131) | | | | |
| High | 10.0(34) | | 8.0(28) | | | | |

*P<0.05, **P<0.01 & ***P<0.0001

Anthropometric parameters are the useful indicators of health in any population; they are frequently used in assessing nutritional status. Table 3 presents mean and SD values of linear height, weight, MUAC, waist and hip circumference of adult male and female participants. The mean age of the study population was 40-60 and 35-50 years respectively for males and females. Mean height of men was 166.0cms with a SD of 8.63 (range being 157.4 -175.0), women were 159.0±9.6cms tall with a range being 157.0-159.0 cms. It is evident that actual weight was more than the Ideal body weight in both males and females from the two regions; using BMI cut off for SE Asians regions (WHO, 2004); the BMI was found to be within the normal range for female

subjects in the Karkala region. Females from Moodbidri and male subjects from both the regions were in over weight range. The MUAC for the regions was found to be very close, men from Karkala had a mean MUAC of 29.9±4.828 cms and those from Moodbidri had 30.4±7.431cms; the difference was 0.5cms. A similar observation was with female participant, women from Moodbidri had MUAC 0.6cms higher than those from Karkala. WHR exhibited a typical occurrence of central obesity in both male and female participants from the two regions studied. While participants from Karkala had a mean WHR of 1.05±0.097 for males and females respectively and were higher than those from Moodbidri.

Table 3: Mean Anthropometric Measurements Of Selected Participants

| Parameters | Karkala Tq | | Moodbidri Tq | |
|----------------|-------------|------------|--------------|-------------|
| | Males | Female | Males | Female |
| | Mean ± SD | Mean ± SD | Mean ± SD | Mean ± SD |
| n=350 | | | | |
| Age (Yrs) | 51.0±10.0 | 46.0±11.0 | 50.0±10.0 | 42.0±10.0 |
| Ht (cms) | 166.0±8.630 | 159.0±9.60 | 166.0±8.30 | 157.0±8.50 |
| Actual Wt (kg) | 64.4±7.981 | 57.6±9.117 | 66.3±8.492 | 58.7±8.939 |
| Ideal Wt (kg) | 61.1±6.530 | 56.3±6.670 | 61.0±6.250 | 54.8±6.880 |
| MUAC (cm) | 30.0±4.828 | 28.1±5.102 | 30.39±4.645 | 28.9±5.107 |
| WC (cms) | 92.1±7.072 | 89.2±9.868 | 88.3±7.431 | 86.58±9.725 |
| HIP (cms) | 87.3±7.815 | 84.6±9.662 | 88.0±7.512 | 86.8±10.05 |
| BMI | 23.27±2.750 | 22.6±3.456 | 24.06±3.305 | 23.8±3.561 |
| WHR | 1.05±0.082 | 1.05±0.097 | 1.00±0.097 | 0.99±0.137 |

Health profile of the male and female participants is presented in the Table 4. It is encouraging to observe that 84-88% of males and females in two study regions were healthy and body weights essentially falling closer to Ideal body weight. Literature indicates predominance of Diabetes Mellitus (DM) in Indian population since Indians are genetically predisposed to develop Type II DM (Ramya et al., 2011). However, in our study population prevalence of DM found 8-12%, it is worth mentioning that the selected population belonged to 40-60 years (men) and 35-50 years (women) respectively. It may be right to comment that all the participants are in the age group i.e., prone to develop degenerative diseases. The low prevalence seen in the study population may have been due to their life style and eating behaviours, which may have extended protection against DM

and hypertension. Prevalence of hypertension was 4% both in males and females which is also low among the study group. It was proposed to compare the anthropometric parameters between Normal (Non diabetic & Non Hypertensive) and those with Diabetes mellitus and hypertension. Mean age among those inflicted with diabetes mellitus and hypertension was compared with normal subjects. Male participants with an elevated Blood Pressure were found to be older, while those males having DM were younger. Such age differences were not seen in females. The mean heights of both men and women were found to be lower in subjects having DM and HT, while the mean weight was high. Therefore, it is obvious that people having DM and HT were shorter and heavier as compared to normal subjects.

Table 4: Comparison Of Anthropometric Parameters Between Healthy Males/Females And Those With Diabetes Mellitus And Hypertension

| | Subjects n=350 | Health status* | % (No.) | Age Yrs | Ht (cms) | Actual Wt (kg) | Ideal Wt (kg) | MUAC (cm) | Hip (cm) | Waist (cm) | BMI | WH R |
|----------------|-------------------|-------------------|---------------|--------------------|---------------------|--------------------|---------------------|---------------------|---------------------|--------------------|-------------------|------------------|
| | | | | | | | | | | | | |
| Karkala Taluk | Males | N | 85.0 (299) | 51.0 \pm 9.0 | 170.0 \pm 8.7 | 63.9 \pm 7.7 | 61.5 \pm 6.6 | 29.6 \pm 4.8 | 87.3 \pm 7.9 | 92.1 \pm 7.2 | 22.9 \pm 2.4 | 1.0 \pm 0 |
| | | DM | 11.0 (37) | 49.0 \pm 11.0 | 164.0 \pm 7.9 | 64.7 \pm 7.9 | 59.3 \pm 5.8 | 29.9 \pm 3.4 | 87.01 \pm 7.9 | 91.46 \pm 6.0 | 24.1 \pm 2.7 | 1.0 \pm 0 |
| | | HT | 4.0 (13) | 53.0 \pm 10.0 | 163.0 \pm 5.9 | 76.3 \pm 7.4 | 58.2 \pm 4.3 | 36.3 \pm 3.7 | 88.4 \pm 7.7 | 94.1 \pm 5.9 | 28.9 \pm 3.0 | 1.0 \pm 0 |
| | Females | N | 88.0 (308) | 46.0 \pm 11.0 | 161.0 \pm 8.9 | 56.6 \pm 9.0 | 57.0 \pm 6.3 | 27.87 \pm 5.9 | 84.5 \pm 9.9 | 88.6 \pm 9.84 | 21.8 \pm 2.8 | 1.0 \pm 0 |
| | | DM | 8.0 (29) | 48.0 \pm 12.0 | 155.0 \pm 10.5 | 64.8 \pm 6.8 | 51.1 \pm 8.2 | 30.7 \pm 5.1 | 85.8 \pm 6.54 | 93.2 \pm 6.3 | 26.8 \pm 2.4 | 1.0 \pm 0 |
| | | HT | 4.0 (13) | 41.0 \pm 8.0 | 154.0 \pm 4.6 | 62.8 \pm 5.0 | 51.4 \pm 3.6 | 29.0 \pm 3.7 | 89.1 \pm 7.4 | 96.5 \pm 11.7 | 26.4 \pm 1.3 | 1.0 \pm 0 |
| Moodbali taluk | Males | N | 84.0 (294) | 49.0 \pm 9.0 | 167.0 \pm 8.2 | 65.2 \pm 7.5 | 61.6 \pm 6.1 | 30.11 \pm 4.7 | 87.7 \pm 7.5 | 88.5 \pm 7.5 | 23.4 \pm 2.7 | 1.0 \pm 0 |
| | | DM | 8.0 (28) | 50.0 \pm 11.0 | 164.0 \pm 8.3 | 70.7 \pm 8.1 | 59.8 \pm 6.1 | 32.56 \pm 4.5 | 89.65 \pm 7.8 | 87.2 \pm 7.1 | 26.2 \pm 3.1 | 0.9 \pm 0 |
| | | HT | 8.0 (28) | 52.0 \pm 10.0 | 160.0 \pm 6.7 | 73.3 \pm 12.6 | 56.18 \pm 4.7 | 30.7 \pm 4.4 | 89.3 \pm 7.0 | 88.5 \pm 6.79 | 28.7 \pm 4.7 | 0.9 \pm 0 |
| | Females | N | 85.0 (296) | 40.0 \pm 9.0 | 158.0 \pm 8.1 | 57.2 \pm 8.2 | 55.0 \pm 5.6 | 28.58 \pm 5.2 | 86.28 \pm 9.9 | 86.0 \pm 9.9 | 22.9 \pm 3.0 | 0.9 \pm 0.1 |
| | | DM | 12.0 (41) | 47.0 \pm 8.0 | 155.0 \pm 8.6 | 66.8 \pm 8.4 | 53.0 \pm 5.7 | 30.529 \pm 4.5 | 89.70 \pm 11.0 | 89.2 \pm 8.0 | 27.8 \pm 2.8 | 0.9 \pm 0.1 |
| | | HT | 4.0 (13) | 46.0 \pm 10.0 | 151.0 \pm 12.3 | 64.1 \pm 9.7 | 50.0 \pm 7.9 | 28.6 \pm 4.1 | 87.6 \pm 11.3 | 87.0 \pm 11.5 | 29.0 \pm 4.8 | 0.9 \pm 0.1 |

The relative BMI's also indicates high Body Mass among subjects having diabetes mellitus and hypertension, therefore high BMI could be one of the reasons for the degenerative diseases as well as their genetic disposition. Other parameters such as MUAC, hip and waist circumference of normal subjects both males and females were markedly lower than those with DM and HT. However, there was no difference in WHR of normal subjects and those with Diabetics and Hypertensive and in general had central obesity. Studies have reported higher BMI to be associated with central adiposity and higher waist/hip ratios along with risk of DM

and HT (Yajnik 2001). It is also worthwhile to mention that, the normal subjects although had weights within the normal range, did exhibit high WHR. This is an evidence for the genetic profile for abdominal adiposity in the study population.

Table 5 indicates the overall Quality of life (QoL) of male and female couples of the households. It is doubtless that QoL is influenced by SES, our results exhibited this effect. Both males and females claimed to have 'Good' QoL, percentage varied from 49-63% among males and 51-66% among females. An insignificant percentage of

participants among men and women considered themselves to have 'Excellent' QoL. 22-31% of males and 18-28% females from different SES claimed their QoL as 'Very Good'. There was no distinct difference in percentage due to SES indicating that QoL in the extreme goodness has less influence from economic status.

Also percentage of participants who declare their QoL as 'Poor' were small and belonged to low and middle SES. Male and female participants from low SES were in 'Fair' QoL and were considerably higher percentage as compared to those from middle and high SES. It can be observed from table 5, a small but significant difference in percentage of participants claiming 'Good' and 'Fair' QoL, it suggests a linear association between

QoL and SES. Chi Square analysis indicated a mild statistical association.

Table 5: Overall Quality Of Life Of Male And Female Counterparts And Factors Influencing

| Gender | | Total | Influencing | | | | | Chi Square | Females | | | | | Chi Square | |
|---------------|------------------|------------|--------------|---------------|---------------|--------------|------------|---------------------|-------------|---------------|---------------|---------------|--------------|------------|-----------|
| | | | Ex | Vg | Good | Fair | Poor | | Ex | Vg | Good | Fair | Poor | | |
| SES | Low | 367 | 3.0 (10) | 29.0 (107) | 49.0 (184) | 16.0 (60) | 2.0 (6) | 15.567* | 4.0 (15) | 28.0 (101) | 51.0 (186) | 16.0 (60) | 0.5 (2) | 18.452* | |
| | Middle | 271 | 1.0 (4) | 22.0 (58) | 63.0 (171) | 13.0 (35) | 1.0 (3) | | 1.0 (4) | 18.0 (48) | 66.0 (177) | 16.0 (43) | 0.0 (0) | | |
| | High | 64 | 3.0 (2) | 31.0 (20) | 61.0 (39) | 5.0 (3) | 0.0 (0) | | 1.5 (1) | 20.0 (13) | 64.0 (41) | 14.0 (9) | 0.0 (0) | | |
| | Vegetarian | 212 | 2.0 (4) | 29.0 (62) | 55.0 (116) | 13.0 (28) | 0.9 (2) | | 3.0 (7) | 21.0 (45) | 57.0 (121) | 18.0 (38) | 0.4 (1) | | |
| Diet type | Non Vegetarian | 488 | 2.0 (12) | 25.0 (123) | 56.0 (276) | 14.0 (70) | 1.0 (7) | 1.628 ^{ns} | 3.0 (14) | 24.0 (116) | 58.0 (283) | 15.0 (74) | 0.2 (1) | | |
| | Vegetarian | 408 | 3.4 (14) | 25.0 (102) | 58.0 (237) | 12.0 (51) | 1.0 (4) | | 3.0 (15) | 21.0 (88) | 59.0 (242) | 15.0 (62) | 0.2 (1) | | |
| Education | 2-4 | 408 | 3.4 (14) | 25.0 (102) | 58.0 (237) | 12.0 (51) | 1.0 (4) | 9.414* | 462 | 3.0 (15) | 21.0 (88) | 59.0 (242) | 15.0 (62) | 0.2 (1) | 40.864*** |
| | 5-8 | 292 | 0.7 (2) | 29.0 (83) | 53.0 (155) | 16.0 (47) | 1.0 (5) | | | 1.71 (5) | 25.0 (74) | 21.0 (63) | 54.0 (50) | 0.5 (1) | |
| | Attended schools | 396 | 2.0 (8) | 22.0 (87) | 60.0 (238) | 14.0 (55) | 2.0 (8) | | | 1.0 (9) | 22.0 (101) | 61.0 (281) | 14.0 (65) | 1.0 (6) | |
| | Graduates | 209 | 4.0 (11) | 41.0 (122) | 39.0 (118) | 16.0 (48) | 0.0 (0) | | | 5.0 (10) | 32.0 (62) | 39.0 (75) | 24.0 (46) | 0.0 (0) | |
| Professionals | 95 | 0.0 (0) | 30.0 (28) | 60.0 (57) | 8.0 (8) | 1.0 (2) | 48.905*** | 45 | 2.0 (1) | 10.0 (4) | 84.0 (38) | 4.0 (2) | 0.0 (0) | 49.225*** | |

Ex- Excellent, Vg- Very good, *P<0.05, **P<0.01, ***P <0.0001 & NS-Non Significant

Effect of diet on QoL was not distinctly different. Men and women practising vegetarianism/ Non vegetarianism claimed essentially similarly QoL. Chi Square did not exhibit statistical association between diet type and QoL. Literature has provided sufficiently to the effect of family size on various aspects of human life. Large families tend to distribute family income there by per capita income availability become less. Such situation tends to increase the risk for higher incidences of infection and deficiency state or any other physical and mental ill health. It is also well known that poor nutrition leads to impaired physical and mental development (Patrick and Erickson P, 1993, Moriarty et al., 2003).

Our results depicted similarly, it is obvious from table 5 that in small families' relatively high percentage of men and women participants claimed to have excellent QoL. Percentage of men and women claiming 'Good' QoL was significantly higher in small families while 'Good', 'Fair' and 'Poor' QoL decreased with small families. The frequencies of men and women in varying states of QoL were essentially similar and the association was extremely significant statistically.

Influence of education on QoL was also studied to compare whether education influences QoL among males and females. A dissimilar distribution of the subjects in varying QoL was noted. It is worthwhile

to comment that percentage of subjects with 'Excellent' QoL in both men and women were small and insignificant, highest percentage of subjects claimed to be in 'Good' QoL. However, percentage of men claiming 'Very good' QoL increased slightly with increase in educational level. Higher percentage of men and women with graduate qualification claimed to have 'Very good' QoL followed by the professionals. Our results indicate that education bears significantly association with QoL (P <1%). QoL improves with better educational qualification and therefore exhibits a statistically extremely significant association.

Our observations have clearly indicated that adult male members bear a higher risk for ill health and major type of illness.. Nevertheless our studies also exhibited that females to also undergo ill health where in frequent sickness was physical ill health.

CONCLUSION

The QoL is an examination of influence upon the goodness and meaning in life as well people s' happiness and well being. QoL as a measure of health of the family members, both males (49-63%) and females (51-66%) claimed to have 'Good' QoL. SES, diet type, family size and education status were found to affect the QoL, nevertheless, markedly higher percentage of males experienced sickness. Major form of sickness in men and

women from high SES experienced ill health. Small family size, non vegetarianism had positive influence on QoL. Higher proportion of physical illness was noted among professionals. Gender difference in any dimensions of health-related quality of life are not specific characteristics.

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