

## Research Article

### Gender Differences in Nutritional Quality of Life of Young and Old Adults

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#### Abstract

Healthy eating is essential for individuals' physical as well as psychological wellbeing. Women's focus on achieving thin ideal physique and men's aspiration for muscular body is likely to impact their food intake and consequently Nutritional Quality of Life (NQoL). Moreover, NQoL varies across different age groups owing to the varying nutritional needs with increasing age. Investigating NQoL across gender and age has useful implications for health counseling and practice.

**Objectives:** To investigate differences in nutritional quality of life among gender and different age groups. To investigate gender and age group differences in knowledge of nutritional value of food.

**Methodology:** A descriptive cross-sectional research was conducted. The sample consisted of 200 participants i.e., 100 younger adults between age range of 18-23 years and 100 older adults between age range of 40-60 years. Gender of participants was equally represented in both age groups. Nutritional Quality of Life (NQoL) Instrument and a self developed Nutritional Knowledge Questionnaire were administered on the sample to collect data.

**Results:** Mean age of younger adults was  $19.17 \pm 1.18$  and for older adults it was  $48.17 \pm 5.20$ . Findings showed that women scored significantly higher on psychological factor and social impact whereas men scored significantly higher on food impact and self-efficacy impact of NQoL. Moreover younger adults scored higher on self-efficacy than older adults and older adults scored higher on food impact, social impact, psychological factor and physical functioning than younger adults. Also interaction of gender and age was significant regarding knowledge of nutritional value of food; older women and younger men had more knowledge of nutritional value of food than younger women and older men.

**Conclusions:** There were significant differences in nutritional quality of life. Also knowledge of nutritional value of food varied across gender and age groups.

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#### Introduction

Healthy eating is not only essential to an individual's physical health, but it is equally important for a healthy psychological functioning.<sup>1</sup> Various studies have linked a nutritional diet and healthy eating habits with individuals' self esteem, self efficacy, physical functioning, social behaviors and wellbeing.<sup>2,3,4</sup>

Whatever we eat has an impact on our overall quality of life. Nutritional quality of life refers to how meal intake influences different domains of individual's life including psychological wellbeing, self-image view, social interaction, physical functioning and self-efficacy.<sup>1</sup> It is concerned with consumption of nutrients and its effect on individual's life. Nutrients

are considered essential for our body because they help us in proper functioning. Also the requirement of intake of the nutrients for a body varies according to individual's age, gender, height and weight.<sup>5</sup>

In this study Nutritional quality of life is defined in following domains: a) Food impact, refers to the impact of food or nutrition on a person's physical, mental and social well being; b) Self-image impact, refers to impact of food intake on one's perception about self; c) Psychological impact, pertains to the impact of food intake on one's feelings before and after meal; d) Social/Interpersonal impact, refers to the dietary habits when accompanied by friends; e) Physical Functioning impact refers to the impact of food intake on efforts to maintain of weight and f) Self-efficacy impact, refers to the confidence level of making proper food choice regarding eating and its quantity.<sup>1</sup> An important factor closely related with the nutritional quality of life is knowledge and awareness related to nutritional value of food which is being consumed.

In Pakistan, knowledge of nutrition and its impact on quality of life is somehow segmented; there are two extremes in this case. On one side there are people who have a very narrow perspective towards food selection. They do not eat in order to get healthy nutrients but it is the temptation of taste which operates on their food choices. People consume meat and poultry for enjoying its taste and not essentially to obtain nutrition, and sometimes this overindulgence results in hampered quality of life. On the other side there is another segment of society which is quite alert of the consequences of their food selection. They prefer fruits and vegetables which are low in fat and calories, and stacked with fiber and water, which impacts their life in a healthy way.<sup>6</sup>

It has been assumed that nutritional quality of life has a different impact, on the lives of men and women; men having conventional gender roles tend to think that they are stronger both physically and emotionally with lesser need to be nurtured by others.<sup>7</sup> A survey conducted on young men and women concluded that there was less calorie intake in women in contrast to men. Overall the information uncovers a blended picture of men-women consumption of calorie and protein intake which shows that how gender difference exists in the effect of nutritional quality of

life of both men and women.<sup>8,9</sup>

A research conducted on younger adults of Malaysian university concluded that there was a positive effect on the social and nutritional quality of life of undergraduate when they were given 10 weeks nutrition education that showed a potential not only to improve nutritional quality of life of youth but their future also.<sup>10</sup> Hence it can be assumed that knowledge of nutritional value of food is also an important factor in nutritional quality of life.

Age has been examined as an imperative correlate of nutritional quality of life. Generally it is observed that older adults have restricted diet choices due to their health demands, however, sometimes they become so much preoccupied with dietary specifications that they tend to skip important nutrients in their diet which often results in hampered nutritional quality of life.<sup>11,12</sup> On the other side young adults tend to skip their meals and adopt unhealthy eating patterns to achieve ideal physique. It results in compromised physical, psychological and social functioning.

Given the abovementioned argument, it is needed to investigate nutritional quality of life of men and women belonging to younger and older age groups. Though the awareness of importance of nutrition has increased, however there are still some people who are not very conscious about the impact of what they eat and how it effects on their quality of life. This study is a stepping stone towards creating awareness regarding impact of nutritional quality of life across gender and different age groups.

## Methods

A descriptive cross sectional research was conducted in Beaconhouse National University, Lahore. After getting approval from ethical review committee of Beaconhouse National University, a purposive sample of 200 participants including 100 younger adults with age range between 18 to 23 years and 100 older adults with age range between 50 to 60 years was included in the study. The duration of study was six months (December, 2015-June, 2016). The younger adult sample comprised of equal number of men (n = 50) and women (n = 50) from a private university. The older adult participants were parents of younger adult participants comprised of equal



number of men ( $n = 50$ ) and women ( $n = 50$ ). Parents who could comprehend English were approached; the undergraduate students and their parents were approached. Older adults who had the history of any chronic disease were not included. Likewise those younger adults who were on special diet either because of dieting or any specific health issues were also not included. The participants who had the history of eating disorders were not included as well. For assessment of nutritional quality of life, the Nutritional Quality of Life (NQoL) Instrument<sup>1</sup> was administered. It consists of 50 items in the form of statements. This instrument assesses six domains of nutritional quality of life: a) Food impact (9 items), b) Self-image (6 items), c) Psychological factor (10 items), d) Social/Interpersonal (7 items), e) Physical Functioning (9 items), f) Self-efficacy (9 items). Nutritional Knowledge Questionnaire was developed by researchers of present study in order to get information on the knowledge of nutritional value of food. It included questions regarding awareness of nutrition and consumption of food that includes all basic food components and nutrients. It consisted of 6 items inquiring the knowledge and preference to check for the important nutrients while selecting food. This questionnaire was pretested on younger and older adults ( $n = 20+20$ ). A self developed demographic information questionnaire was developed to collect some basic information which was required for the research like age, gender and educational status. Permission was obtained from University authorities to collect data. Younger adults studying in 1st and 2nd year of graduation were approached in the university for data collection. Informed consent was taken from the students to participate in the research. Parents of participants were also approached and requested to give their consent to participate in the study for data collection of older adults. They were assured regarding privacy of their responses and then the administration of the tools was initiated. A demographic form was given first to screen out some basic information about nutrition and the required variables followed by administration of nutritional quality of life scale. The maximum time that was used in administering the questionnaires was 25 to 30 minutes per participant.

## Results

Data was entered in SPSS version 21.0. It was

observed that mean age of younger adults was 19.17 ( $SD = 5.20$ ) and for older adults it was 48.17 with  $SD = 5.20$ . Majority of participants (76%) belonged to joint family system whereas few of them (24%) belonged to nuclear family system. Students studying in first and second year of graduation comprised sample for younger adults and older adults' mean education was 14.65 ( $SD = 2.61$ ).

Descriptive statistics and Chronbach Alpha was calculated for Nutritional Quality of Life (NQoL) Instrument and Nutritional Knowledge Questionnaire. For Nutritional Quality of Life (NQoL) Instrument, it was observed that all of the sub-scales and the overall scale show adequate reliability within the ranges  $\alpha = .68$  to  $.90$  except the sub-scale of self-image as its alpha co-efficient was  $\alpha = .54$  which is less than  $.60$ . This may be due to lesser number of items in this sub-scale as compared to the other sub-scales. According to Cronbach<sup>13</sup> if alpha reliability of a measure is less than  $.60$  then it is not reliable and satisfactory, therefore Self Image subscale of nutritional quality of life was omitted from the further analysis due to its inadequate reliability for our sample. The Nutritional Knowledge Questionnaire turned to be a reliable instrument with a good alpha reliability index  $\alpha = .74$ .

Table 1 shows that significant gender differences were observed in psychological and social impact of nutritional quality of life. In addition, Younger and older adults significantly differed on psychological and social impact, physical functioning and self efficacy domains of nutritional quality of life.

For psychological impact of nutritional quality of life, main effect of the age groups was significant showing that older age group scored higher on psychological factor of nutritional quality of life than the younger age group. Main effect of gender was significant as women scored higher as compared to men on the psychological factor of nutritional quality of life. However, the interaction of gender and age groups yielded insignificant results.

The mean score of psychological impact of food intake is higher for older men ( $M = 34.84$ ,  $SD = 7.47$ ) and women ( $M = 38.22$ ,  $SD = 6.08$ ) as compared to younger men ( $M = 31.32$ ,  $SD = 4.46$ ) and women ( $M = 33.26$ ,  $SD = 7.28$ ). It indicates that older adults are

**Table 1:** Two-Way Analysis of Variance Comparing the Food Impact of Nutritional Quality of Life Across Gender and Different Age Groups (N = 200)

| NQoL                 | Source       | SS     | MS     | F(df)           | p    |
|----------------------|--------------|--------|--------|-----------------|------|
| Food Impact          | Age group    | 19.84  | 19.84  | 0.78(1,196)     | .375 |
|                      | Gender       | 53.04  | 53.04  | 2.10(1,196)     | .148 |
|                      | Age x Gender | 45.12  | 45.12  | 1.79(1,196)     | .182 |
| Psychological Impact | Age groups   | 898.88 | 898.88 | 21.65***(1,196) | .000 |
|                      | Gender       | 353.78 | 353.78 | 8.52**(1,196)   | .004 |
|                      | Age x Gender | 25.92  | 25.92  | 0.62(1,196)     | .430 |
| Social Impact        | Age groups   | 158.42 | 158.42 | 5.61*(1,196)    | .019 |
|                      | Gender       | 626.58 | 626.58 | 22.21***(1,196) | .000 |
|                      | Age x Gender | 30.42  | 30.42  | 1.07(1,196)     | .300 |
| Physical Functioning | Age groups   | 114.00 | 114.00 | 4.52*(1,196)    | .035 |
|                      | Gender       | 2.20   | 2.20   | 0.08(1,196)     | .768 |
|                      | Age x Gender | 0.00   | 0.00   | 0.00(1,196)     | .989 |
| Self-Efficacy        | Age groups   | 544.50 | 544.50 | 11.77**(1,196)  | .001 |
|                      | Gender       | 162.00 | 162.00 | 3.50(1,196)     | .063 |
|                      | Age x Gender | 106.58 | 106.58 | 2.30(1,196)     | .131 |

Note: \*\*\*p < .001, \*\*p < .01, \*p < .05

Note: NQoL = Nutritional Quality of Life, SS= sum of square, MS= mean of square, df= degree of freedom, p= significance

more likely to perceive psychological impact of food intake than younger adults (Table 2).

Social impact of nutritional quality of life across age and gender was also significant (Table 1). It was observed that the main effect of the age groups was significant for social impact showing that older adults scored higher on social impact of nutritional quality of life than the younger adults. Main effect of gender was also significant as women scored higher as compared to men on the social impact of nutritional quality of life, however, the interaction of gender and age groups yielded insignificant results (Table 1). The mean score of social impact of food intake is higher for older men (M= 24.98, SD= 5.46) and women (M= 27.74, SD= 5.14) as compared to younger men (M= 22.42, SD= 5.32) and women (M= 26.74, SD= 5.31). It shows that older adults perceive more often the social impact of their nutritional quality of life than younger adults (Table 2).

Physical functioning impact of nutritional quality of

**Table 2:** Mean and Standard Deviation of the Food Impact of Nutritional Quality of Life Across Gender and different Age Groups (N=200)

| NQoL                 | Gender | Age Groups | n  | M     | SD   |
|----------------------|--------|------------|----|-------|------|
| Food Impact          | Men    | Younger    | 50 | 21.76 | 4.57 |
|                      |        | Older      | 50 | 21.44 | 5.11 |
|                      | Women  | Younger    | 50 | 19.78 | 5.10 |
|                      |        | Older      | 50 | 21.36 | 5.24 |
| Psychological Impact | Men    | Younger    | 50 | 31.32 | 4.46 |
|                      |        | Older      | 50 | 34.84 | 7.47 |
|                      | Women  | Younger    | 50 | 33.26 | 7.28 |
|                      |        | Older      | 50 | 38.22 | 6.08 |
| Social Impact        | Male   | Younger    | 50 | 22.42 | 5.32 |
|                      |        | Older      | 50 | 24.98 | 5.46 |
|                      | Female | Younger    | 50 | 26.74 | 5.31 |
|                      |        | Older      | 50 | 27.74 | 5.14 |
| Physical Functioning | Male   | Younger    | 50 | 23.74 | 4.68 |
|                      |        | Older      | 50 | 25.26 | 4.93 |
|                      | Female | Younger    | 50 | 23.54 | 4.66 |
|                      |        | Older      | 50 | 25.04 | 5.73 |
| Self-Efficacy        | Male   | Younger    | 50 | 23.04 | 6.34 |
|                      |        | Older      | 50 | 21.20 | 7.64 |
|                      | Female | Younger    | 50 | 22.70 | 6.57 |
|                      |        | Older      | 50 | 17.94 | 6.56 |

Note: NQoL = Nutritional Quality of Life

life showed significant differences across age groups (Table 3). It was observed that physical functioning impact of nutritional quality of life was significantly higher for older men (M = 23.74, SD = 4.68) and women (M= 23.54, SD= 4.66) as compared to younger men (M= 25.26, SD= 4.93) and women (M= 25.04, SD= 5.73) (Table 4). However, main effect of gender was not significant regarding physical functioning impact of nutritional quality of life, moreover, the interaction of gender and age groups also showed insignificant results.

It was observed that self efficacy impact of nutritional quality of life was significant across age groups (Table 3). The results showed that younger men (M= 23.04, SD= 6.34) and women (M=22.70, SD=6.57) scored significantly higher on self efficacy than older men (M=21.20, SD=7.64) and women (M=17.94, SD= 6.56) (Table 4). However, main effect of gender was not significant regarding self efficacy impact of nutritional quality of life, moreover, the interaction of gender and age groups also yielded insignificant results.

To examine gender and age group differences regarding knowledge of nutritional value of food,



two-way analysis of variance was applied. The results showed that the main effect of the age groups and gender was not significant regarding knowledge of nutritional value of food; moreover the interaction of gender and age groups yielded significant results (Table 3).

**Table 3:** Two-Way Analysis of Variance Comparing Knowledge of Nutritional Value of Food Across Gender and Different Age Groups

| Source       | SS     | MS     | F(df)        | p    |
|--------------|--------|--------|--------------|------|
| Age groups   | 63.84  | 63.84  | 0.99(1,196)  | .321 |
| Gender       | 126.40 | 126.40 | 1.96(1,196)  | .163 |
| Age x Gender | 285.60 | 285.60 | 4.43*(1,196) | .037 |

Note: \*p < .05

Note: SS= sum of square, MS= mean of square, df = degree of freedom, p= significance

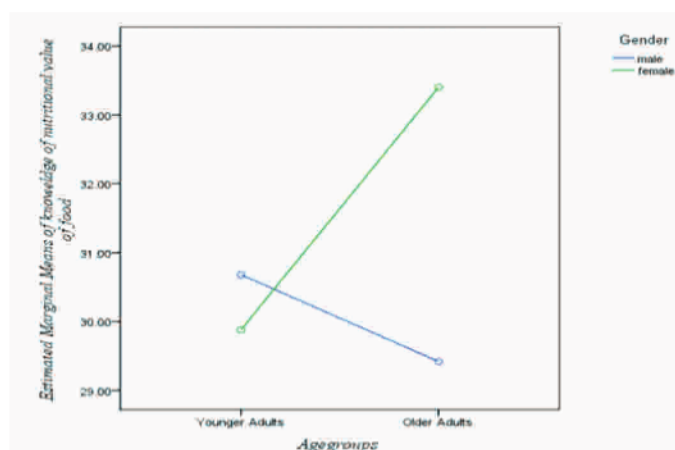
**Table 4:** Mean and Standard Deviation of Knowledge of Nutritional Value of Food Across Gender and Different Age Groups

| Gender | Age Groups | n  | M     | SD    |
|--------|------------|----|-------|-------|
| Male   | Younger    | 50 | 30.68 | 4.18  |
|        | Older      | 50 | 29.42 | 3.82  |
| Female | Younger    | 50 | 29.88 | 4.64  |
|        | Older      | 50 | 33.40 | 14.28 |

Note: \*p < .05

Note: SS= sum of square, MS= mean of square, df = degree of freedom, p= significance

The mean score of nutritional knowledge of food is higher in younger men than the older men. Further, it is higher in older women than younger women (Table 4). It indicates that younger men and older women are more often concerned with seeking information related to nutritional value of food they are going to intake. Figure 4.1 is also showing the significance of interaction described above.



**Figure 1:** Graph Showing Interaction Between

Gender and Different Age Groups Regarding knowledge of Nutritional Value of Food.

## Discussion

The results of the study proposed that the nutritional quality of life is higher among older adults as compared to younger adults. A difference among men and women was seen as women scored higher than men on different sub-scales of nutritional quality of life. Additional findings were also incorporated regarding knowledge of nutritional value of food. Gender differences were observed and young men were found to be keenly concerned regarding the nutritional value of food as compared to women, which is not mostly seen in our society.

The reason behind the finding could be that younger men are more conscious about their physique build and fitness. It is due to this reason that they focus more on calorie count and quality. On the contrary older women are more concerned about their nutritional food values as it is common in our society to get health conscious in old age.

It was hypothesized that there are gender differences in the food impact of nutritional quality of life among younger and older adults. This hypothesis was rejected due to the reason that in older adults it is not the age or the food that has the impact on their lives; rather it's the energy which they have. It may be so as they are not going through any pain or emotional problem that has an impact on their life.<sup>[14]</sup>

Another study done in the same context also reported similar findings by concluding that age or gender does not have an impact on food or nutrition of older adults rather it's the health that has an impact. Besides this, environment and living style also have an impact on life. People who live alone are more likely to choose diet having low nutritive value in contrast to those who live with a partner or family. Therefore, the current study along with above quoted researches concluded same results that there is no significant impact of gender and age groups on food impact of nutritional quality of life.<sup>[15]</sup>

It was hypothesized that there would be gender differences in the psychological factor of Nutritional quality of life among younger adults and older adults. This hypothesis was accepted as the results are in line with the existing body of research. It was concluded

that younger adults who did not adopt a healthy lifestyle were more prone to stress as it affected their eating habits and consequently their quality of life. They became more vulnerable to depression, poor social interaction, low self-esteem and poor academic performance that resulted in hampering of nutritional quality of life of women more as compared to men.<sup>[16,17]</sup>

Moreover, this study also investigated gender differences in the social impact of Nutritional quality of life among younger adults and older adults. This hypothesis was supported as the results are in line with the findings. It was also found that young adult men are very outgoing and they have more social impact on their lives as they mostly live with friends (77.6%). It is a course of action which impacts the dietary choices of an individual. Moreover having meals together and enjoying with friends is a very common activity of men in our society. It is a culture among both younger and older adults, which produces an impact on nutrition and quality of life as compare to women. Hence gender differences do exist when it comes to the social impact of nutritional quality of life.<sup>[18]</sup>

Furthermore, the researchers also hypothesized that there are gender differences in the physical functioning of Nutritional quality of life among younger adults and older adults. This hypothesis was partially accepted. A possible explanation for these results may be a study conducted in Malaysia on both men and women whose findings were on same lines showing insignificant gender differences. The study also found out that there are no gender differences when it comes to the impact of physical functioning on nutritional quality of life. Additionally lack of nutrients has an impact on the physical performance, causing different health issues like depression, anemia and fatigue which results in effecting the physical functioning of nutritional quality of life, other than gender.<sup>[19]</sup>

Other possible explanation for the result is a study<sup>[20]</sup> whose findings were in same lines of our results showing significant differences across age groups. It suggested that younger adults as compared to older adults are adequately active to achieve health benefits from the physical functioning that has a positive impact on their nutritional quality of life. However, older adults are less likely to participate in sufficient

physical activity than younger adults because of age and health factors. It has a great impact on the nutritional quality of life of older adults.

It was also hypothesized that there are gender differences in the self-efficacy of Nutritional quality of life among younger adults and older adults. This hypothesis was partially accepted. A possible explanation to these results may be a study conducted<sup>[21]</sup> on females, it reported significantly higher self-efficacy in their ability to choose healthy foods, such as those high in calcium and low in fat, compared to males.

The results are in line with another study<sup>[22]</sup> which concluded that self-efficacy has a well-established beneficial impact on the health and health behaviors of younger adults as well as older adults. They also found that older adults who had high self-efficacy had lower health issues and better health. They concluded that to improve health status the self-efficacy should be improved as it has an impact on our health, diet, food and nutritional quality of life. The findings shows significant differences between the age groups as hypothesized.

## Conclusion

This study concluded that psychological, social and physical functioning impact of Nutritional Quality of Life (NQoL) was higher for older adults than for younger adults. Conversely, self efficacy impact of NQoL was higher for younger adults than for older adults. Further, psychological and social impact of NQoL was higher for women than men. It was interesting to observe that younger men had more knowledge of nutritional value of food than older men. In contrast older women showed more concern with nutritional knowledge than younger women. Future research should focus on broader sample as current study was limited to 1st year and 2nd year undergraduate students and their parents. In addition, other variables like eating patterns should be included to get a clearer picture about nutritional quality of life.

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**Conflict of Interest:** None

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