

## Factors Influencing Food Choice in the Elderly Mauritian Population

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### Abstract

According to the official Mauritian demographic statistics the ageing society is a fast growing segment of the Mauritian population. This particular age group is most susceptible to many health risks from a nutrient poor diet. There are multiple interacting factors: individual (personal), social and environmental that influence eating behaviors. Therefore, public health professionals need to be aware of the importance of these factors influencing food choice in order to help people make healthful food and beverage choices necessary for maintaining an optimal health status in the elderly. Studies assessing past and current overall dietary patterns are limited in the elderly in Mauritius. To address this lack of information, a nutritional study was conducted to investigate the various possible factors and their relative importance in influencing food choices and thus food intake of the elderly people in Mauritius.

A cross-sectional nutritional survey was carried out in different regions around the island in December 2004. A random sample (n=60) of the elderly population (58+ years) was interviewed face to face. A food-frequency questionnaire (FFQ) was administered to assess the food choice and dietary intake of the elderly. The FFQ included questions pertaining to the investigation of the degree of importance which various factors such as taste of food, routine, media, culture, ease of food availability, company or peer at meal times and nutritional knowledge had on the food choice of the elderly participants. Five degrees of importance were allocated: “*extremely important*”, “*very important*”, “*important*”, “*slightly important*” and “*not important at all*” to which quantitative scores were attributed. Overall scores reflecting the relative degree of importance of the 7 factors were calculated by summing up the five categories together.

The statistical analysis of data revealed that the order of importance of the factors that influenced food choice was ***culture*** (93.3 %) followed by ***taste*** (90.0%), ***routine*** (85.1%),

*nutritional knowledge* (75.0%) and *ease of food availability* (71.7%). *Company or peer at meal times* and *media* accounted for only 31.7% and 11.6 %, respectively.

Only the factor of *taste* influencing food choice was significantly different between the two sexes (significant value=0.02,  $p<0.05$ ).

Considering our results and knowing that food choices influence food intake considerably, care providers need to consider all factors involved in the total environment of the senior citizens to ensure adequate nutrition in the elderly. Cultural background and taste are most important factors to be respected in this population. The factor “routine” influences food choice to a larger extent than “nutritional knowledge”, suggesting that nutrition education need to be provided to this section of the population to promote varied food intake. Recognition of social and health factors associated with the elderly nutritional status will allow appropriate intervention to enhance the quality of life of the elderly.

**Keywords:** Food choice, factors, elderly, Mauritius

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## 1. INTRODUCTION

The nutritional status of the elderly reflects current dietary practices, which are influenced by a variety of *physiological* and *psychosocial* factors. The physiological parameters are, in turn, influenced by both heredity and environment. Nutritional factors influence not only growth and development before maturity but also the ageing of the mature individual. In the United States diseases such as stroke, cancer, diabetes and liver disease are associated with poor food choices and overeating (Goodwin, 1989). Food choices are influenced by factors such as social influences, food availability and cost, culture, nutritional knowledge and media. The importance of these factors in promoting proper food choices remains unclear and needs to be investigated.

In old people it is often difficult to distinguish the effects of nutritional factors that are operating for the first time in old age and those that may have influenced nutritional status many years ago (Dickerson *et al.*, 1988). Psychosocial factors affecting food choice are now recognized as important. Cultural practices and traditions, for instance, influence the actual choices that people make (FAO, 1997).

Today's elderly population in the world represent a particular group that varies widely in chronological age (65 to 115 years), income level, educational level, lifestyle, dietary habits, and health status. Some individuals, for example, are healthy and active at over 90 years of age, whereas others are vulnerable at an earlier age by conditions, such as impaired vision and chronic and cardiovascular diseases, which necessitate dietary modifications (Lewis, 1986). Chiem (2006) reported that cardiovascular disease is the leading cause of death across all ethnic groups. Moreover, socioeconomic status is associated with dietary choices. A study by Morales (2002) revealed that health-related behaviours such as smoking cigarettes, being overweight and being physically inactive are more common among persons with a lower socioeconomic status than among those with a higher socioeconomic status. Lower income

individuals are less likely to buy foods that are low in fat and sugar than those of higher status (Turrell *et al.*, 2002). Research has shown that social acceptability of particular foods and changes in dietary intake influence food choice (Satia *et al.*, 2001). In addition, the ease of food availability and cost of food are also the predictors of food intake (Kristal *et al.*, 2001). Numerous sources indicate that many elderly fail to get the amounts and types of food necessary to meet essential energy and nutrient needs. In later years physiological, psychological, and economical changes contribute to poor nutrition among the elderly. Accordingly, the choice of food made by the elderly people requires an approach to address the wide range of factors contributing to healthy nutrient intakes.

With the increasing number of elderly in Mauritius and the occurrence of non communicable diseases amongst them, it appeared that there was a need to investigate the different factors that have an effect on the choice of food that our seniors make. Therefore, this study aims to investigate the factors influencing the food choice in the senior citizens of Mauritius.

## **2. MATERIALS AND METHODS**

### **Experimental design and Subjects**

A dietary survey was carried out between October 2004 and December 2004 around the island of Mauritius. 43.3% of our study population was from rural areas while 56.7% were from urban areas to be representative of the Mauritian population. A total of 60 individuals (23 elderly men and 37 elderly women) participated in the study. All the participants were 58+ years of age. These elderly people belonged to an average socioeconomic level.

In order for the subjects to be able to participate in the study, a criteria-inclusion scheme was followed. The participants were required to be reliable, willing to take part, taking no medications that might interfere with the study results, and to have a regular meal pattern. They all lived in their homes. Before the study began, the purpose and objectives were carefully explained to the subjects. Informed consents were obtained from them.

### **Questionnaire and Data Collection**

Information on the foods and beverages consumed was collected by an interviewer-administered food-frequency questionnaire (FFQ). The questionnaire consisted of 9 pages and contained 47 questions. It was designed to elicit information regarding the eating habits of the elderly subjects, taking into account socio-demographic characteristics, food consumption patterns, lifestyles, health status and the different factors affecting their food choice. After a pre-testing study carried out with a sub sample of ten elderly people- five from rural areas and five from urban areas, we found that there were seven factors that most commonly affected the food choice of the Mauritian elderly. In order to assess the effect of each factor, five degrees of importance were allocated to them: “*extremely important*”, “*very important*”, “*important*”, “*slightly important*” and “*not important at all*” to which quantitative scores were attributed. Overall scores reflecting the relative degree of importance of the 7 factors were calculated by summing up the five categories together. Table 1 shows the seven factors assessed and the degree of importance allocated to each factor.

### **Statistical analysis**

All statistical analyses were performed with the use of SPSS for Windows (version 10.0; SPSS, Inc, Chicago). Statistical T test was performed to determine whether there was any difference between the two sexes and the variable/s under consideration. For all statistical analyses, P values of <0.05 were considered statistically significant. Excel was used for graphical representations.

## **3. RESULTS**

The seven factors were integrated into the FFQ to investigate how they influence the food choice of the elderly participants. The statistical analysis of pooled data revealed that the order of importance of the factors that influenced food choice was *culture* (93.3 %) followed by *taste* (90.0%), *routine* (85.1%), *nutritional knowledge* (75.0%) and *ease of food availability* (71.7%). *Company or peer at meal times* and *media* accounted for 31.7% and 11.6 %, respectively (Table 2., Figure 1).

Only the factor of *taste* influencing food choice was significantly different between the two sexes (significant value=0.02, p<0.05).

Personal and environmental factors influenced food choices to various degrees. Results are graphically represented in Figures 3, 4, 5, 6 7, 8, and 9.

Figure 3 shows *culture* was an extremely important factor (50%) that affects an elderly participant food choice. It can also be noted that 23.3% and 20% responded to the “Very important” category response, respectively. Of the study population, 36.7% of the respondents considered *taste* to be a very important factor that influences food choice (Figure 4). We also note that 30% responded to the “Extremely important” category response. Statistically significant difference was found to exist between the two sexes and taste (significant value=0.02, p<0.05). The majority of respondents agreed that *routine* is an important factor that influences their food choice. *Media* seems to have no effect at all on the subjects’ food choice (43.3%). Only 5% of respondents considered *media* to be extremely important for their food choice. Moreover, the *ease of food availability* was very important for 41.7% of the study population.

*Peer group at meal times* has no influence on the food choice of the elderly individuals (80%). 8.3% acceded that peer at meal times is slightly important for their food choice. *Nutritional knowledge* seems to be a very important factor (31.7%) that influences the food choice of the respondents; 30% of the subjects agreed to the “Important” category response and 13.3% to the “Extremely Important” category response. *Nutritional knowledge* was slightly important for 23.3% of the study population. We note that there is no difference between the two sexes and the factors “routine”, “media”, “easily available”, “peer at meal times”, “culture”, and “nutritional knowledge”, since the p-value obtained during a T-test was greater than 0.05.

#### **4. DISCUSSION**

Multiple interacting psychosocial factors influence eating behaviours in the rapidly expanding ageing population. This has a number of socioeconomic implications. Providing information on the socioeconomic and other factors to nutrient intake, and thus choice of food, is basic to improving the health and well-being of the elderly. This justifies the study undertaken to assess the factors influencing food choices in a sample of Mauritian elderly population aged 58+ years of age.

Food choice probably differs as much among individuals of the same cultural background as they do generally between cultures (Tur *et al.*, 2004). Cultural perceptions of which foods are “good” and “bad” have been shown to influence food choices (Furst *et al.*, 1996). This is consistent with our results since 93.3% of our study population revealed that culture has an impact on the choice of food they make in their daily life. Moreover, 50% of our respondents claimed that culture was an extremely important factor in affecting their food choice. This may be related to ethical concerns about food, such as using animal products (Goodwin, 1989). The culture and religion of the family, as well as the perceived social acceptability of food were identified as factors in the food choices of adolescents (Neumark-Sztainer *et al.*, 1999). In the Mauritian context, the elderly people seems to be more conscientious about their diet as this would include avoidance of foods associated with moral and religious concerns as determined by individual perceptions of acceptability.

Studies have emphasized the importance of taste and food preferences in food choice (Drewnowski, 1997). Eertmans *et al.* (2001) hypothesized that food likes and dislikes are central to the development and maintenance of eating behaviours. Our study supports this argument because 90.0% of our elderly participants mentioned that taste did have an influence on their food choice. In addition, 36.7% of the study sample perceived taste to be a very important factor that affected their choice of food. It is known that usually, older adults have a decreased appetite. Food may become less appealing or difficult to eat as less saliva is produced and medication or disease causes the senses of smell and taste to diminish amongst others (Murphy, 1989).

The salty as well as the sweet taste are characteristics of traditional Mauritian meals. It can be observed in Figure 2 that more female participants consumed sweet foods (66.7%) than their male counterparts (33.3%). Statistical analysis revealed that there was an association between higher sweet food consumption by the female than the male respondents (25% vs. 15% respectively) and their diabetic conditions. This may be a plausible explanation why more females suffered from this disease as compared to the males. Similarly, more elderly women (61.2%) than elderly men (37.9%) reported consuming salty foods and statistically more females suffered from hypertension than their male counterparts. Our data is consistent with what has been reported elsewhere, i.e. the frequent use of added salt promotes the risk of hypertension (Thierney *et al.*, 1999).

The third most important factor that affects food choice in the elderly in Mauritius was routine (85.1%). The majority of study participants (36.7%) claimed that eating by routine is an important factor in influencing their food choice. Furthermore, 71.7% of our subjects agreed that the ease of food availability had an effect on their food choices. Elderly people are more likely to stick to their traditional food rather than choosing new food products.

Of the study population, 75.0% stated that nutritional knowledge influenced their food choices and this is supported by the fact that 40.0% and 41.7% of the respondents had studied

up to primary and secondary level, respectively. Therefore, it can be stated that education, and thus nutritional knowledge, were positively associated with the participants' agreement that they were conscientious about their diet to prevent disease. This result is in accordance with other international studies as reported by Schlettwein-Gsell (1992) who found that some elderly people may change their food choices due to health reasons.

The levels of education, as stated by our participants, could provide knowledge and cognitive assets that are disease preventive. More knowledge of nutritionally-related diseases, or other knowledge not directly related to health may explain why 75.0% of our subjects reported that nutritional knowledge had an influence on their choice of food.

A study involving older men and women identified one social benefit of eating: the pleasure of eating together. The study showed that women living alone tended to simplify cooking and eating, while those with company perceived meals as a pleasure (Rurik, 2006). Moreover, ratios of adults who live alone have increased dramatically in the past decades, and there is concern that these may have a particular poor dietary quality (Davis *et al.*, 2000). However, it can be said that the above arguments do not apply to the Mauritian context as a whole since only 31.7% of the respondents reported that peer at meal times influenced their food choices. This statement is supported by the fact that 80% of our study population responded to the "Not at all" category for this factor.

Finally, it was observed that media (11.6%) was the least important factor in influencing the food choice in the Mauritian elderly people. A study reported that supplement users, as well as non-users, perceived the media to be a powerful influence on supplement use (Conner *et al.*, 2003). There is concern that the numerous, diverse messages about diet and health available through the media, promotions, and advertising may confuse consumers and cause them to disregard all health-related information. Nevertheless, this is not supported by our study because the majority of our study participants (43.3%) declared that media is not important at all in influencing the choice of food they make.

## 5. CONCLUSION

Food choice in the elderly is influenced by a combination of factors including a desire to prevent disease and improve the quality of life; culture; taste; and social reasons. Closing the gap between actual and optimal diets requires an understanding of the multiple factors influencing food choices in the elderly. This indicates that health programs aimed towards improving the diet of older Mauritians must take a multifactorial approach and consider the potential health, interpersonal, and social benefits of consuming a healthy diet. Nutrition education programs should emphasize the potential of a good diet to improve the quality of life, prevent disease and increase longevity. Moreover, with this knowledge, health professionals can develop effective nutrition interventions that reduce barriers and create more opportunities to engage in the healthy choices of food.

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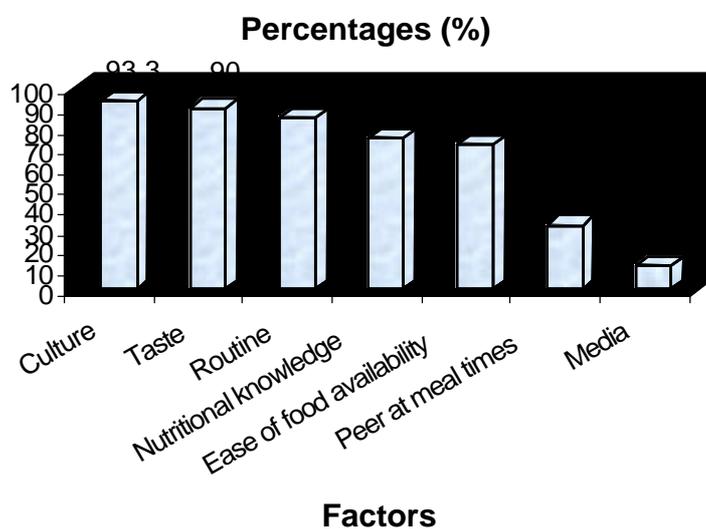
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**Table 1:** Factors assessed and the degree of importance allocated to each factor

Factor	Not important at all	Slightly important	Important	Very important	Extremely important
Taste					
Routine					
Media					
Easily available					
Peer group					
Culture					
Nutritional knowledge					

**Table 2:** Gradation of the importance of factors influencing food choice in the elderly in Mauritius

Factors	Percentages (%)
Culture	93.3
Taste	90.0
Routine	85.1
Nutritional knowledge	75.0
Ease of food availability	71.7
Peer at meal times	31.7
Media	11.6



**Figure 1:** Factors influencing food choice in the Mauritian elderly people

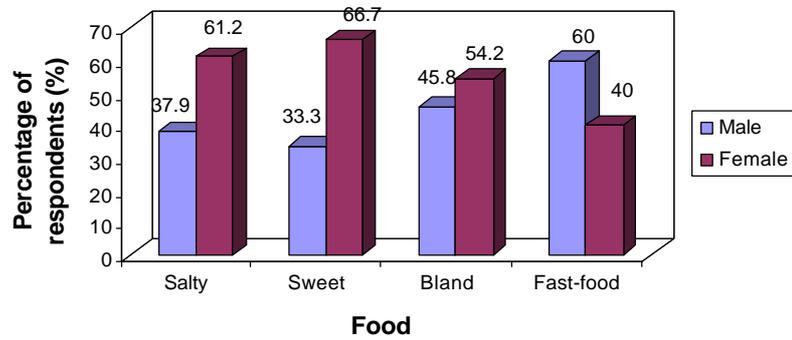


Figure 2: Type of foods consumed by elderly subjects.

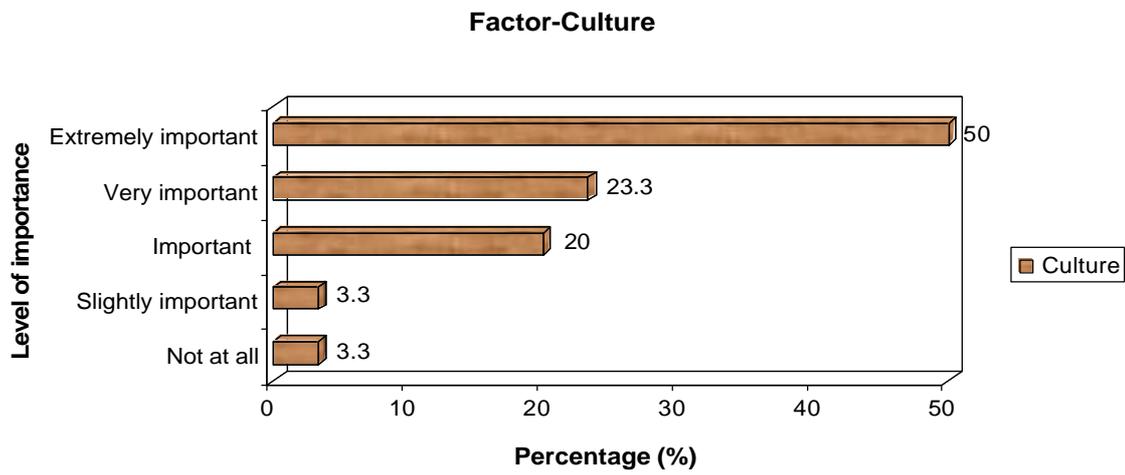
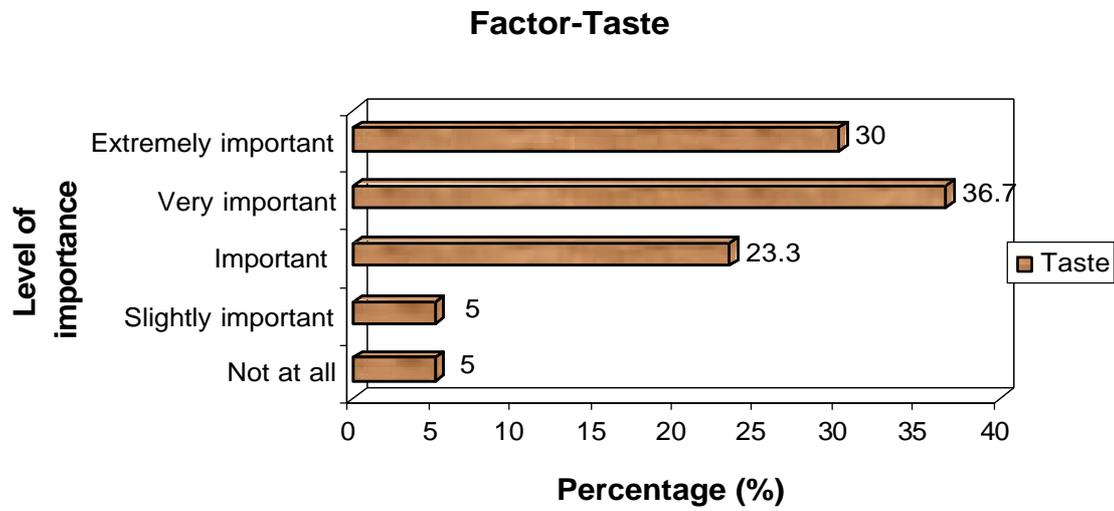
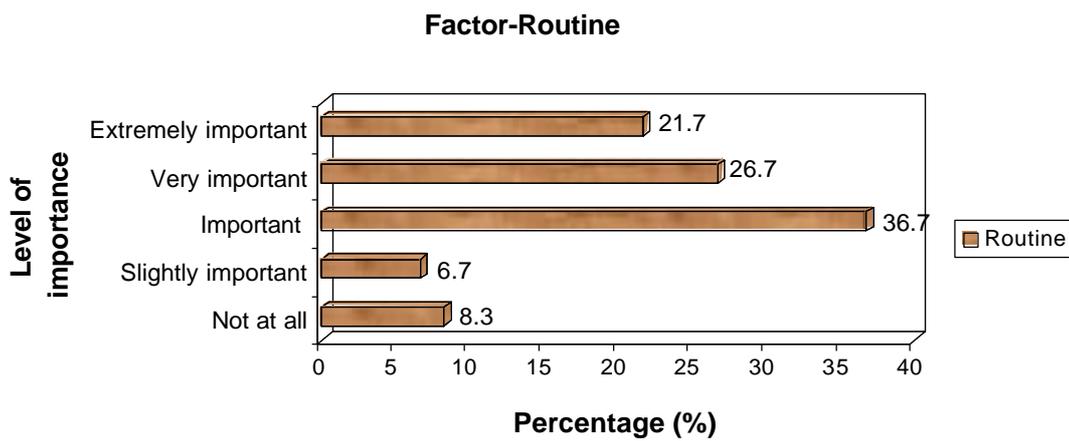


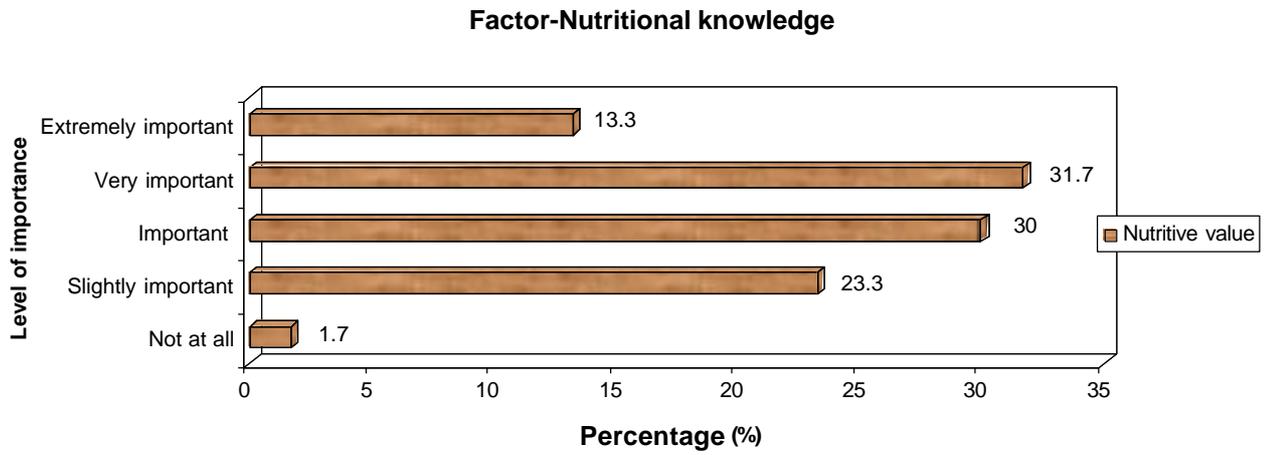
Figure 3: Level of importance of the factor “culture” in influencing food choice



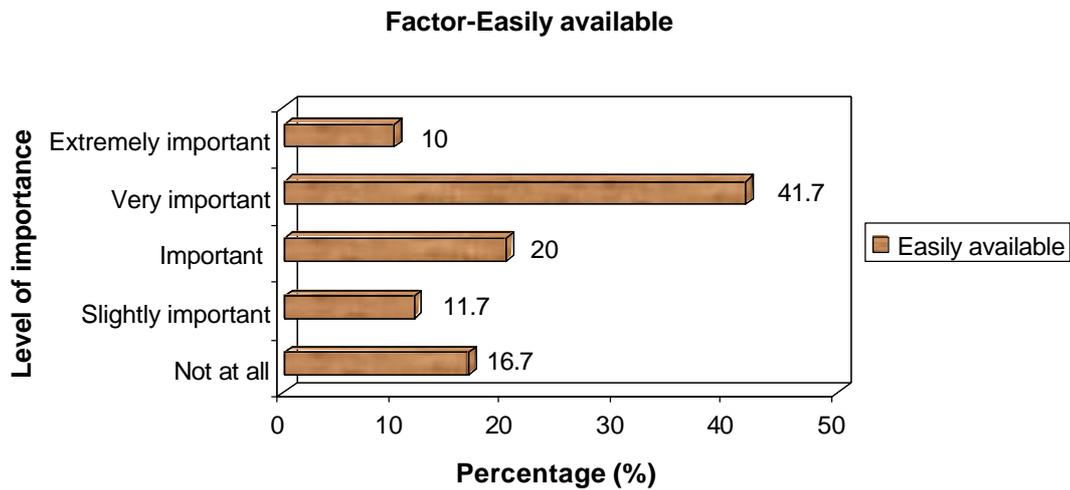
**Figure 4:** Level of importance of the factor “taste” in influencing food choice



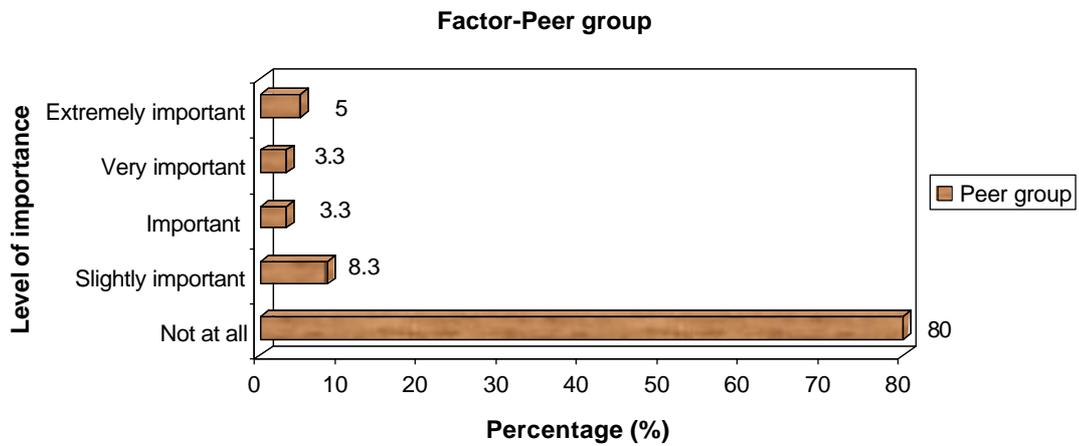
**Figure 5:** Level of importance of the factor “routine” in influencing food choice



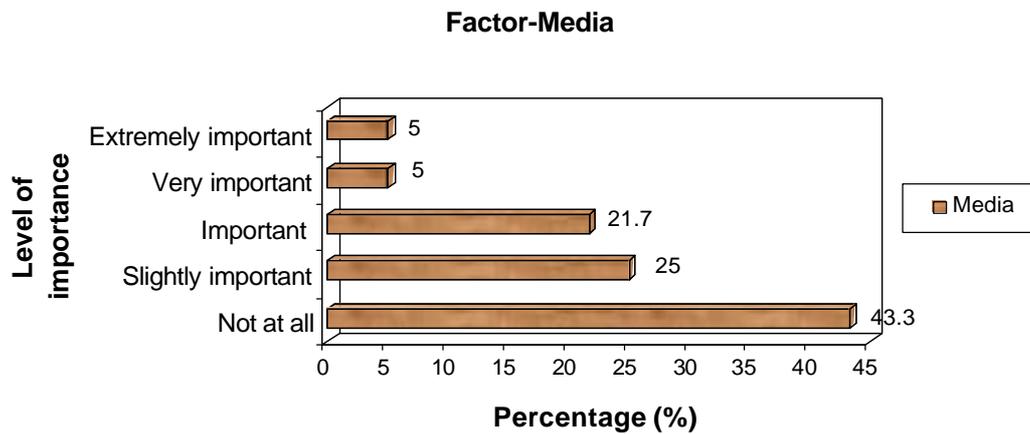
**Figure 6:** Level of importance of the factor “nutritional knowledge” in influencing food choice



**Figure 7:** Level of importance of the factor “ease of food availability” in influencing food choice



**Figure 8:** Level of importance of the factor “peer at meal times” in influencing food choice



**Figure 9:** Level of importance of the factor “media” in influencing food choice