

# NURTURE

Research Journal for Human Civilization

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PAKISTAN HOME ECONOMICS ASSOCIATION

**HOME ECONOMICS** as an activity has been present ever since civilization lead to establishment of homes. The quality of human civilization undoubtedly depends on the quality of homes. Traditionally learning of most of the human activities and occupations depended on informal transfer of knowledge and expertise from one generation to another. With the accumulation of a large amount of knowledge disciplines emerged and acquisition of expertise became dependant on formal education. However it is quite astonishing that due attention has not been paid by education policy makers to assure planned and formal transfer of knowledge and expertise for the oldest and most important of all professions that is home-making.

**THE OBJECTIVE OF HOME ECONOMICS EDUCATION** is betterment of individual, family and community. Its strategy is to extract usable subject matter from physical and social sciences and arts and deliver it to consumers, so as to empower the consumers i.e. individuals families and communities, to make judicious decisions in their daily life. Home economics recognize homes as the foundation of human development and integrity of family as an inevitable requisite for the establishment of homes. Home economics means: making best use of available knowledge and skills for the optimum functioning of homes and betterment of family members.

The need for home making expertise never diminishes. Regardless of family members employment or education they need a place to rest retires, refresh, grow, live and die. Human civilization cannot survive without these units. Strength of civilization depends on the strength of these units called homes. No matter how many science and technology experts a country has if these units are not utilizing the outputs of science and technology in an appropriate manner peace and prosperity are impossible. Home economics as a discipline functions to extract usable information from various social and physical sciences and delivers it to the profession of home making, and thus strengthens and empowers home makers.

**PAKISTAN HOME ECONOMICS ASSOCIATION** was formed in 1956 to promote home economics in Pakistan. In spite of several hurdles home economists succeeded in retaining the status of home economics. The challenges ahead are to promote research so as to provide evidence based, up-to-date knowledge to learners and practitioners; and to provide advocacy for the significance of the discipline.

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# NURTURE

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**Prof. Dr Rubina Hakeem**

**Principal Rana Liaqat Ali Khan Government College of Home Economics Karachi Pakistan.**

**email: rubina.hakeem@gmail.com**

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## “CLEANING OF LAVATORY- AN IMPORTANT TASK”

Marja Aulanko

Department of Teacher Education, University of Helsinki Finland

marja.aulanko@helsinki.fi

### ABSTRACT

A lavatory is a challenging cleaning object. The space is often rather small, working postures are inconvenient and dirt is disgusting. The aim of this research was to find out what people think about lavatory cleaning. The main focus was on young adults. The material consists of the writing of the first-year university students and students in a home economics school. The material was analysed using content analysis, which showed that in lavatory cleaning there are two different orientations: work order orientation and dirt orientation.

*Keywords: lavatory, house cleaning, work order orientation, dirt orientation*

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### INTRODUCTION:

The lavatory is a very important place in the home and everywhere. A clean lavatory gives plenty of comfort. Hygienic factors are very important in sanitary facilities for health reasons, but poor maintenance decreases the active service life of surface materials. Public toilets especially are often dirty, and the idea of dirt is connected with lavatories everywhere. In lavatory cleaning, harmful microbes are often emphasized. Besides microbiological factors in lavatory cleaning, there are many more points of view than one might imagine. In this paper, lavatory cleaning is examined from points of view other than the microbiological.

#### The Lavatory as a Space

A lavatory is a necessity in every home and every workplace. The qualities of these spaces vary according to the age of buildings and the habits and values of a society. A lavatory can be small and stuffy, but it can also be large and luxurious. The surface materials vary from painted surfaces to plastic, ceramic tiles and stone. The facilities vary depending on needs and economic possibilities. In western countries a toilet seat and a washbasin are the most essential fittings. In addition, there are other objects that influence cleaning, for example, a floor drain, pipe systems, a radiator, skirting, different dispensers, ventilators, hooks, a litter basket, a window, shelves, cupboards, indoor plants, and decorations. According to (Gunnarsson and Olsson, 1968) medical needs, inhabitants' wishes, manufacturers' wishes and demands of society are things that must be taken into account in evaluating the quality of bathrooms. (Linn, 1985).

#### Lavatory Cleaning as a Job

The most important object to be cleaned is the

toilet seat. In most lavatories, there is also a washbasin and a mirror. Depending on the space and requirements, the lavatory space may be fitted with a mirror, shelves and cupboards. When a lavatory is cleaned regularly, a slightly alkaline detergent (pH value 8–10) is often sufficient. If lime encrustations are found, an acidic detergent is needed now and then. However, disinfectants are needed only in exceptional cases. It is important that there be specific tools designated for lavatory cleaning, which are used only in the lavatory space so that microbes will not be transferred to other spaces. It must be stated that a lavatory is a unique place as a cleaning object. Dirt is very special in comparison with that of other places. It is important to emphasize lavatory cleaning as such without the generalization of all cleaning work.

Ideas about lavatory cleaning differ, especially with regards to work order and the point at which the toilet seat should be cleaned. However, it is sensible first to flush the toilet, then to add the cleaning solution into the toilet bowl and let the solution soak the grime. Once the exterior of the toilet seat has been cleaned, the bowl can be scrubbed. According to the Finnish cleaning standard 13127 A (VVM, 1971b), it takes 1.0 minutes to clean a toilet seat that is normally dirty. If the toilet seat is very dirty, the cleaning takes 1.5 minutes, and if it is terribly dirty, the cleaning requires 2.5 minutes.

The guidelines for cleaning a washbasin are not uniform either. In cleaning of a washbasin, common sense must be used; depending on the use of the washbasin, the worst dirt is not in the same area every time. Sometimes the exterior is very dirty; other times it may not be necessary to clean the exterior as often as the interior of the basin. According to the Finnish cleaning standard

13125 A (VVM, 1971a), it takes 1.0 minute to clean a washbasin. If it is very dirty, it takes 1.5 minutes, and if it is terribly dirty, the time needed is 2.2 minutes. It takes 0.45 minutes to clean a mirror. All toilet bowls and washbasins are not similar. Some constructions are very difficult to keep clean.

### **Working Postures**

Lavatory cleaning is often difficult because the room is so small. Because of small corners and narrow spaces, inconvenient postures must often be used. (Linn, 1985) has found in her doctoral dissertation that people mainly use four postures when they clean a toilet seat:

- A bent-knee posture, often one leg in front of the other;
- A posture with one knee on the floor;
- A posture resting on both knees with the body bent forward, supported by one hand; and
- Bending from the waist with the legs straight or almost straight.

A bent posture is common in toilet cleaning, which is very troublesome for the human back. Postures two and three above are better, but they are not very common. According to (Lagerspetz 2002), our behaviour reflects our ideas about the properties of an object. It is natural to think about dirt in connection with toilet seats and no one wants that kind of dirt near one's face. For this reason the working posture is often poor. Another reason may be a wet and dirty floor.

To avoid the physical costs of work, it is important to avoid bent and twisted postures. (Steidl and Bratton, 1968) states in their classic *Work in the Home* that an untrained worker often works against her body rather than letting her body work for her. When a worker is untrained, even light work is tiring if the body is used in the wrong way. Thus, domestic tasks should be practiced, even when they are thought to be very simple. Poor layout in the lavatory may compel people to work in poor postures (Linn, 1985), but a skilled person is able to develop a working method that strains the body as little as possible. In professional cleaning, bent and twisted postures are common and pose a health risk (Krüger, Louhevaara, Nielsen & Schneider, 1997). At home, working skills are often on a lower level, which also means bigger workloads and unfavourable working postures. For safety reasons it is important to use one's body in the correct way.

Correct equipment choices also help. Using

equipment requires an ability to coordinate the movements of the body together with a tool. A tool is the extension of the body. (Parviainen, 2006). (Bullinger, Solf and Stübler 1984) speak about the importance of motion in a functional and anatomic sense, meaning that work performance should be ergonomically favourable. It is thus important to simplify one's work. The correct work order and the overlapping of different tasks demand a clear understanding of the whole and the system behind it. (Gross, Crandall and Knoll, 1973) see that the simplification of work has greater significance in a household than in an industry. It frees up more time for the family.

### **Characteristics of Lavatory Cleaning**

Besides narrow spaces and inconvenient working postures, lavatory cleaning involves dirt. According to (Lagerspetz, 2006), every object has its own way of being dirty or clean. Lavatory dirt can be visible or invisible. Visible dirt is unpleasant if it differs from the average kind of dirt found in rooms. Visible dirt in a toilet bowl is disgusting, and for this reason it is easy to see the need for cleaning. However, invisible dirt is injurious and therefore insidious. The general principle is that the cleaning operations should be performed in aseptic order or from clean surfaces to dirty ones. When the aseptic order is followed, harmful microbes are not transferred to clean areas. As for the toilet seat, the aseptic order is not always the same.

The dirtiest area is the interior of the toilet bowl, but the dirtiness of the exterior is very much determined by the number of users and their behaviour in the toilet space. In a similar way, there are cleaner and dirtier points in a washbasin. It is important to note that taps, knobs, and grips are insidious objects. Although they are often bright, they can be polluted by invisible dirt.

According to (Stübler, 1972) there are macro and micro shares in tasks. The main task is like a project, which means that a whole is put into practice. The scale of these shares can vary. The micro shares are an essential part of the whole. The cleaning of a lavatory may be a main task, while the cleaning of the toilet bowl or washbasin are the micro shares. In the same way the cleaning of a toilet bowl may be seen as a main task, and in this case the wiping of the rim of the bowl is a micro task. (Shove, 2003) states that one

way to consider cleanliness is to think about it as a composite service that consists of different operations according to the situation.

(Engeström and Engeström, 1982) states that everyone performs cleaning tasks in their own order. However, it is important to identify strategic dirt, be aware of it and perform a task according to the demands of the situation. Working must not cause any hygienic risk. Individual habits and preferences influence choices, and it is possible that a sensible work order is not always considered; then again, the average individual may not even be aware of the work order. When the whole of work involves several tasks, it means that a worker must change work objects. Simultaneously, preparations and concluding tasks must be involved. (Järvinen, 1991). For example, the cleaning of a washbasin, a toilet bowl and a floor are different tasks, and the hygienic situation and the correct work order should be taken into account.

#### **Lavatory Cleaning Demands Broad Understanding**

A toilet is a very important part of the home and of public spaces. Its impact extends in many directions. (Venkula, 1993) speaks about vertical, horizontal, substantial, and memorial contexts, which are connected with routine and skilful performance. A vertical level means understanding the reasons for something. When a lavatory is clean, it is understood that cleanliness is important for hygiene and safety reasons. If cleanliness is neglected, hygienic safety is endangered. A horizontal level means that an object or situation has connections with matters around it. A clean lavatory is seen as a pleasant part of the home. On a substantial level people understand why certain types of chemicals and equipment are used and why a lavatory needs its own cleaning equipment. In a memorial context, people remember how untidy public toilets may be and are not willing to accept the same level of cleanliness in their homes. Connections with different contexts are important learning factors. They encourage reasoning, which produces useful knowledge. The working situation should be understood as a whole. (Löfström, 2005) speaks on situational interest which means the interaction between an individual and the environment. It is important to understand the influence of separate performances on other activities and on hygiene.

The vertical factor – the understanding of contexts – is important in the practice of a job. If a job contains many phases and different tasks, it is not possible to put it into practice in the correct way only by repeating the task. Rather, the knowledge of the correct work order and the relationship of different elements are needed. According to (Rauramo, 2004), education alone does not make people skilful; long professional experience is also needed. A part of skills and knowledge is created through practical experience, which means consideration and evaluation of one's own doings. The skill of applying one's own abilities in different situations develops through trial and error. Contextual skills develop simultaneously, and the working situation is understood as a whole. As has already been stated, in certain tasks and subtasks aseptic work order is a principle that should be followed to prevent harmful microbes from being spread to clean surfaces. This is the result if the job is done in the opposite order. However, it may happen that the dirtiest object in the toilet space – the toilet bowl – is cleaned first because, on one hand, it is more pleasant to work in the room thereafter and on the other hand, the average person is not aware of aseptic order.

(Shove, 2003) sees social and material differences in how comfort and cleanliness are specified and attained. Cleanliness contains things that are connected with moral, social, and symbolic meanings. (Clayhill, 1996) points out that nowadays, the demand for cleanliness has been transferred to one's own body and to clothes, which are longer in washing machines than in use. In practice, cleanliness is a very realistic thing, connected with everyday safety. According to (Shove, 2003), people connect decay and smell to danger and illness. In miasma-based theories of illness, air transmits injurious elements that make people ill. These thoughts occur naturally in lavatories. In a recent survey of the European Tissue Symposium it was found that 72% of washroom users see hygiene as the most important factor when drying their hands (Laffeaty, 2009). The concern of hygienic safety can be seen in a wide variety of washroom products and high tech facilities, which make it possible even to have paperless toilets ("Paperless toilet", 2009) or toilet seats which get disinfected and dry after 12 seconds' use ([www.autosanit.com](http://www.autosanit.com)).

#### **Framework in a Condensed Form**

On the basis of these thoughts it is possible to

observe that in connection with cleaning, a lavatory can be described in many ways:

A lavatory as an indoor space and a part of the whole dwelling,

A lavatory as a work place and the object of work, and

A lavatory as a dirty room.

These factors can be assumed to influence how an individual begins to clean a toilet and how she experiences the room. One person may consider microbes, another may think of how to get the task done and a third individual may emphasize comfort.

The aim of this research was to find out what young adults think about toilet cleaning. A cautious assumption was that they consider it disgusting work. Their thoughts were reflected against the thoughts of cleaning professionals.

## METHODS

The material consists of stories written by 43 students and four cleaning professionals. Of these students 11 studied in a home economics school and 32 were first-year university students. The participants were given a sheet of paper on which a certain situation was described in a few sentences. The students were asked to identify with the situation and continue the story. They were asked to imagine that they were assigned to clean the lavatory space in a supermarket. Half of the respondents were asked to imagine that the lavatory was very dirty, while half were to imagine that the lavatory was clean.

The writings were analysed using a content analysis. The material was categorised according to themes that were further divided into subthemes. Conclusions were drawn on the basis of these categories.

The professionals wrote their stories of lavatory cleaning on the basis of a demand in a trade magazine. The writings of the young adults were reflected against them.

## FINDINGS

The analysis of the writings showed that in lavatory cleaning, there are two main orientations:

- work order orientation
- dirt orientation.

The work order orientation turned out to be somewhat stronger.

### Work Order Orientation

The most important theme turned out to be work order. Almost everyone had something to say about this. Half of the respondents described working in the aseptic order. The other half cleaned the imaginary lavatory in the opposite order – the toilet seat first. Although the aseptic order is recommended, average person is not very well aware of this order. There are also different recommendations in guide books. For this reason it is no wonder that many respondents emphasized cleaning the toilet seat. It is the dirtiest object in the toilet space and the cleaning of the room is more comfortable if the dirtiest object is cleaned first. Most respondents described only the work order, but some people gave reasons for how they would proceed.

Before starting the cleaning, I look around and wonder where it is sensible to start so that cleaning takes as little time as possible and there is no need to perform the same task twice.

This statement shows that the individual wanted to perform the tasks in a systematic way and avoid useless work. It is possible, however, that those who spoke of work order without any particular reasoning given have some reason in mind or the order may be inherited from somewhere.

Besides cleaning the toilet seat, another important object to clean is the mirror. If a mirror is bright, it makes a pleasant impression. It is possible that the respondents remembered public toilets in which a mirror was broken and dirty and which gave the impression of poor maintenance.

I wash a mirror with a cloth, which has been wet with all-purpose detergent and I dry the mirror with a squeegee.

In the same way empty soap dispensers, an empty towel dispenser and an empty toilet paper dispenser irritate those who use toilets. Perhaps the participants' own memories prompted them to mention these things. A memorial context is important in the understanding of phenomena (Venkula, 1993). These are very small objects, although extremely important. The order, in which a mirror and the other objects are cleaned and filled, depends on the work order principle. Most respondents described in detail, how they would clean and the fill the soap and towel dispensers. These objects are not big fittings, such as a washbasin, but they received much more attention. One of the reasons may be that they need time. According to one standard, a



washbasin can be cleaned in a minute (VVM, 1971a). Instead, the filling and cleaning of dispensers takes more time. Laying stress on the filling of dispensers gives strength to (Laffeaty's, 2009) idea that people pay particular attention to toilet hygiene when washing and drying their hands.

### Dirt orientation

The other thing emphasized was dirt and mess. Those who imagined cleaning a dirty toilet space were sometimes horrified at the mess, but nevertheless that believed the lavatory must be cleaned and someone has to do the work.

*"First I think, oh, no, but cleaning must be done."*

The respondents wandered at people's behaviour and noticed litter on toilet floors.

*"I think it is astonishing how people make such a mess in public spaces. How many of them throw hand towels on the floor at home?"*

*"Why are public rooms so messy? Why is others' property not respected?"*

In this connection young adults' responsibility was emphasized.

*It is disgusting to use a dirty public toilet. Somebody must take care of the cleanliness. So even though the task is not the most pleasant, I would like to perform it properly and not using the technique of "anything goes".*

Those whose objects looked clean were positively surprised. It seems that dirtiness is a default mode. It is possible that the memorial context (Venkula, 1994) has an influence on expectations. Many respondents stated that, although everything looked clean, the lavatory should be cleaned again because of invisible dirt. The professionals emphasized mostly hygienic issues and cleaning result.

*"In public lavatories I think of myself as a customer. If my cleaning result pleases myself, it pleases others, too."*

### Chemicals and equipment

Young adults mostly thought about work order or untidiness. Sometimes, along with these things, they also thought about equipment and cleaning chemicals. Cleaning agents suitable for certain surfaces and suitable pH values were spoken of.

*"I wipe the surfaces using a spray made for glass surfaces."*

*"I have a variety of equipment and a number of cleaning agents to use. I look at them a moment and start work."*

When considering the work order, the

respondents mainly thought about products that were suitable for surface materials. (Figure 1.) When they thought of dirt, their view of chemicals was in their effectiveness at remove dirt. As to the spaces that looked clean, the removal of microbes was emphasized. In this case very few people spoke of usual cleaning or routine cleaning.

*"I remember to pay attention to places where dirt and microbes accumulate."*

This indicates that although the redundancy and trouble of the continuous use of disinfectants have been spoken about in the media, the horror of bacteria and the belief in the necessity of disinfection are firm.

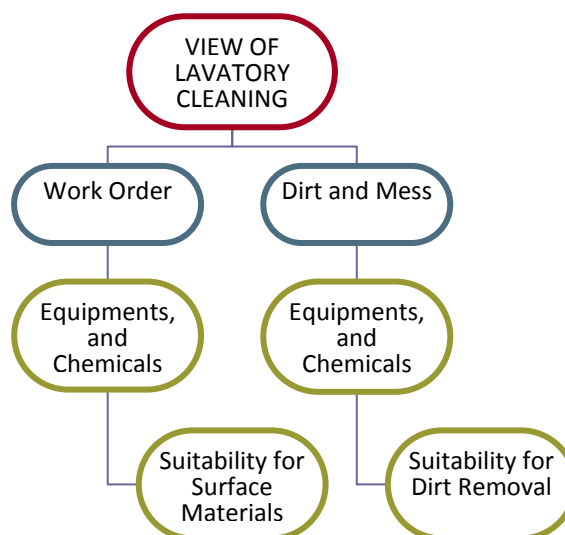


Figure 1. The role of cleaning equipment and chemicals in lavatory cleaning

The choices represent different rationality. It is possible that work order orientation sometimes includes also dirt orientation because some respondents described working in the aseptic order.

## DISCUSSION AND CONCLUSIONS

In principle the number of student writings was large enough to give an impression of the issue of lavatory cleaning. However we cannot generalize the findings, because given on educational institutions in which the young adults were studying, it can be assumed that the respondents had some interests in domestic issues. Because the respondents were young adults, their experiences and skills in doing household tasks could not be very extensive. Therefore, it was natural to concentrate on dirt or work order and things connected with it, because these things belong to the learning of skills (Aulanko, 2008). If

the respondents had been randomly chosen, the writings might have been somewhat different. In the writings it was easy to see the themes uppermost in people's minds when they begin to clean a lavatory. It was also possible to see, which themes young people need more knowledge of. It is especially important to speak more about the types of cleaning agents used in everyday cleaning (Linn, 1985) has found out that there are plenty of poor working postures in lavatory cleaning. The findings showed that people are not aware of the significance of ergonomics although their working postures may be very poor. At least it is not the first thing in their mind. Many people move too little and for this reason some extra steps may be useful but bent and twisted positions and sudden movements can cause trouble.

It is logical to think of work order in which the task at hand proceeds in a flexible and purposeful way. If the task is not very pleasant, then fluency is especially desirable. It must be observed that people did not try to perform tasks as easily as possible; in spite of its unpleasant features, they wanted to perform the task well. This is an indication of responsibility. It is important to note that most people did not emphasize the unpleasant features of lavatory cleaning. The main emphasis was on the importance of cleanliness.

The writings showed that the young respondents thought mainly on the mechanical level, yet it was possible to find some contextual thinking. Contextual thinking involved the question of microbes, which people seemed to consider a default mode. (Thiele-Wittig, 1999) sees that all activities contain a health dimension. Thus, it is possible that the idea of microbes came from routine thoughts without any connection to the situation at hand. The professionals instead had a strong contextual and holistic view. The main emphasis was on hygiene but it was connected with materials, equipment and chemicals as well as the behavior of lavatory users. The holistic view means that the working situation can be taken into account as a whole and different operations can be performed according to the demands of the situation. To get this holistic attitude time and tacit knowledge are needed. As for the lavatory cleaning, healthy circumstances can be supported working in the aseptic order and using correct chemicals and clean equipment. However, the correct work order should be emphasized. It is a

key to safety and it is favourable to the environment.

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## KNOWLEDGE OF UNIVERSITY TEACHERS ABOUT HIV/AIDS AND MICROBIOCIDES IN KARACHI PAKISTAN

Abdul Hakeem Shaikh<sup>1</sup> Syed Tariq-Ali<sup>1</sup> M. Adil Shaikh<sup>2</sup>

<sup>1</sup>Federal Urdu University of Arts Science and Information Technology. Karachi PAKISTAN

<sup>2</sup>Dow Medical University Karachi PAKISTAN

### ABSTRACT

Prevalence of AIDS and HIV infection is currently low in Pakistan but is at risk of sharp increase. The future risk of HIV epidemic would be associated with knowledge attitude and practices of general public. Monitoring of level of awareness is essential in order to safeguard against outbreak of HIV/AIDS epidemic. This study assessed the level of awareness of nearly 188 university teachers (112 male & 76 female) with the help of a self administered questionnaire that had 30 items to be marked True or False.

All the participants had a postgraduate degree in science subjects and included 14 having Ph.D. degrees. Mean number of correct answers was 14.5 (48.5%). Proportion of correct answers was relatively higher for questions pertaining to definition (63%) as compared to those related to transmission (49%), prevention (47%), testing (45%) or rapid testing (45%). The two questions most frequently answered wrong were that subjects mentioned it false that "HIV is destroyed by bleach" (90%); and considered it true that, "If someone gets HIV through needle sharing, that person can only spread HIV by sharing needles with other people" (74%). The level of awareness of highly educated professionals was not satisfactory and indicates need for increasing measures to educate the public about HIV and AIDS.

*Keywords: AIDS, HIV, Pakistan, microbicides*

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### INTRODUCTION

Spread of HIV and AIDS result in macro and micro level disruption to societies, families, economies and health care systems. The UNAIDS and the WHO estimate that AIDS has killed more than 25 million people since it was first recognized in 1981,. Despite recent, improved access to antiretroviral treatment and care in many regions of the world, the AIDS epidemic claimed an estimated 2.8 million lives in 2005 of which more than half a million were children (UNAIDS 2006).

According to a global report on HIV, in Pakistan, approximately 85 000 [46 000–210 000] adults and children were living with HIV in 2005. The country will need to improve its prevention efforts if it is to avoid more serious HIV outbreaks(UNAIDS 2006). Almost one in four injecting drug users tested in Karachi was HIV positive in 2004 (Altaf et al. 2007); less than a year earlier the same community yielded only one HIV-positive case. Many of these injecting drug users move from city to city, and large proportions of them share injecting equipment (48% in Karachi and 82% in Lahore had shared in the previous week). There is significant overlap between injecting drug use and sex work—against a backdrop of dismal AIDS knowledge among persons at high risk of

infection. In Karachi, one in four injecting drug users had never heard of AIDS, while one in five sex workers could not recognize a condom, and one in three had never heard of AIDS. A mere 2% of female sex workers said they had used condoms with all their clients in the previous week. It has been mentioned by the report that there are signs of HIV outbreaks in Bangladesh and Pakistan(Ministry of Health Pakistan 2005;Monitoring the AIDS Pandemic Network (MAP) 2005) .

Proliferation of media and technological advancements are having marked impact on people's values and behavior. Such socio-cultural, forces have been noted as the underlying forces for the epidemic of HIV and other STIs in other countries (Bloom 2007;Jodati 2007;Mukherjee 2005). Pakistan though currently not among the countries having high rates of HIV/AIDS is at high risk f the development of an epidemic (Bokhari 2007;Kayani 1994;Vermund 2006). It has been observed that educated people change risky behavior much easily than the less educated people (Ntozi 1997) . Thus they can serve as community leaders for programs aiming at increasing awareness. Assessment of knowledge of highly educated people could help in designing programs for training the trainers.

The purpose of the study was to assess level of awareness of that section of local population who is likely to have the most knowledge about HIV and microbicides.

## METHODS

This study assessed the level of awareness of nearly 188 university teachers (112 male & 76 female) with the help of a self administered questionnaire that had 30 items (Table 2) to be marked True or False. The questionnaire was designed on the basis of questions that have been used by other researchers in similar studies (Merchant et al. 2007). Anonymity of subjects and institutions was assured and written consent for participation in study was taken.

Data was collected from teachers of a large local University. Only teachers of science subjects were included in the study. Data was collected in a single day during a span of two hours by four data collectors. On average filling in the questionnaire took two to three minutes.

Only the teachers who were available on the day of data collection and could fill the questionnaire on the spot were given questionnaires. In order to minimize contamination of answers and bias because of discussions with the data collector or other persons, the questionnaire was to be answered without making any comments or discussions.

## RESULTS

All the participants had a postgraduate degree in science subjects and included 14 having Ph.D. degrees. Details of the participants are given in Table 1.

Table 1: Characteristics of the Respondents

| Characteristic            | Statistic  |           |            |
|---------------------------|------------|-----------|------------|
|                           | Male       | Female    | Total      |
| Age [Mean (SD)]           | 45 (13)    | 37 (10)   | 42 (13)    |
| Education:                |            |           |            |
| <i>M.Phil. [no (%)]</i>   | 8 (7.1%)   | 12(15.8%) | 20(10.6%)  |
| <i>MSC [no (%)]</i>       | 80 (71.4%) | 60(78.9%) | 140(74.5%) |
| <i>PHD [no (%)]</i>       | 24 (21.4%) | 4(5.3%)   | 28 (14.9%) |
| Department                |            |           |            |
| <i>Biol. Sci. (n,%)</i>   | 72 (64.3%) | 64(84.2%) | 136(72.3%) |
| <i>Other Sci. [no(%)]</i> | 40 (35.7%) | 12(15.8%) | 52 (27.7%) |

Mean number of correct answers was 14.5 (48.5%). Percentages of correct answers for each question are given in Table 2. The two questions most frequently answered wrong were that subjects mentioned it false that "HIV is destroyed by bleach" (90%); and considered it true that, "If someone gets HIV through needle sharing, that person can only spread HIV by sharing needles with other people" (74%).

Responses were also assessed in relation to subtopics (Table 3). Mean percentage of correct answers was relatively higher for questions pertaining to definition (63%) as compared to those related to transmission (49%), prevention (47%), testing (45%) or rapid testing (45%).

Though the sample size was small and the results are expected to be indicative of only a particular section of the population, differences were explored in level of knowledge according to age and level of education and area of study (department) of respondents. On average, mean percentage of correct answers was higher for females as compared to males ( $P=0.039$ ) (fig 1). Those who had degrees of M.Phil. or Ph.D. had significantly ( $P=0.013$ ) higher mean percentage of correct answers than those who had only Masters degree (fig 2). Those who were aged 38 to 52 had significantly ( $P=0.02$ ) higher mean percentage of correct answers than those who were younger or older (fig 3). Respondents belonging to biological sciences had significantly ( $P=0.001$ ) higher mean percentage of correct answers than those belonging to other sciences (fig.4). On average, females answered more questions (15.6) correctly than men (13.8) ( $P<0.05$ ).

## DISCUSSION

The level of awareness of highly educated professionals was not satisfactory in all areas and indicates need for increasing measures to educate the public about HIV and AIDS.

Though educational level is associated with better knowledge (Mukherjee 2005;Ntozi 1997) about ADIS/HIV It has been observed in several other studies that level of awareness of even educated people in Pakistan is not very high and studies done among medical students and physician also indicate need for improvements (Anjum et al. 2005;Khandwalla et al. 2000;Shaikh et al. 2007).

Even short courses are found to have marked effect on knowledge and attitudes (Mukherjee

2005) and such courses could be arranged for professionals and public.

It has been shown that autonomy has positive influence on women level of awareness of AIDS (Bloom 2007), however the observation that women had better knowledge than men is a new

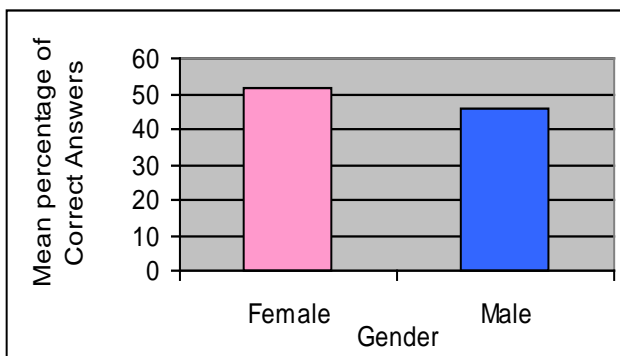
observation. It needs to be rechecked in larger studies. Lower level of knowledge of relatively younger adults could also be a cause of concern. Confirmation of these trends is needed and if they exist in general their reasons should be explore.

**Table 2: Percentage of Subjects who gave correct answers**

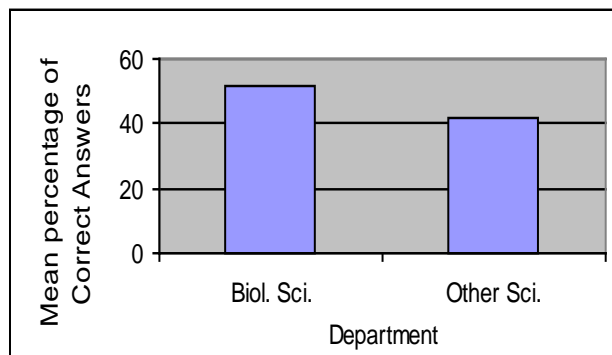
| Questions  | % of correct answer |                 |            |
|--|---------------------|-----------------|------------|
|  | Gender              |                 | Total      |
|  | F<br>n=76<br>%      | M<br>n=112<br>% | n=188<br>% |
| Q1. If you were HIV infected, current drug treatments would let you live longer.   | 63                  | 46              | 53         |
| Q2. People can get AIDS without getting HIV.   | 79                  | 50              | 62         |
| Q3. Being infected with HIV does not mean you have AIDS.   | 95                  | 54              | 70         |
| Q4. A person can be infected with HIV for 5 years or more without getting AIDS.  | 79                  | 61              | 68         |
| Q5. A person cannot get HIV by donating blood.   | 58                  | 50              | 53         |
| Q6. A woman with HIV can give HIV to her baby during breastfeeding.  | 53                  | 57              | 55         |
| Q7. If someone gets HIV through needle sharing, that person can only spread HIV by sharing needles with other people.      | 21                  | 29              | 26         |
| Q8. Coins, such as quarters or nickels, can carry HIV.   | 84                  | 79              | 81         |
| Q9. HIV is not transmitted by putting tongue in the mouth of someone who has HIV.  | 56                  | 18              | 33         |
| Q10. HIV is destroyed by bleach.   | 5                   | 7               | 6          |
| Q11. If you use injection drugs, the only way to prevent getting HIV is to quit using them.                                | 68                  | 46              | 55         |
| Q12. Wearing insect repellent to keep away mosquitoes prevent from getting HIV.  | 68                  | 61              | 64         |
| Q13. Not having sex is the only way to reduce your risk of getting HIV.  | 53                  | 61              | 57         |
| Q14. You can prevent getting HIV after sex by washing your genitals or private parts.                                      | 74                  | 86              | 81         |
| Q15. Microbicides are drugs available in form of syrups and capsules   | 37                  | 25              | 30         |
| Q16. Use of Microbicides prevents transmission of HIV and AIDS   | 37                  | 39              | 38         |
| Q17. All Microbicides have spermicidal activity  | 58                  | 43              | 49         |
| Q18. Microbicides are formulated as gels, creams, films, or suppositories that can be applied inside the vagina or rectum. | 42                  | 46              | 45         |
| Q19. HIV makes antibodies which harm a person's body.  | 58                  | 32              | 43         |
| Q20. Having blood drawn for an HIV test will make you anemic.  | 63                  | 61              | 62         |
| Q21. The HIV antibody test help strengthen antibodies to prevent infected with HIV.  | 26                  | 39              | 34         |
| Q22. If you were infected with HIV one week ago, your HIV test will be negative.   | 68                  | 50              | 57         |
| Q23. The HIV antibody test will not tell you if you have AIDS.   | 47                  | 46              | 47         |
| Q24. If HIV test is negative, it must be repeated within a week to confirm the results.                                    | 21                  | 36              | 30         |
| Q25. It takes one to two days to perform a rapid HIV test.   | 37                  | 32              | 34         |
| Q26. An invalid rapid HIV test result means you've been infected with HIV for < 3 months.                                  | 16                  | 43              | 32         |
| Q27. If your rapid HIV test is positive, then you will need a test to confirm this.  | 68                  | 68              | 68         |
| Q28. The rapid HIV test uses a sample of your urine.   | 37                  | 50              | 45         |
| Q29. A needle can be used to take blood from your arm for the rapid HIV test.  | 47                  | 50              | 49         |
| Q30. Even if your rapid HIV test is positive, you may not have HIV.  | 42                  | 21              | 30         |

**Table 3: Mean percentage of correct answers from various subtopics**

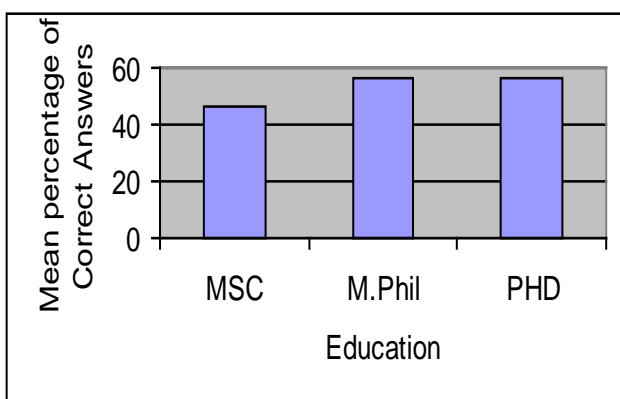
| Subject area of Questions | Gender |      |      |      | Total |      |
|---------------------------|--------|------|------|------|-------|------|
|                           | F      |      | M    |      | Mean  | SD   |
|                           | Mean   | SD   | Mean | SD   |       |      |
| Definitions               | 78.9   | 18.8 | 52.6 | 20.6 | 63.3  | 23.6 |
| Transmission              | 53.6   | 23.7 | 46.4 | 21.6 | 49.3  | 22.6 |
| Prevention                | 49.1   | 21.0 | 46.0 | 13.9 | 47.2  | 17.1 |
| Testing                   | 47.3   | 28.0 | 44.0 | 23.4 | 45.3  | 25.3 |
| Rapid Testing             | 41.2   | 22.1 | 44.0 | 20.2 | 42.9  | 20.9 |



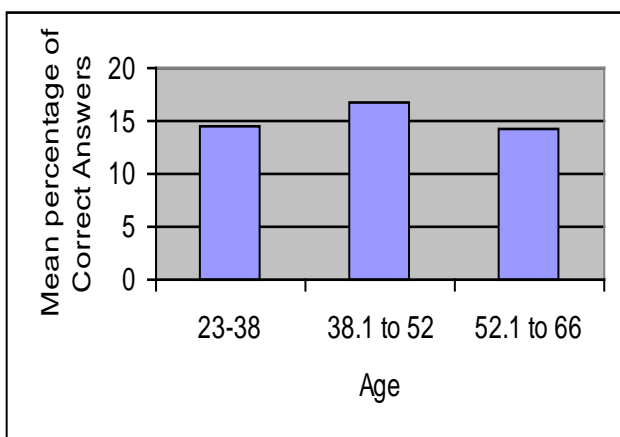
**Figure 1: Correct answers according to Gender**



**Figure 4: Correct answers according to department.**



**Figure 2: Correct answers according to education**



**Figure 3: Ratio of correct answers according age**

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## THE FUTURE OF CLOTHING AND TEXTILES IN KENYAN SECONDARY SCHOOLS

Dorcas.J. Serem. C. Mukwa, P.A. Kafu.

Department Of Family & Consumer Sciences, School Of Agriculture, Moi University.

Associate Professor Department Of Curriculum, Instruction and Media, School Of Education Moi University

email: seremdorcas@yahoo.com

### ABSTRACT

The aim of this study was to investigate the attitude of Home Science students and teachers towards Clothing and Textiles in Home Science discipline of the secondary school curriculum. Home Science is one of the technical and vocational subjects introduced to Africans in Kenya towards the end of the 19th century by Christian missionaries (Wandera, 1967). Home Science was fragmented into Needlework and Foods and Nutrition until 1985 when it was consolidated. The objectives were to establish the teachers' and students' attitude towards instruction of Clothing and Textiles and determine problems affecting the instruction of Clothing and Textiles. Simple and systematic random sampling techniques were used to choose schools offering Home Science and students to participate in the study respectively. Data was collected using questionnaire from 409 students and 27 teachers from 21 secondary schools offering Home Science in three (3) districts in Western Kenya. Descriptive statistics was used in data analysis and relationship between variables was established using chi-square tests. The study established that 61% and 78% of teachers and students respectively have positive attitude towards Clothing and Textiles.

*Key words: Attitude, Kenya, Home Science, Speed test, Vocational Education, Approved teacher*

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### INTRODUCTION

Dewey 1938) emphasizes the creative role of education in developing an individual into a good learner and a complete human being. This means that the student's abilities, skills and attitudes need to be developed and properly nurtured. Attitudes may be learned from other people, they can be a product or an experience or they can be created in our own minds. A teacher is responsible for facilitating the learner to acquire new knowledge, skills and attitudes. Otunga, 1993) reported that Clothing and Textiles and Consumer Education are the worst taught and learnt units as ranked by sample students and teachers in the study. Further, (Sang, 2002) reported that 61.9% of Home Science teachers in Nandi district expressed the need for more training in Clothing and Textiles. Attitudes as mentioned earlier influence a person's behaviour, and therefore, the attitudes of teachers can influence the attitudes of students towards Clothing and Textiles.

Despite the usefulness of Clothing and Textiles (Kanga , 1994) found out that only 18.2% of Home Science teachers in Nairobi and Kiambu enjoyed teaching Clothing and Textiles while the majority, 63.6% least enjoyed teaching it. Students as well have been reported to dislike Clothing and Textile unit (Sang, 2002). According to (Maduka, 2010) in Arubayi many lecturers and students in Nigeria perceive Clothing and Textiles as a very difficult aspect of Home Economics. According to (Nyangi,

1992) 85.7% students taking Home Science in Nairobi found Clothing and Textiles to be difficult to learn. (Muthui , 1981) argued that Clothing and Textiles curriculum lacked clearly defined objectives so that the performance standards demanded for coursework are too high although it is allocated too few marks in relation to the work and time involved. Paper 2 is Clothing and Textiles practical examination and it contains coursework which is worth 15 marks and Speed test which is worth 20 marks (KNEC, 2004).

Needlework as a technical and vocational course was considered to be in the secondary school curriculum in the 1960s (Wandera, 1967) so that by 1969, 24 schools had registered students for secondary levels examination in Needlework or Foods and Nutrition. Advanced secondary ("A") levels Home Science was tested for the first time in 1973. In 1981 Home Science became a compulsory subject in Forms 1 and 2 in all girls' secondary schools and mixed secondary schools and examinable at secondary levels and at advanced secondary levels (Sigot, 1987). Home Science was fragmented into Foods and Nutrition, Needlework and Home Management until 1985 when it became consolidated into one.

From these views concerning the unpopularity of the unit among Home Science teachers and students and the consolidation of Home Science, it was necessary to establish the attitudes of Home Science teachers and students towards

Clothing and Textiles and find out if they are responsible for making it unpopular among teachers and students. The objectives were; to establish the teachers' and students' attitudes towards Clothing and Textiles and to determine problems affecting the instruction of Clothing and Textiles.

## METHODS

A descriptive research design was used to establish the attitudes of teachers and students of Home Science in secondary schools in three districts namely Uasin Gishu, Nandi and Keiyo in Western part of Kenya towards Clothing and Textiles in Home Science. The study obtained data from two (2) main target groups namely, Forms 3 and 4 Home Science students and teachers in the selected schools offering Home Science. Secondary schools in the study area were divided into four categories (strata) and to produce appropriate number of representatives from each stratum, stratified random sampling was used. The strata covered national, provincial, district and private secondary schools. After stratifying the schools, simple random sampling technique, specifically the lottery approach, was used to choose schools offering Home Science in each stratum to participate in the study. The process ensured equal chance of each school being included in the sample.

To choose Home Science students in the selected schools, systematic random sampling technique was used. It is a variation of simple random sampling where a size of the selection or sampling interval will be obtained by dividing the population by the expected number of the sample. For example, if a researcher wants to select a sample of 100 pupils from a census lot of 1000 pupils, he/she will first divide the population by the number that is needed for the sample (1000 divided by 100 equals to 10). Then he/she selects at random a number for example 6 then he/she selects every tenth name from the list of population. It should be noted that systematic sampling, can only, be used if one is certain that the population list is in random order (Borg and Gall, 1983). Teachers who participated were selected using purposive random sampling technique.

At least fifty percent (50%) of the total number of schools from each stratum were randomly selected to participate in the present study. Therefore, in Uasin Gishu district one national

school, four Provincial schools, three district schools and two private schools were part of the sample. In Nandi district five Provincial and four district schools formed part of the sample while in Keiyo two provincial schools participated.

Seventy percent (70%) of students in Forms 3 and 4 in each selected school were picked randomly using systematic random sampling. Twenty seven (96.4%), out of the 28 Home Science teachers in the sampled schools participated in the study. In summary, the twenty-one (21) sampled schools in the study area out of 38 represented 58% of total schools offering Home Science. The total student population of these schools at the time of data collection was 8262 students. Form 4 students were 1943 while Form 3 students were 2039. Those who opted to take Home Science in Form 4 were 291 and in Form 3 were 314 totaling 605 students. This, therefore, was 15% of the total school student population of Forms 4 and 3. Both the teacher and the student questionnaire contained three sections namely demographic data (Section A), Section B solicited for data concerning the instruction of Clothing and Textiles unit in the schools and Section C Teacher and Student Attitude Scale. Section C sought opinions from teachers and the students about Clothing and Textiles based on positive and negative statements on a 5-point scale. The teacher and the student-respondents were required to weigh the statement and either tick against Strongly Agree (SA), Agree (A), Undecided (UD), Disagree (DA) and Strongly Disagree (SD). Positive statements were awarded 5, 4, 2, and 1 point(s) respectively, while for the negative statements, the scoring procedure was reversed so that they were awarded 1, 2, 4 and 5 points respectively. Undecided (neutral) was awarded a score of three. All the ratings of four and five were translated to positive attitude, three was neutral attitude and one and two were negative attitude. The field research was carried out in September to mid-October 2005.

## RESULTS

### Attitude of Home Science teachers towards Clothing and Textiles

This sub-section had seven (7) statements of which two and five were positive attitude and negative attitude statements respectively designed to answer the research question "What is the relationship between teacher's qualification and experience and attitude towards Clothing and

Textiles unit?" and the Null Hypothesis (Ho<sub>2</sub>) "The qualification and experience of teachers do not influence their attitude towards Clothing and Textiles unit." The findings are presented in Table 1 and 2. To the positive statements item 1 and 2 on Table 1 revealed that the teacher-respondents had a positive attitude towards teaching clothing and textile. When the same data in item one was cross tabulated against qualification of the teachers, only one graduate teacher with teaching experience of 10 to 12 years had a negative attitude. When the same data for item 1 and item 2 was subjected to the Chi-square (X<sup>2</sup>) statistical tests, no significant relationship was observed. There was no significant relationship also between teacher experience and attitude which implies that qualification and experience of teachers do not necessarily influence attitude towards Clothing and Textiles.

To further solicit attitude of teachers, the negative statement 'Clothing and Textiles is the least well taught unit in Home Science' generated data that revealed that half of the teachers had negative attitude.

To better, understand the attitude of teachers towards Clothing and Textiles unit a negative attitude statement which implied that Clothing and Textiles unit is too technical to teach was included in teacher questionnaire. Analysis of data revealed that 18 (66.7%) teacher-respondents had a positive attitude and nine (33.3%) of them had a negative attitude. Item 6 as indicated on tables 1 and 2 reveals that teachers do not perceive the unit to be difficult for the students to learn which may mean that if teachers are well equipped with knowledge and skills, and facilities provided, students will learn well. Item 7 on tables 1 and 2 reveals that there was almost equal number of teachers who have positive attitude and those who have negative attitude towards Clothing and Textiles. On subjecting the same data in each case to Chi-Square (X<sup>2</sup>), statistical analysis, there was no significant relationship. This means that attitudes of teachers towards Clothing and Textiles are neither due to teachers' qualification nor due to teachers' experience and therefore the null hypothesis "The qualification and the experience

of teachers do not influence their attitude towards Clothing and Textiles" is accepted.

### Attitudes of Home Science students towards Clothing and Textiles

It is a fact that attitudes toward specific objects, people, and symbols satisfy specific needs. The closer these objects are to actual need satisfaction, and the more they are clearly perceived as relevant to need satisfaction, the greater are the probabilities of positive attitude formation (Katz, 1960). In view of this, the present study attempted to establish the attitudes of students towards Clothing and Textiles unit. In order to establish this, eleven statements were formulated. Of the eleven statements, three were negative and eight were positive. The likert- scale questionnaire required the respondents to rate the statements as per their feelings. These statements attempted to answer the following research question "What is the relationship between student's gender and attitudes towards Clothing and Textiles unit?" and subsequent Null hypothesis (Ho<sub>1</sub>) "The student's gender does not influence their attitude towards learning Clothing and Textiles." The positive and the negative statements were rated by the respondents and the findings are presented in Table 3

All the first positive statements in the attitude scale when analyzed revealed that the attitudes of the majority of students were positive, while the minorities were either neutral or negative. This indicates that the majority of students view Clothing and Textiles as a valuable unit because they will get the skills and knowledge of making their own clothes. Home Science students whether male or female who have chosen the subject for KCSE seem to understand Clothing and Textiles as having utilitarian value, hence valuable for day-to-day life.

Although pattern drafting, has been claimed to be difficult from the observations made, it appears that it is not so much the cause of negative attitude towards Clothing and Textiles. Since it is a skill learnt from the teacher, it is possible that when the teacher is good in pattern drafting, students will easily have interest in it too.

**Table 1: Attitude of teachers according to their qualification**

| Attitude Statement  | Attitude | Qualification of Teacher |     |                |     |            |    |               |     |               |    |
|---|----------|--------------------------|-----|----------------|-----|------------|----|---------------|-----|---------------|----|
|   |          | Diploma (n=3)            |     | Approved (n=6) |     | B.Ed (n=6) |    | Masters (n=2) |     | Total (No=27) |    |
|   |          | n                        | %   | n              | %   | n          | %  | n             | %   | n             | %  |
| 1. Clothing and Textiles is an important unit                         | Positive | 3                        | 100 | 6              | 100 | 15         | 94 | 2             | 100 | 26            | 96 |
|   | Negative | 0                        | 0   | 0              | 0   | 1          | 6  | 0             | 0   | 1             | 4  |
| 2. Clothing and Textiles unit prepare students for employment         | Positive | 1                        | 33  | 5              | 83  | 10         | 63 | 1             | 50  | 17            | 63 |
|   | Neutral  | 0                        | 0   | 0              | 0   | 3          | 19 | 1             | 50  | 4             | 15 |
|   | Negative | 2                        | 67  | 1              | 17  | 3          | 19 | 0             | 0   | 6             | 22 |
| 3. Clothing and Textiles is the least-liked unit                      | Positive | 0                        | 0   | 1              | 17  | 2          | 13 | 0             | 0   | 3             | 11 |
|   | Neutral  | 0                        | 0   | 0              | 0   | 2          | 13 | 0             | 0   | 2             | 7  |
|   | Negative | 3                        | 100 | 5              | 83  | 12         | 75 | 2             | 100 | 22            | 82 |
| 4. Clothing and Textiles is the least-taught unit                     | Positive | 1                        | 33  | 1              | 17  | 9          | 56 | 2             | 100 | 13            | 48 |
|   | Neutral  | 0                        | 0   | 0              | 0   | 1          | 6  | 0             | 0   | 1             | 4  |
|   | Negative | 2                        | 60  | 2              | 50  | 8          | 44 | 8             | 44  | 13            | 48 |
| 5. Clothing and Textiles unit is too technical to teach               | Positive | 0                        | 0   | 4              | 67  | 12         | 75 | 2             | 100 | 18            | 67 |
|   | Neutral  | 0                        | 0   | 0              | 0   | 0          | 0  | 0             | 0   | 0             | 0  |
|   | Negative | 3                        | 100 | 2              | 33  | 4          | 25 | 0             | 0   | 9             | 33 |
| 6. Clothing and Textiles unit is too difficult for students to learn. | Positive | 2                        | 67  | 6              | 100 | 14         | 88 | 1             | 50  | 23            | 85 |
|   | Neutral  | 0                        | 0   | 0              | 0   | 1          | 6  | 1             | 50  | 2             | 7  |
|   | Negative | 1                        | 33  | 0              | 0   | 1          | 11 | 2             | 11  | 2             | 7  |
| 7. Clothing and Textiles unit is time-consuming                       | Positive | 1                        | 33  | 3              | 50  | 8          | 50 | 1             | 50  | 13            | 48 |
|   | Neutral  | 0                        | 0   | 1              | 17  | 1          | 6  | 0             | 0   | 2             | 7  |
|   | Negative | 2                        | 67  | 2              | 33  | 7          | 44 | 1             | 50  | 12            | 44 |

**Table 2: Attitude of teachers according to their experience**

| Attitude Statement  | Attitude | Experience of Teacher (n=27) |     |            |     |             |    |               |    |
|---|----------|------------------------------|-----|------------|-----|-------------|----|---------------|----|
|   |          | <1-3 (No=5)                  |     | 4-9 (No=4) |     | >10 (No=18) |    | Total (No=27) |    |
|   |          | n                            | %   | n          | %   | n           | %  | N             | %  |
| 1. Clothing and Textiles is an important unit                         | Positive | 5                            | 100 | 4          | 100 | 17          | 94 | 26            | 96 |
|   | Negative | 0                            | 0   | 0          | 0   | 1           | 6  | 1             | 4  |
| 2. Clothing and Textiles unit prepare students for employment         | Positive | 4                            | 80  | 2          | 50  | 11          | 61 | 17            | 63 |
|   | Neutral  | 1                            | 20  | 1          | 25  | 2           | 11 | 4             | 15 |
|   | Negative | 0                            | 0   | 1          | 25  | 5           | 28 | 6             | 22 |
| 3. Clothing and Textiles is the least-liked unit                      | Positive | 0                            | 0   | 1          | 25  | 2           | 11 | 3             | 11 |
|   | Neutral  | 2                            | 40  | 0          | 0   | 0           | 0  | 2             | 7  |
|   | Negative | 3                            | 60  | 3          | 75  | 16          | 89 | 22            | 82 |
| 4. Clothing and Textiles is the least-taught unit                     | Positive | 2                            | 40  | 2          | 50  | 9           | 50 | 13            | 48 |
|   | Neutral  | 0                            | 0   | 0          | 0   | 1           | 6  | 1             | 4  |
|   | Negative | 3                            | 60  | 2          | 50  | 8           | 44 | 13            | 48 |
| 5. Clothing and Textiles unit is too technical to teach               | Positive | 5                            | 100 | 3          | 75  | 10          | 56 | 18            | 67 |
|   | Neutral  | 0                            | 0   | 0          | 0   | 0           | 0  | 0             | 0  |
|   | Negative | 0                            | 0   | 1          | 25  | 8           | 44 | 9             | 33 |
| 6. Clothing and Textiles unit is too difficult for students to learn. | Positive | 4                            | 80  | 4          | 100 | 15          | 83 | 23            | 85 |
|   | Neutral  | 1                            | 20  | 0          | 0   | 1           | 6  | 2             | 7  |
|   | Negative | 0                            | 0   | 0          | 0   | 2           | 11 | 2             | 7  |
| 7. Clothing and Textiles unit is time-consuming                       | Positive | 3                            | 60  | 3          | 75  | 7           | 39 | 13            | 48 |
|   | Neutral  | 1                            | 20  | 0          | 0   | 1           | 6  | 2             | 7  |
|   | Negative | 1                            | 20  | 1          | 25  | 10          | 56 | 12            | 44 |

**Table 3. Summary of attitude of students (n =409)**

| Positive and Negative Attitude Statements               | Positive |    | Neutral |    | Negative |    |
|---|----------|----|---------|----|----------|----|
|   | n        | %  | n       | %  | n        | %  |
| I like using a sewing machine                           | 355      | 87 | 23      | 6  | 31       | 8  |
| I like sewing my own clothes                            | 344      | 84 | 19      | 5  | 46       | 11 |
| I wish I could make my own clothes                      | 282      | 69 | 47      | 12 | 80       | 20 |
| Pattern drafting is interesting to me                   | 248      | 61 | 68      | 17 | 92       | 23 |
| Impressed with my teacher's ability to make own clothes | 251      | 61 | 89      | 22 | 69       | 17 |
| I wish I could pursue C/T in the university             | 212      | 52 | 84      | 21 | 113      | 28 |
| With knowledge and skill in C/T one cannot miss a job   | 366      | 90 | 16      | 4  | 27       | 7  |
| C/T provides skills useful throughout life              | 372      | 91 | 17      | 4  | 20       | 5  |
| Clothing and Textiles is not academic                   | 353      | 86 | 28      | 7  | 28       | 7  |
| Clothing and Textiles has no future                     | 392      | 96 | 12      | 3  | 5        | 1  |
| There are tailors and ready-made clothes                | 343      | 84 | 34      | 8  | 32       | 8  |

Analyzed data presented in Table 3 as a response to 'I wish I could pursue Clothing and Textiles unit at the University' show that more students have negative attitude. For a long time, Home Science could be pursued at the university only if one wanted to be a Home Science teacher and singling out Clothing and Textile may have contributed to the negative attitude in the way students responded. There are many cases also, where a student who has not taken Home Science at KCSE but has done well in sciences qualify to take Home Science and Technology Education at the university. The way students have responded could also be as a result of lack of information, concerning the future career prospects of Clothing and Textiles unit.

Analysed data to all the negative statements (item 9, 10 and 11) on Table 3 confirmed that more than 80% of students had a positive attitude to Clothing and Textiles as revealed from positive statements. This means that students felt that Clothing and Textiles is important and needs to be learnt despite the presence of tailors in our society. Clothing and Textiles entails more than just knowing how to sew.

On subjecting data to Chi-square ( $X^2$ ) statistical tests to find out relationship between gender and attitude of students in all cases, no significant relationship was revealed. This means, therefore, that gender has no influence on the attitudes of students towards Clothing and Textiles, therefore the null hypothesis that the student's gender does not influence their attitude towards Clothing and Textiles unit is accepted.

**Problem affecting the instruction of Clothing and Textiles Unit.**

Problems associated with the learning and teaching can be detrimental to any subject. Problems may be due to an environment which is not conducive, the amount of time given against the topics and practical to be covered, lack of learning materials, and unclear usefulness of the unit. The research question was "What is the relationship between the problems associated with instruction of Clothing and Textile and the attitude of Home Science teachers and students towards Clothing and Textiles?" and the Null Hypothesis ( $H_0$ ) was "Problems associated with instruction of Clothing and Textiles do not influence the teacher's and student's attitudes towards Clothing and Textiles unit."

In response to the above question, an item in the questionnaire was designed and administered to the students to identify the most disliked unit in Home Science. This study established that Clothing and Textiles is the most disliked unit as shown by 196 (47.9%) students who indicated so. This was followed by Consumer Education as indicated by 105 (25.7%) students, Child Education 43 (10.5%), Foods and Nutrition 16 (3.9%) and Home Management 13 (9.2%). Students who liked all the units were 36 (8.8%). From this analysis, Clothing and Textiles is the most disliked unit.

Among those who disliked Clothing and Textiles 56 (13.7%) of them felt that the unit is time consuming because there are many processes to learn and articles to make, so that there is limited time to study other subjects. There is course work, speed test and the regular examination papers. The second commonly stated reason, 54 (13.2%) was that the unit is hard and confusing. This was followed by those who indicated that the unit is hectic and tiresome, 37 (9%).

Another item designed and administered to the students solicited for factors that contributed to disliking of Clothing and Textiles unit. A large proportion of students 65 (15.8%) identified too many processes in Clothing and Textiles unit as a major factor for disliking the unit. A small number 45 (11%) identified incompetence in using a sewing machine, and 28 (6.8%) indicated sewing, while 16 (3.8%) identified speed test. Multiple responses were given by student respondent who disliked C/T unit.

Chi-square ( $X^2$ ) statistical analysis, showed significant relationship between factors for disliking and attitudes towards Clothing and Textiles unit. The analysis reveals that Clothing and Textiles unit has many topics to be covered and therefore require more time and yet in schools, offering Home Science, it is only taught in third term meaning that it is a crush program for the students.

#### Time allocation for practical

An item in the questionnaire solicited teachers' views on given time for Clothing and Textiles practical in schools. A large proportion of teachers 24 (88.9%) were of the opinion that time for practical is not enough, while three (11.1%) felt time was enough. The reasons given by respondents varied. One (3.7%) teacher said that the practical time is only enough for demonstrations by the teacher. Two (7.4%) teachers said that Clothing and Textiles be spread throughout the year for students to gain practical knowledge and skills and one (3.7%) teacher said that the class is too large. Six (22.2%) teachers said that the unit is practical oriented and for students to learn how to design they need extra time and therefore, Clothing and Textiles be separated and offered as a subject by itself at KCSE. The respondents suggested more time for practical as follows:

- a large proportion 7 (26%) of them suggested 80 minutes extra,
- Three (11.1%) of them suggested 80 minutes
- Two (7.4%) of them suggested 120 minutes and of the 4 other respondents who made suggestions the first one suggested 40 minutes, the second one suggested 160 minutes, the third one suggested 240 minutes and the last one suggested just more time.

A more-or-less similar statement in a form of a suggestion was designed and administered to teachers in the likert- scale form 'Clothing and Textiles should be given more time' and it was

observed that all 27 (100%) teachers agreed that more time should be dedicated to the teaching and learning of Clothing and Textiles. It is interesting to note that 22 (81.5%) of them, strongly agreed with the statement. Teachers are the ones responsible for seeing that students learn and they know better problems that students face and therefore, this observation reveals inadequate time for Clothing and Textile practical is a problem for both teachers and students.

Clothing and Textiles be separate from Home Science at KCSE

The suggestion that Clothing and Textiles be treated as a KCSE subject by itself was made by some teacher-respondents when explaining why practical lessons are not enough or sufficient. A similar statement was included in the attitude statements in the likert scale form and whose analysis of the observations shows the majority, 23 (85.2%) of the respondents agreed with the statement while 2 (7.4%) were neutral and 2 (7.4%) disagreed with the statement. The coverage of Clothing and Textile has been greatly scaled-down since it was combined with other units so that it is poorly covered. In this context, poor covered include shallow coverage. Chi-square ( $X^2$ ) statistical analysis to determine relationship between teacher experience and opinion, showed a significant relationship and therefore, the null hypothesis is not accepted. This means that most teachers are of the opinion that Clothing and Textiles deserves to be treated as an examinable subject by itself in KCSE.

## DISCUSSION

Results revealed that Clothing and Textiles is the least liked unit. This observation is in line with findings of (Sang, 2002) which revealed training needs of Home Science teachers led by Clothing and Textiles and (Kanga, 1994) which reported 63.6% teachers who said they least enjoyed teaching Clothing and Textiles. Clothing and textiles teachers are in a position "to know" what units of Home Science students like or dislike. They are also in a position to change the situation if more time is given for practical, if Clothing and Textiles unit can be taught in all the school terms instead of only in third term and if teachers are in-serviced in areas they are not confident to teach. Results also revealed that Clothing and Textiles is not well taught. This observation may be justifying (Sang, 2002) findings that not all Home

Science teachers are confident, in handling the Clothing and Textiles. It should be further noted that teachers' attitude towards any subject will affect the attitude of students towards the same. The majority of students view Clothing and Textiles as a valuable unit. These findings are not in line with (Cheruiyot's, 2001) and (Sang's, 2002) findings which revealed that students have negative attitudes.

Results revealed that Clothing and Textiles was the most disliked unit in Home Science. This was in line with what (Otunga, 1993) reported.

## CONCLUSION

Based on the findings of this study, it is concluded that students and teachers of Home Science in the study area have positive attitude towards Clothing and Textiles. It is the recommendation of the researcher that the area of competence of teachers be examined as it affects the teaching of Clothing and Textiles.

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## FACTORS AFFECTING THE GENERAL ACCEPTABILITY OF TRADITIONAL FOODS SERVED AT AFRICAN CUISINE LUNCHEON IN MOI UNIVERSITY, KENYA.

Violet Mugalavai, Korir J., Omutimba H., Nassir R., Kiama F., Onyuna A., Juma L., Chemutai A., Wafula M., Kamwea J., Schulz R. and Makomere J.  
Moi University, Kenya, Department of Family and Consumer Sciences.  
email-violet.mugalavai@gmail.com

### ABSTRACT

Beliefs and mental images that people create regarding food from a culture that is not their own, are likely to influence their choice of food especially when eating out. The cuisine served comprised of 23 different ethnic foods from various East African communities including the Luo, Luhya, Kikuyu, Kalenjin, Akamba, Swahili and Ugandan. Buffet style of service was used to present food using symbolic artifacts of the various ethnic groups. The research sought to examine customers' perception of traditional food served at an African cuisine luncheon. The objectives of the study were: to investigate the extent to which customers appreciate traditional foods from different cultures and to establish the extent to which sensory characteristics of traditional cuisines affect their general acceptability.

The results revealed that sensory characteristics were a significant determinant of the general acceptability of the various cuisines with most of the customers noting that the cuisine was "moderately acceptable". The acceptability of traditional cuisines was found to be independent of ethnicity of customers. The positive reaction of customers on the cuisine display and variety meant that there was a gap in the menu items served in the food outlet used in this study. The study recommended that all the food outlets in the various campuses of Moi University should attempt to occasionally provide traditional cuisine.

*Key words: Ethnic cuisine, sensory characteristics, general acceptability.*

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### INTRODUCTION

Food has always been one of the key elements of the culture of any society, but there is no doubt that there is increased interest in food in contemporary society. (Mennell et al., 1992), refer to a rise in interest in 'the sociology of culture' as an explanation for increasing levels of interest in food and eating. According to (Riley, 1994) eating out has become an important part of people's lifestyle in recent decades and the search for novelty is an important part of culinary-based lifestyles.

Food can be used to bring even the worst of enemies together. People perceive food differently based on where one comes from, how he was brought up, and also the social class, event or situation. In the case of famine or drought, people can practically eat anything that comes their way, without pausing for details regarding the mode of preparation or even the nutritive value. People all over the world tend to regard their own diet as sensible and the diets of other cultures as strange. Since every person must eat, what people eat becomes a powerful symbol of which they are (Fox, 2003). Although the primary use of food is to satisfy hunger and the

physiological needs (Lowenberg et al., 1979), food has increasingly exerted many roles in human life. Several established and emerging food trends affect the food consumption decisions that individuals make. These include foods that taste good because they are fresh, particularly fruits and vegetables; convenience foods that are quick and easy to buy and prepare; ethnic foods with distinctive ingredients, flavours and spices that offer variety (Asp, 1999). Food habits are among the oldest and most entrenched aspects of many cultures that exert deep influence on the behaviour of people. The cultural background determines what is eaten as well as when and how (Williams, 1985). A people's culture has a lot of influence on the kind of foods people eat in each community. In every part of the society, people have diverse feeding habits that have been inherited from generation to generation. Several factors influence the choice of the food we eat. These include availability, economy, cultural and social habits, physiological and psychological attributes, marketing methods, and nutritional knowledge, among others (Clarke et al., 1986). Food habits are slow and difficult to change because food has important psychological



associations with the family and the community. Familiar food is satisfying and reassuring, particularly the traditional foods of childhood, which evoke a deep-seated emotional response. We taste with all our senses. While it probably comes as little surprise that smell play a critical role in determining the flavour of the food that we eat, it may be surprising at just how much of our flavour perception is actually determined by the appearance of the food and drink itself.

These are cultures that have been passed on from one generation to another.

When it comes to fish, one just imagines getting it either from the fishmonger or the lake and may be frying it. Yet this rich source of protein has a number of ways in which it can be prepared. The Kalenjins have been acculturated into fish-eating which was once taboo, the Swahilis from the Kenyan coast may add some spices and coconut to give it a coastal taste, while the Luos whose staple protein is fish prefer eating it smoked and dried (e.g. the obambla) and probably consume it when almost all of its nutrients are lost.

#### **Problem Statement**

Every African society has its own set of traditional foods prepared and presented in a way that is particular to that community. The manner of preparation and presentation of these foods may not necessarily be pleasant to people from other communities. The post colonial era has witnessed increased interaction between communities on various fronts including sampling of foods from other communities. It is therefore of great importance to rationalize or improve preparation to suit the tastes and preferences of persons from a wide range of communities which may influence their perception of the food.

The objectives of this study were:

**To investigate the extent to which customers accept traditional foods from different cultures.**

**To establish the extent to which sensory characteristics of traditional food cuisines affect their general acceptability**

Questionnaires, observations, conversations and guest remarks were used to collect primary data. Structured questionnaires with close-ended questions and a journal were used. Both descriptive and inferential data were derived from the analysis using SPSS package version 17. Means, frequencies, percentages, simple

Different cultures may encourage or frown upon consumption of different foods by individuals who belong to their groups. The ethnic groups in Kenya have varying tastes when it comes to food. What one may consider a delicacy in their community may be frowned upon in another community. For example, termites are a delicacy among the Luhya who come from the Western region of Kenya, and for the Maasai community, a meal without a few litres of blood may be considered incomplete.

## **METHODOLOGY**

All customers who sampled the food formed the sample of study. The sample size comprised of a convenient randomly selected population of 88 respondents from different ethnic communities. The menu for the traditional cuisine luncheon consisted of:

**High Protein foods:** obambla (smoked fish), omena stew, karanga (beef stew), Tsiswa (fried termites), ingokho (chicken stew).

**High Carbohydrates foods:** mushenye (sweet potatoes and beans), Wimbi Ugali, nduma chemsha, malenge, Mukimo, matoke, bhajia and muthokoi.

**Assorted traditional vegetables:** mrenda, maseveve, managu, saga, nderemiat, kunde.

**Assorted fruits:** guava, cactus fruit, gooseberry (mbonik), custard apple (matomoko), sugar cane

**Beverages:** *uji wa mchele* (rice and coconut porridge), *mursik* (sour milk), *busaa* (traditional brew).

Various foods presented according to the different cultural groups were as given below:

#### **Group Food served**

Luhya: Mushenye, Ingokho Stew, Tsiswa, Maseveve, Mrenda & Karanga

Kikuyu: Mokimo, Nduma Chemsha & Malenge

Kalenjin: Mursik, Busaa, Managu (Sojot) & Assorted Traditional Fruits

Kamba: Muthokoi

Swahili: Uji Wa Mchele, Bhajia & Churtney (Coconut & Vegetable)

Uganda: Matoke And Peanut Sauce

regressions and Chi-square were used to analyze the data which is presented using Tables.

The general acceptability of the food cuisines was determined on a scale of 1-5 as follows;

1= highly unacceptable, 2 = Not acceptable, 3= moderately acceptable, 4 = Acceptable, 5 = highly acceptable. The responses were later collapsed to

1= not acceptable, 2 = moderately acceptable, and 3 = highly acceptable.

## RESULTS

From the results, the most acceptable foods to the respondents were ingokho stew, managu and bhajia with an acceptability percentage of 72% (n=64), 68% (n=60) and 68% (n=60) respectively. This high acceptability could have resulted from the fact that customers were very familiar with the foods. On the other hand, the most unacceptable foods were busaa, maseveve, wimbi ugali and obambla with the unacceptable percentage of 87% (n=78), 77% (n=68), 77% (n=68) and 72% (n=64) respectively. Busaa was unacceptable especially to teetotalers, whereas obambla attracted many flies which could have repulsed some customers while traditional fruits were very unfamiliar to many of the customers. The details are shown in Table 1.

### Perception Of Sensory Characteristics of Foods

Perception of sensory characteristics of food i.e. colour, texture, smell, taste and aroma was assessed by asking the respondents to rate the food on a scale of (1-5) as 1 = Bad, 2 = moderately good, 3 = Good, 4 = very good, 5 = Excellent. Mean score for each food was calculated where higher score indicated better acceptability.

The sensory characteristics, texture, smell, taste and aroma affected the general acceptability of foods with a mean score of 2 (not acceptable) as shown on Table 2. This means that all the foods were generally rated as having low sensory characteristics, with busaa and assorted traditional fruits scoring a highly unacceptability mean of 1 each on almost all the sensory characteristics except colour. All the other foods scored a mean of either 2 or 3. The details are as shown on Table 2.

Simple regression analysis was used for testing hypothesis about the relationship between a dependent variable (Y) and one independent variable (X) and for prediction.

The dependent variable was general acceptability of the traditional food cuisines and the independent variable was the overall perception of sensory characteristics of the traditional food. Cuisines. Overall perception of sensory characteristics of each particular food was calculated by finding the average of scores given on individual sensory characteristics.

The general responses of the sub-independent variable were again averaged to devise the main independent variable referred to as sensory characteristics of these food cuisines.

A regression of Y against X was done and the results are summarized in Table (3) and (4)

Table 1: Percentage of respondents who mentioned particular level of acceptability for various traditional foods served.

| Traditional food        | Level of Acceptability (N=88) |               |          |
|-------------------------|-------------------------------|---------------|----------|
|                         | High<br>%                     | Moderate<br>% | Low<br>% |
| Uji wa mchele           | 27                            | 18            | 55       |
| Mursik                  | 29                            | 14            | 57       |
| Matoke                  | 43                            | 21            | 36       |
| Peanut sauce            | 50                            | 14            | 36       |
| Mokimo                  | 48                            | 16            | 36       |
| Mushenye                | 40                            | 05            | 55       |
| Muthokoi                | 25                            | 14            | 61       |
| Malenge                 | 34                            | 16            | 50       |
| Nduma Chemsha           | 29                            | 21            | 50       |
| Wimbi Ugali             | 14                            | 10            | 77       |
| Bhajia                  | 68                            | 10            | 22       |
| Chutney (Coconut & Veg) | 50                            | 18            | 32       |
| Ingokho stew            | 72                            | 21            | 07       |
| Tsiswa                  | 33                            | 22            | 45       |
| Omena stew              | 25                            | 22            | 53       |
| Karanga                 | 45                            | 10            | 45       |
| Managu                  | 68                            | 14            | 18       |
| Murenda                 | 36                            | 14            | 50       |
| Maseveve                | 07                            | 16            | 77       |
| Kunde                   | 18                            | 16            | 66       |
| Obambla                 | 14                            | 14            | 72       |
| Busaa                   | 03                            | 10            | 87       |
| Assorted fruits         | 22                            | 07            | 71       |

The regression equation

$$Y = -0.029 + 1.268X + \mu$$

From the above model, we can note that there exists a positive relationship between general acceptability of the food cuisines and sensory characteristics of the food cuisines, based on the positive coefficient that relates the two variables.

The coefficient  $\beta_{x1} = 1.268$  is the sample parameter estimate of the population parameter  $\beta_1$ . It shows that when sensory characteristics of food cuisines changes by a unit percentages general acceptability of the food cuisines changes by 126.8%. It follows then that a unit increase in the sensory characteristics of the food cuisines will improve general acceptability of the cuisines by 126.8% and vice versa. A unit increase in sensory characteristics of the food cuisines would encompass all the sub-variable that make it up including colour, texture, smell, taste and aroma of the food cuisines.

T-test (Test of research Hypothesis)

In order to test the stated hypothesis, statistical significance of the parameter estimates was established and thus enabling the researcher to establish the significance of the variable in the model.

The 95% confidence interval for this estimation of  $\beta=1.268$  ranged between 1.068 and 1.469 for the lower and upper bound respectively. The true population parameter would lie in this range on 95 occasions out of one hundred occasions this parameter is estimated. The standard error of the estimate stood at 0.096. This is a small value which implies more reliable prediction of  $\beta^1$ . It is the estimate of how much the regression coefficient will vary between samples of the same size taken from the same population and use them to calculate the regression equation; this would be an estimate of how much the regression coefficient would vary from sample to sample.

The sample estimate  $\beta^1 = 1.268$  was found to be statistically significant at 1% level with 42 degree of freedom with  $t_1 = 13.208$ . Clearly, sensory characteristics of the various traditional foods were a significant determinant of general acceptability of various traditional food cuisines. Since the two variables relate positively, then to improve the general acceptability of the traditional food cuisines, the sensory characteristics of the food cuisines has to be improved. In essence, all the sub-variables making up sensory characteristics of food have to be improved including colour, texture smell, taste and aroma. With this result, we accept the hypothesis that sensory characteristics of food cuisines significantly affect the general acceptability of the food cuisines.

Chi – square ( $\chi^2$ ) test

Chi-square statistic was used to test the general acceptability of the 23 traditional food items against the tribe of respondent (customer). The hypothesis that H: General acceptability of the various traditional food cuisines does not depend on the tribe of the customer was tested against the hypothesis H: that general acceptability of traditional food cuisines depends on tribe of customers.

The resultant chi-square value  $\chi^2 = 0.174$  was less than the computed value of  $\chi^2 = 33.9$  at 5% level of significance with 43 degrees of freedom. The

null hypothesis that general acceptability of the traditional food cuisines does not depend on the tribe of customer in thus accepted and the alternative, as stated, is rejected. The inference is that customers will accept or prefer any traditional food item regardless or irrespective of their tribe or regardless of the fact that cuisine is from their culture.

More effectively is that tribe does not play a role in customers' choice of the various traditional food items. The general acceptability of the traditional food cuisines was determined on a five-point scale. The general acceptability for each food was then averaged to derive the index of acceptability for the combined set of 23 foods. The customers were drawn from different ethnic background and their general acceptability of the cuisines analyzed against their tribe to find out if a relationship existed by way of Chi-square.

## DISCUSSION

The consumers' responses were overall positive, the luncheon was well attended and the consumers felt that it should be done more often. There were some critical comments by the guests especially on unfamiliar food items. As much as some were inquisitive, termites were a 'no-no' to most of the guests. While others made funny comments on vegetables that they had never eaten. Men were more excited than women and they were ready to pay whatever amount for the food. In fact they came up with ideas of how to make it easier for one to eat mrenda- a slippery vegetable - the use of scissors. A customer refused to serve tsiwa claiming that he ate them before he was circumcised and hence he could not eat them now as a man. Apparently, people put their lines of action and thoughts together, using past experiences to make food choices in new food contexts.

However, during a cuisine experience, the customers filled their plates to the brim probably because of the following reasons:

- Over- excitement about display and variety in the cuisine.
- Lack of knowledge about buffet set up.
- They were not properly led by the waiting group.
- Limited time/ lunch break as they did not want to re-serve.

**Table 2: Sensory characteristics of food and the mean of the general acceptability of the foods**

| No. | Traditional food              | Colour   | Texture  | Smell    | Taste    | Aroma    | Average  |
|-----|-------------------------------|----------|----------|----------|----------|----------|----------|
| 1   | Uji wa mchele                 | 2        | 2        | 2        | 3        | 2        | 2        |
| 2   | Mursik                        | 2        | 2        | 2        | 3        | 2        | 2        |
| 3   | Matoke                        | 3        | 3        | 3        | 3        | 3        | 3        |
| 4   | Peanut sauce                  | 3        | 3        | 3        | 3        | 3        | 3        |
| 5   | Mokimo                        | 3        | 3        | 3        | 3        | 3        | 3        |
| 6   | Mushenye                      | 3        | 3        | 3        | 2        | 3        | 3        |
| 7   | Muthokoi                      | 2        | 2        | 2        | 3        | 2        | 2        |
| 8   | Malenge                       | 3        | 3        | 3        | 2        | 2        | 3        |
| 9   | Nduma Chemsha                 | 3        | 2        | 2        | 2        | 2        | 2        |
| 10  | Wimbi Ugali                   | 2        | 2        | 2        | 3        | 2        | 2        |
| 11  | Bhajia                        | 3        | 3        | 3        | 3        | 3        | 3        |
| 12  | Chutney (Coconut & Vegetable) | 3        | 2        | 2        | 3        | 2        | 2        |
| 13  | Ingokho stew                  | 3        | 3        | 3        | 3        | 3        | 3        |
| 14  | Tsiswa                        | 2        | 2        | 2        | 2        | 2        | 2        |
| 15  | Omena stew                    | 2        | 2        | 2        | 2        | 2        | 2        |
| 16  | Karanga                       | 3        | 2        | 2        | 2        | 2        | 2        |
| 17  | Managu                        | 3        | 2        | 2        | 3        | 3        | 3        |
| 18  | Murenda                       | 2        | 2        | 2        | 2        | 2        | 2        |
| 19  | Maseveve                      | 2        | 2        | 2        | 2        | 2        | 2        |
| 20  | Kunde                         | 2        | 2        | 2        | 2        | 2        | 2        |
| 21  | Obambla                       | 2        | 2        | 1        | 1        | 1        | 1        |
| 22  | Busaa                         | 2        | 1        | 1        | 1        | 1        | 1        |
| 23  | Assorted traditional fruits   | 2        | 2        | 2        | 2        | 2        | 2        |
|     | <b>MEAN</b>                   | <b>2</b> | <b>2</b> | <b>2</b> | <b>2</b> | <b>2</b> | <b>2</b> |

**Table 3: Coefficients**

| Model    | B      | Std Error | t      | Sig   | Partial correlation |
|----------|--------|-----------|--------|-------|---------------------|
| Constant | -0.029 | 0.008     | 3.346  | 0.000 |                     |
| X        | 1.268  | 0.096     | 13.208 | 0.000 | 0.944               |

**Table 4: Model Summary**

| Model | R     | R-Square | Adjusted R-Square | Std Error of the estimate | Change Statistics |          |     |     |             |       |
|-------|-------|----------|-------------------|---------------------------|-------------------|----------|-----|-----|-------------|-------|
|       |       |          |                   |                           | R square change   | F change | df1 | df2 | Sig. change | F     |
| 1     | 0.944 | 0.891    | 0.814             | 0.317                     | 0.891             | 42.256   | 1   | 42  | 0.000       | 2.116 |

Fear of the best dishes getting finished.  
 Fear of the unknown. Conversations with the respondents solicited some comments such as:  
 ‘This should be done more frequently – from male participants.  
 ‘The obambla fish was very nice’, who bought it? from a male participant.  
 ‘The slimy vegetable –mrere should be served with scissors to cut off the trail and make it easier to pick and mouth-from a male participant.  
 ‘Our wives are giving us a raw-deal; we will go shopping for spices and food for ourselves.’

‘Tomorrow I will go to the kitchen myself’ -from a male participant.  
 Consumers may make cuisine choices using perceived notions of culinary the characteristics of the dishes and comparisons of the familiar foods with the served dishes, so that if it looks almost like what they have seen and tasted before, then they may be inquisitive to have a new experience for comparison purposes. If they tend to like the food, then they are likely to make positive comments and also make judgments using their

day to day experiences especially from a home environment.

## **CONCLUSIONS AND RECOMMENDATIONS**

**From this study it was found that customers accept traditional foods from different cultures and that sensory characteristic of food affect the general acceptability of cultural foods. Ethnic cohesiveness and integration is achieved during such occasions and appreciation of different ethnic foods is adopted through cognitive, symbolic and cultural perspectives of the dining moments. The fact that different foods are sampled on such an occasion enables the consumer to achieve some nutrition security to some extent. Therefore, it is recommended that food outlets in universities attempt to provide traditional foods from different ethnic groups more frequently based on demand. Frequent sale of different foods can enhance easy acceptability of food from diverse ethnic communities and greater understanding of different cultures**

**through interaction, and social cohesiveness in the long run.**

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# IMPACT OF LOW COST HOUSING ON THE PERCEIVED QUALITY OF LIFE AND WELL-BEING OF ITS OCCUPANTS

. Charlene J Erasmus

Department of Human Ecology University of the Western Cape Town, South Africa

cjerasmus@uwc.ac.za

## ABSTRACT

Housing issues within the South African context continue to provide challenges to all role players. Human ecologists agree with the government's view that a house encompasses more than a structure, and that its environment and location are equally important in meeting the needs and expectations of the occupants. This study was undertaken to establish whether the planning and building of housing units do indeed comply with government policy and adhere to the set standards for houses being "more than just a structure". In this study evaluation research was undertaken using multiple data collection techniques such as documentary content analysis, a semantograph, focus groups and a survey conducted by means of a structured questionnaire. This article will only report on the quantitative research methodology where a questionnaire was used to ascertain to which extent the needs of individuals in a low cost housing development in Cape Town, South Africa, had been met in compliance with indicators for healthy housing. The sample of the study was systematically selected and included 400 households. Descriptive statistics were used to analyse the data. The research found that the houses developed did not contribute to improved health and the quality of life amongst the inhabitants.

*Keywords: low cost housing, communities, evaluation, quality of life, housing policy, and well-being*

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## INTRODUCTION

Access to housing and safe accommodation is an integral part of government's commitment to poverty relief and the improvement of well-being of people. Within the context of poverty alleviation housing can play a significant role in the socio economic upliftment of the poor. The Housing Act (107 of 1997) underwrites the Constitution of South Africa (Act 108 of 1996) which enshrines the right to adequate housing and describes housing development as "a variety of processes through which habitable, stable and sustainable public and private residential environments are created for viable households and communities". Housing is seen as "both a product and a process that is vital to the socio-economic well-being of a nation". The Act acknowledges that the environment, in which a house is situated, is just as important as the house itself to provide for the basic needs of the occupant (Act 107 of 1997). Human Ecologists agree with this view of government that a house encompasses more than a structure, and that its environment and location are equally important in meeting the needs and expectations of the occupants.

Urbanization leads to an increase in new urban developments, as well as to the expansion of existing urban areas. This swift increase in the

numbers of city dwellers and spatial growth happened without the essential development of public services and facilities (Mtembi-Mahanye, 2002). As a result this led to uncontrolled urbanization, unlawful land occupation and the rise in expenses with regard to the financing of crucial services and housing (Mtembi-Mahanye, 2001; Braaf, 1998). Large scale migration, high population growth, urban development's and poverty are a few factors that led to environmental degradation, insufficient physical infrastructure and services, health consequences, increased exposure to concentrated refuse, unsustainable resource use and the overpopulation of environmentally sensitive land (Hope & Lekorwe, 1999).

Suitable neighbourhoods/residential areas can be expressed in terms of physiological needs such as comfort and protection against the elements and psychological needs such as community- and family life (De Silva, 2002; Cohen, Mulroy, Tull, White & Crowley, 2004). (Merrington, 1998 in Meyer) emphasizes this "The residential environment mankind uses for shelter, includes the shelter structure and all the facilities, utility and services necessary for the physical and mental health, social well-being of the individual and the family and which are needed to link the individual and the family to the community...". With the

development of low-income housing projects, the emphasis should thus be on the housing needs and expectations of the community for which it is planned.

The contradictory nature of housing policy is reflected through the fact that government strives to implement a human orientated policy through developer driven strategies (Bond, 2000; Jenkins, 1999; Lalloo, 1999; Tomlinson, 1998). Developer driven strategies lead to the solving of communities' immediate problems, but are seldom extended beyond the completion of projects and therefore do not lead to greater community influence in the decision making processes (Miraftab, 2003). The slow speed and scope with which government provides low cost housing created the perception that the emphasis on human development within housing development is not being adhered to. The aim of the main study was to develop a holistic evaluation model for low-cost housing from the perspective of human ecology. The research objectives were to obtain information about circumstances and conditions within a specific community (Objective 1). The study endeavored to develop a holistic housing evaluation model (Objective 2) based on housing indicators for healthy housing. A questionnaire (objective 3), corresponding with the compound model, was designed to ascertain to which extent the needs of individuals in the Wesbank community (Objective 4) had been met in compliance with the indicators. A community profile (Objective 5) of Wesbank was then drawn up accordingly. This paper however reflects on the findings of the survey (objective 3) which focused on the impact of low cost housing on the health and well-being of people.

## METHODOLOGY

The study made use of evaluation research which was undertaken using multiple data collection techniques. A holistic housing evaluation model (HHEM) based on housing indicators for healthy housing was developed (Erasmus, Albertyn & Schutte, 2008). The HHEM served as a basis for the questionnaire used in a survey conducted in a low cost housing development. The HHEM was compiled after examining South African government policy and legislation, analyses of the literature and identification of the indicators obtained from focus groups aimed at determining housing quality. The HHEM was used as a

framework for the development of the questionnaire, which was applied as a survey in the low-cost housing area of Wesbank. By applying the HHEM, a community's needs and other related housing aspects can be identified and then use to construct a community profile. Meaningful conclusions can be made regarding issues in that community and then visually displayed in a model for easy application by development practitioners.

### Research Setting

This low cost housing development, consisting of 5174 housing units, is situated within the poverty stricken south east area of the metropole, about 30 km from Cape Town (Wyngaard, 2002). It accommodates more than 60% of the population of Cape Town but provides less than 16% of the formal work opportunities within the metropole. This area's economic contribution to the metropole's formal business output for 2000, for example, was less than 7% (Provincial Development board of the Western Cape, 2002).

### Quantitative approach

#### Research subjects and sample

The sample of the study was systematically selected and included 400 households. The study area was divided into 14 survey areas. In some of the 14 areas every eighth (8) dwelling and in other survey areas, every fifth (5) dwelling was selected. This was depended on the amount of respondents which needed, proportionally to the area, to be visited.

#### The Instrument

Housing indicators were selected from a literature review, document analysis and focus groups. The dendrogram technique was used to conceptualize the various concepts/key words which formed the basis for the questions for the questionnaire. The questionnaire consisted of 31 close ended- and 16 open-ended questions which were grouped into 3 sections. The first section requested demographic information. The other two sections were divided into the micro/individual level (economic and socio-psychological issues, physical structure, physical security and privacy) and the community level (infrastructure, environment, community building and land use).

Content validity of the questionnaire was ensured through constructive criticism from housing experts. Items were revised and

improved according to the suggestions made. Adaptations were word and language changes, sequence of questions, combination and/or separation of concepts. A pilot study was conducted to check for clarity and appropriateness of the questions on fifteen (15) individuals with variables comparable to the research setting with regard to income, socio-economic living area and educational level.

Administration of questionnaire

Face-to-face administration of the questionnaire was applied because it requires the respondent to respond in the same language as the questions being asked. With this type of interview the respondent need not be able to write or read. The interviewer can also probe, explain and clarify uncertainties and vaguenesses around questions (Bowling, 2005).

#### Data collection

Ten trained fieldworkers conducted structured interviews over a period of four weeks with heads of households in previously identified homes. The fieldworkers were trained in understanding and interpreting the questions on the questionnaire. The majority of interviews were conducted at night after most of the respondents returned from work. All completed questionnaires were usable. As the questionnaires were completed, they were checked by a control person for completeness.

#### Data analysis

Data was analysed using SPSS version 16. Frequency tables were used to summarize responses from the survey. Thematic analysis was applied to qualitative responses. A numeric code was allocated to each response before it was analysed. Logical links were made based on existing literature.

#### Ethical Considerations

The research assistants used information sheets to explain the purpose of the study to potential participants. Information obtained was handled with confidentiality. Participation was voluntary and participants were informed of their right to withdraw from the study at any time. Ethical clearance was obtained from the Senate Research Grants and Study Leave Committee of the University of the Western Cape.

## RESULTS

This discussion reflects on the findings of research which focused on the impact of low cost housing on the health and well-being of people. Four

hundred heads of households in the low income group earning less than R3500 per month completed the structured questionnaire. More women-headed households (72%) took part in the interviews and most participants were aged between 31-40 years of age. The largest amount of respondents (48%) had only partial secondary education. One hundred and fifty one (37,8%) had only primary education and this led to a low income and very few employment opportunities. Forty one (10.3%) of the respondents had a full secondary education (Gr 12) and no one had any tertiary training.

The majority of women (46,3%) contribute to the income of their households. Twenty one participants (5,3%) indicated other forms of income such as assistance from family members not staying with them, married children that sends money, maintenance from a divorced father and an income from a tuck shop. More than three quarters (79%) of participants (n=314) indicated that their home was not a source of income, 86% (n=349) view their home as their property, and 55% does not view their home as an economic investment.

The dwellings were build out of cement blocks and 93, 7% indicated that the building was of a poor to a very poor condition. The biggest problems were experienced during the Cape Town winters when it is extremely cold and wet, 91% (n=368) of the respondents agreed with this. A highest percentage of respondents, 80,5% (n=322), was dissatisfied with the small size of the physical structure, which has too little space for their families. One hundred and fifty two respondents (38%) indicated that they preferred a bigger house with more rooms. 60,5% of respondents expressed unhappiness with the lack of privacy. There is only one room which must be shared with both parents and children. Land use is characterized by the extension of their dwellings through extra structures built on to their existing structures to provide extra place for own family members to stay in. This is a reflection on the limited space and size of the dwellings. Approximately 45,5% indicated that their property does not lead to better health and a 39% was of the opinion that their housing does not conform to their basic needs.

With regard to the socio-psychological aspects of housing, 46% agree that they are happy to stay in Wesbank, 46.3% agree that they can rely and depend on the rest of the community if they



experienced any problems. On the question whether this area is a suitable place to raise children, 59,9% (n=240) of the respondents did not agree. Most of the respondents (57,7%) view their dwelling as a place of refuge/haven to which they can return. 46,3% agreed that they can trust and depend on the community to assist when they have a problem. On the question whether this housing development led to improved socio-economic well-being of the community, 44, 2% agreed, 26,7% remained neutral and 28,7% disagreed. The majority of the respondents (67, 4%) were of the opinion that they can live out their cultural/religious beliefs. This opinion is echoed by the respondents' satisfaction with regard to the provision of churches.

At community level most of the respondents reacted positively to services such as provision of water (66%), electrical supply (58, 2%), waste removal (66,5%) and sanitation (61,2%) within their area. Respondents were overly satisfied (66%) with the schools in the community. Great dissatisfaction was shown with regard to health care (clinic/day hospital) (65, 4%), youth centre (74%), community hall (75, 4%), library (78, 2%) and the police station (92, 2%). They were nevertheless satisfied with the nursery school (70, 2%) and churches (78, 4%) within their community.

## DISCUSSION

The majority of inhabitants do not use their dwelling as an additional source of income; this might be as a result of the dwelling being so small. They do not view the physical structure as an economic investment or benefit and this can possibly be because they do not understand the concept and value of ownership and security of tenure. This can also be attributed to the poor quality of the housing and therefore seem to have no value.

Housing development as described in the Housing Act (107 of 1997), states that all inhabitants should have access to permanent residential structures with security of tenure, internal and external privacy and sufficient protection against the elements. The results of the study has shown that the criteria as stated above has not been met - dwellings are of poor quality built from inferior cement blocks which have a high water retention ability. Complaints about poor building reflects upon poor workmanship, inappropriate

construction techniques, low quality building material which leads to cracks in walls, leaking roofs and windows, with the result that the buildings/physical structures became mouldy and remained damp and wet. The fact that everything remains wet increases the cold temperature in dwellings. This in turn influences the comfortability and habitability of the home with resultant dissatisfaction of the inhabitants towards their housing unit. This is in direct contrast to the definition of housing development as described in the Housing Act (107 of 1997), which states that livable, stable and sustainable public and private living environments must be created. This housing development appears to be less successful towards the delivery on this required outcome.

The results also showed that the poor quality of the physical structure do not contribute to the overall health of the inhabitants. Health problems such as tuberculosis, colds, bronchitis and related respiratory infections are common in here. Indoor air quality, humidity, low temperature and overcrowding are a threat to the health of occupants (The World Health Organization, 2004). Proper ventilation and sufficient windows are important because lack of ventilation creates condensation on walls and ceilings (Sowman & Urquhart, 1998). A lack of sufficient ventilation and poor temperature control increase the level of mould and dampness as well as the problems created by these (San Francisco Department of Public Health, 2004:5). Water leakages in homes stimulate mould growth and this influences the air quality of homes (Winston & Turner, 2001:65). Damp conditions in homes can be viewed as contributing factors to rheumatism, arthritis and respiratory infections as well as illnesses such as pneumonia and bronchitis (Smit, 2000; Marsh, 1999; Ranson, 1991). It is to be expected that the health problems will increase as a result of the poor physical structure, the type of building material used, insufficient ventilation (not enough windows) and poor temperature control. These circumstances increase during the winter months when rain and wind damage complicates the situation.

As a result of the limited space and small housing units a serious lack of privacy was reported. A shortage of living space not only contributes to the disintegration of extended families, discomfort and insufficient privacy, but causes an acute link between insufficient living space and

psychological insecurity (Gabe & Williams, 1993 in Smit, 2000). This does not lead to an improvement in the quality of life of people or to the improvement of good health. Therefore it seems that the dwellings do not meet the basic needs of their inhabitants. The low household income (about R3 500 and less per month) leads to no changes or improvements on their properties. As a result of limited financial resources, respondents feel disempowered to bring about changes to their structure. Developers must take this fact into consideration and must provide beneficiaries with structures that has better finishes and demand the least amount of maintenance.

Within the context of this community it appears that issues such as provision of services (water, electricity, refuse removal) and the accessibility of certain facilities (educational institutions, cultural facilities and the family clinic) created a feeling of satisfaction with the inhabitants. This in itself adds value to a healthy environment and good health. The majority of respondents indicated that they are happy to stay in Wesbank, but more than half was of the opinion that it is not a good place to raise children. This is probably as a result of the limited development of youth and community facilities. Most of the respondents view their dwelling as a place of refuge/haven to which they can return and agreed that they can trust and depend on the community to assist when they have a problem. The majority was of the opinion that they can exercise their cultural and religious practices. This viewpoint is emphasised by the high percentage of satisfaction with regard to the provision of churches.

At the core of governments housing strategies lays the acknowledgement of the creation of suitable residential environments. The only way to establish long term viability and thus sustainability is to ensure that housing adhere to the preferences, aspirations and changed needs of existing and prospective inhabitants. South Africa's housing policy and programmes are in accordance to the "International Covenant on Economic, Social and Cultural Rights" of 1966's definition of adequate housing, which states that "'adequate housing' is measured by certain core factors: availability of services; materials, facilities and infrastructure and location" (The UN Committee on Economic, Cultural and Social Rights, 1992), but unfortunately this is not

reflected in practice (Public Service Commission, 2003).

## CONCLUSION

From the findings of this study it appeared that aspects such as the quality of the physical structure, space and privacy, sufficient and sustainable provision of services and accessibility to facilities determine how the occupants of low-cost housing experience their structures. Strong opinions have been voiced about a serious shortage of privacy and the poor quality of the housing structures, the latter resulting in conditions of ill health. The research found that development of housing in this low-income development did not contribute to improved health and the perceived quality and well-being of its inhabitants.

It is recommended that developers should first undertake a complete and thorough survey of the beneficiaries of proposed housing developments. Participation by beneficiaries should be encouraged in any housing process to ensure that the right type of housing will be built and developed for the right type of community. This could possibly ensure the sustainability of their communities.

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## CAREER PROFILE OF HOME ECONOMICS POST GRADUATES FROM RLAK CHE KARACHI

Rubina Hakeem, Madiha Perveen, Rumaisa  
Naseem, Naveeda Bano, Qurat-ul-Ain, Khalida Hafeez  
Rana Liaqat Ali Khan Government College Of Home  
Economics Karachi

### Abstract

In Pakistan home economics was introduced in 1952 and graduates of this field have been entering various vocational fields. However there is a gross misconception among general public and policy makers about its vocational importance. This study was conducted to assess the rate of utilizing home economics education for gainful employment by students of Rana Liaqat Ali Khan Government College Of Home Economics Karachi who completed post graduate education from 1960 to 2006. Sample was recruited through snow ball technique and at least a few person from each year were contacted to get information about gainful employment of the respondent and their classmates. It was revealed that during all decades at least 60% of the postgraduates entered gainful employment. It is hoped that results of this study would help in clarifying misconceptions about home economics and such studies needs to be conducted on a larger scale.

*Keywords: Home Economics careers, women employment, Home Economics education*

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### INTRODUCTION

Home economics emerged as a field of study in early 1800's (Stage and Vincenti 1997). The subject reached Pakistan in 1950's that was just two years after the creation of this country. Four colleges were established by government of Pakistan with the financial assistance of Ford Foundation and Academic leadership from Oklahoma and Iowa State Universities of USA. All Pakistan Women Association participated in coordination and monitoring activities (Henry L 1972) . Masters education was started in early 1960's with limited specialization as students opted for any three home economics subjects in year 1 and two in year 2. Till the end of 1990 the maximum enrolment allowed was 20 for master's classes. In 1991 extent of specialization and enrolment was increased to 100. Beside general subjects like Home Economics Education, Statistics and Research, students were required to take three courses in each year from any one area of specialization (RLAK CHE 2010).

As in other parts of the world (Grundy and Henry 1995; MacDonald and MacDonald 1927) Home Economics in spite of making important contributions to society did not succeed in gaining the popularity considered and deserved by Home Economists . Misconception regarding career options is one of the probable reasons (Alvi 2008; KalPoint.com 2005.) Regardless of misconception the misconceptions Home Economists continue to serve the community in most part of the world though the name of the subject is now varied in different areas. This study aimed at assessing the utilization of qualification and learning for gainful employment by home economist who graduated from this college in the past fifty years.

### METHODS:

From each year one contact person who did post graduation in the particular year was identified through personal contacts. As all the teachers of Home Economics at RLAK CHE are post graduate from this college this step was not very difficult. Each contact person was given a questionnaire to fill that asked about career related details and current contact information of respondents' classmates. On the basis of these responses other alumni of this college were contacted and career related details were collected through phone email or personal visits. Overall rates of gainful employment and that from various areas of specialization were calculated.

### RESULTS

Initial contacts were made with source persons for 37 years out of total of 44 years ranging from 1963 to 2006. The missing years were 1964, 1966, 1967, 1971, 1975, 1978 and 1979. On this basis 37 contact person's information about careers was retrieved from about 458 alumni. Numbers of respondents from various area of specialization were 117 from Food And Nutrition, 83 from Clothing And Textile, 50 from Family Relations And Child Development, 98 from Related Arts, 66 from Home Management and 44 from Home Economics Education.

It is to be mentioned that prior to 1991 student usually considered themselves to be specializing in the subject in which they conducted their compulsory research project.

Percentage of respondents who ever remained in gainful employment is given in figure 1. Overall nearly 80% of home economics post-graduates enter gainful employment. The percentage is relatively low for 2001-2206 as most of the fresh

alumni forms 2006 were still looking for jobs. The kind of profession in which home economists entered is given in figure 2. About two third of subjects who entered gainful employment had been teachers. Among the remaining one third

dietetics (14%) and administration (11%) were the areas in which the home economists were employed. Three percent each worked a textile designer, interior designer and beautician and 2% worked for media.

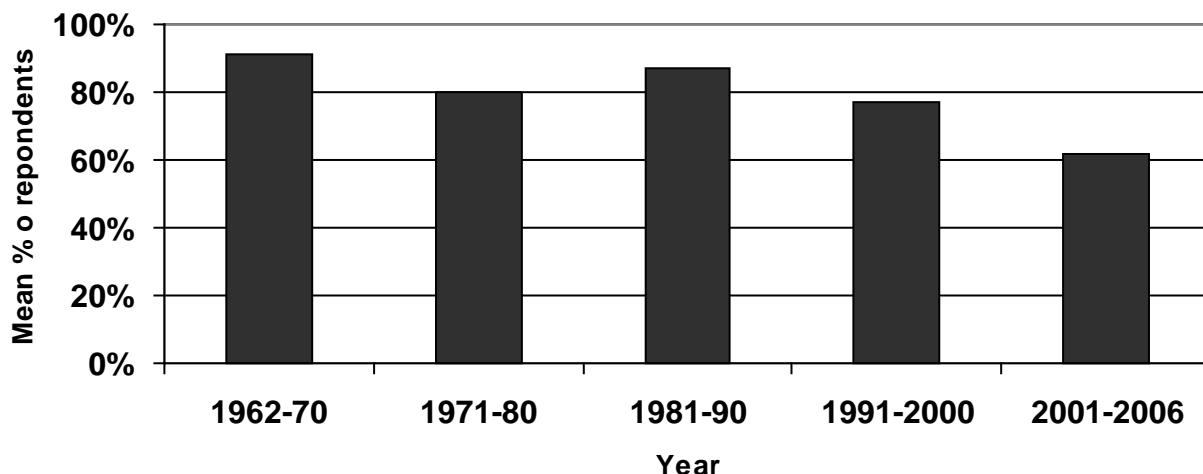


Figure 1: Percentage of post graduate who are/have been involved in gainful employment according to year of graduation

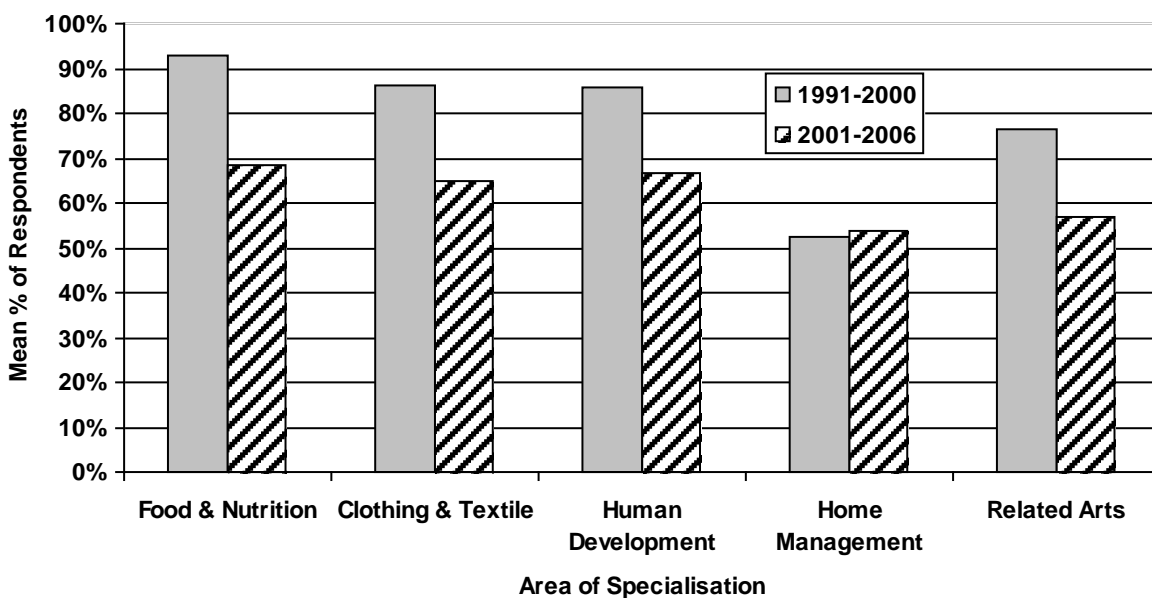
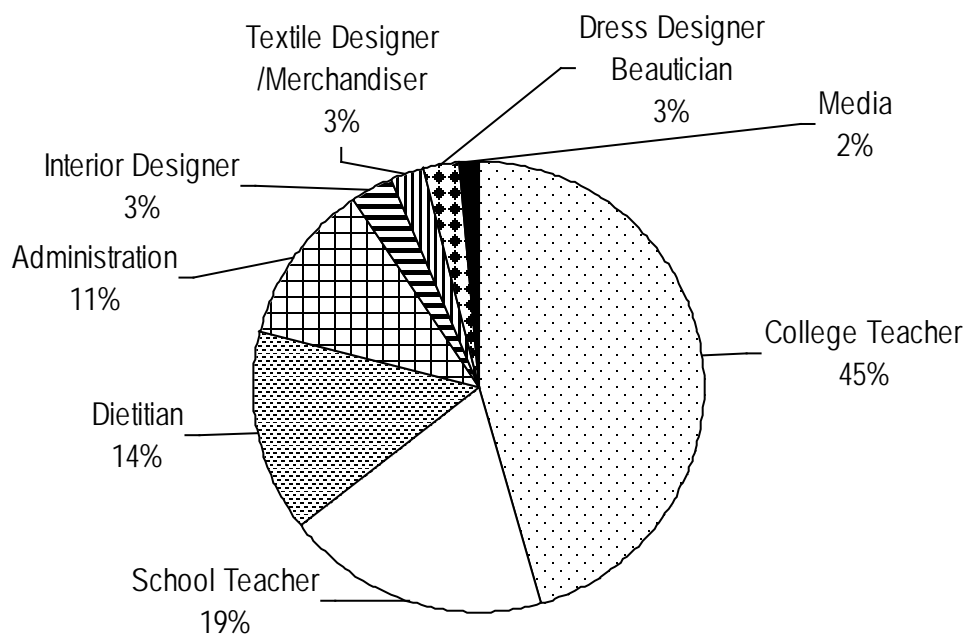


Figure 2: Percentage of post graduates with specialization who are/have been involved in gainful employment according to area of specialization and decade



**Figure 3: Percentage of employed postgraduates working in various professions**

### DISCUSSION

This paper explored that rate of gainful employment by home economic postgraduates and provided evidence that a vast majority of home economics graduates enter gainful employment. There are no evidence based comparable statistics available for other fields but it is estimated that rates are much higher than any other field of study in which females enter in Pakistan. For example though the female to male ratio is higher in relation to enrolment in medical colleges it is lower in relation to registration in Pakistan medical and dental council. This reflects the lack of interest of female medical graduates in entering gainful employment. This paper provides some evidence for refuting the myths that that graduates of home economics only sit at home and that the opportunities of using education for financial gains are less for graduates of home economics as compared to other fields.

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## VIEWES OF DIETITIANS FOR THE NEED OF GENERIC FOOD PHOTOGRAPHIC ATLAS (PFPA)

Farzana Asar, Rubina Hakeem Hafsa Rafi  
Rana Liaqat Ali Khan Government College of Home  
Economics Karachi.

### ABSTRACT

Two of the authors has been working for development of a food photographic atlas for use in Pakistan. In view of observations made on draft food photograph atlas authors decided to develop a generic rather than specific FPA. As food photograph atlases (FPA) are mainly used by dietitians their opinions about FPA are valuable. Thus this study was designed to find out potential for use of FPA by dietitians and their opinion about generic FPA. The data was collected through self administered questionnaire method from 30 dietitians working in local hospitals of Karachi. Respondents identified need for FPA as they mentioned encountering several problems in dietary assessment that can be resolved by using FPA. Almost all (95%) o the respondents agreed that instead using a large number of pictures o different foods only pictures o selected food can be used to represent particular shape and consistencies of foods .

*Keywords: Food Photograph, Diet assessment, Dietitians, Pakistan*

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### INTRODUCTION

Food photographs are very cost effective tool for increasing accuracy of assessment of food intake as well as for demonstrating food amounts (Frobisher and Maxwell 2003;Turconi et al. 2005). Use of food photographs is particularly helpful in situations where there are language and literacy limitations. However, probably due to limitations in preparation use of FPA is still very limited. A quick review of Medline indicates that in only handful of studies where FPA have been used (De et al. 2010;Foster et al. 2006;Frobisher & Maxwell 2003;Huybregts et al. 2008;Nelson and Haraldsdottir 1998;Ovaskainen et al. 2008;Robson and Livingstone 2000;Turconi, Guarcello, Berzolari, Carolei, Bazzano, & Roggi 2005). It is assumed that in dietetic practice the use would be still limited. One of the reasons for this situation may be that the food photograph atlases aim at representing portions according to weight of particular foods and amount represented is mentioned in terms of weight. This makes use of pictures very limited and a large number of pictures are required to

represent commonly consumed foods. FPA with a large number of pictures may be too time consuming to use. The large number of photographs could be used for electronic uses but for hard copies it increases both publication cost and time spent in using the photographs.

Other reasons limited use of FPAs could be that most of them have been designed mainly for uses in particular population. The rationale of selecting foods and portion sizes has been based on food consumption pattern of particular population and specific age group. Most of them have been designed for use in affluent countries and applicability in other areas is limited.

Hakeem et al initiated development of FPA for use in Pakistan and students of RLAK CHE evaluated the draft version (Razzak et al. 2011). However after experimenting with food photographs for several years the researchers decided that a generic food photograph atlas that has potential for using one food photograph for assessing intake a larger number of foods having similar appearance in terms of consistency and shape could be more cost effective and user friendly than food photographs that represent only one or a limited number of foods that are similar in weight. Prior to development of Generic FPA this study was conducted to assess potential usefulness for dietitians in Pakistan.

The present study was planned with following objectives:

1. To find out the tool mostly used by dietitians to assess the diet.
2. To find out the problem that is mostly faced by dietitians during dietary assessment.
3. To find out the opinion about FPA its usefulness, convenience and pattern.

### METHODOLOGY

The present study was planned to find out the views of dietitians about development of a Food Photographic Atlas for Pakistan. The data was collected through self administered questionnaire method to find out opinions and suggestion about developing Pakistani FPA. The questionnaire comprised of questions and suggestions about the assessment tool they had been using then, what kind of obstacles they encountered during explaining the diet and its amount to patients; then which type of assessment tool are most useful and convenient in this Pakistani version of FPA. Finally their expectations about upcoming

FPA as it could be pictures of shapes and forms representing different foods then opinion and suggestion for Pakistani FPA.

First of all pre-testing of questionnaire was helpful enough in developing the result that was required. Five questionnaires were filled to find whether collected data is well enough to give appropriate result. After pre-testing it was found that questionnaire was slightly lengthy because it has so many options; so two questions were omitted and a new question were added with limited options.

Data was collected from dietitians, for this purpose first surveyed the hospitals to meet the dietitians and gave them questionnaires to fill for an appropriate result.

Data was analyzed statistically by means of SPSS version 14.

## RESULTS

Dietitians were categorized according to their length of experiences as, five years and below assumed as short experience five to fifteen assumed as medium and above fifteen taken as long. Most of the dietitians (53%) were experienced below 5 years and few were above fifteen, so we were found that mostly there are new comers in the field of dietetics.

Models representing food size (food size models) were the most frequently used tool though only 33% dietitians used it. Food pictures or Food atlas was not even ever seen by about two third of respondents (Table 1)

**Table 1: Number and percentages of dietary assessment tool used or seen by dietitians.**

| Dietary assessment tools            | Used |      | Seen |      | Neither |      | No response |      |
|-------------------------------------|------|------|------|------|---------|------|-------------|------|
|                                     | No.  | %    | No.  | %    | No.     | %    | No.         | %    |
| Electronic copies of food pictures  | 2    | 6 %  | 7    | 23%  | 20      | 66 % | 1           | 3 %  |
| Hard copies of food pictures        | 7    | 23 % | 5    | 16%  | 17      | 56%  | 1           | 3 %  |
| Food size models                    | 10   | 33 % | 7    | 23 % | 12      | 40%  | 1           | 3 %  |
| Food photographic atlas             | 1    | 3 %  | 4    | 13 % | 20      | 66 % | 5           | 16 % |
| Actual food models                  | 1    | 3 %  | 6    | 20%  | 19      | 63 % | 4           | 13 % |
| Other tools mentioned by dietitians | 3    | 10%  | 0    | 0%   | 0       | 0%   | 0           | 0%   |

More than 60% of the respondents had faced difficulty in understanding type and amount of food eaten by their patients.

**Table 2: Problem faced by dietitians in dealing with patients**

| Problems   | No | Ye<br>s<br>% | Unsu<br>re<br>% |
|--|----|--------------|-----------------|
| Could not understand the type food eaten by patients   | 30 | 67           | 3               |
| Difficulty in explaining the serving size to patients. | 36 | 54           | 10              |

To know the expectation of dietitians about upcoming pattern or presentation. They were asked that is it appropriate to include shape and consistencies of similar type of food with different portion size instead of all kind and types of food pictures in food photographic atlas for example similar type of cooked lentils could be represent by one picture, according to most of the dietitians (89%) thought that that it was a very good idea to present food pictures representing foods of similar shapes and consistencies. For representing

amount of liquids cups and glasses were considered more important containers than bottles and mugs. For the assessment of similar looking solid food cubes and balls were selected by most of the respondents and some also selected rectangle shape for solid food.

**Table 3: Opinion of dietitians about including pictures o selected foods in FPA based on shapes and consistencies.**

| Opinions       | No. of dietitian | % of dietitians |
|----------------|------------------|-----------------|
| Very good      | 13               | 43.3%           |
| Good           | 14               | 46.7%           |
| Acceptable     | 5                | 16.7%           |
| Not acceptable | 1                | 3.3%            |

Almost all the respondents viewed forthcoming FPA as very useful and convenient tool for dietary assessment and educating patients about food portions.

## DISCUSSION

To change the pattern of FPA it was very important to take opinions of its users, and we found that according to 40% it's good and 45% it's



**very good to include shape and consistencies of similar type of food with different portion size instead of all kind and types of food pictures in food photographic atlas. In Opinion about the presentation of FPA, most of the respondents (53%) said cups and glasses should be used for assessing the liquid food; and for the solid food shapes of balls and cubes are recommended by most of the respondents.**

**There is no need to collect pictures of all kinds of food items separately different shapes and consistencies of food will be enough.**

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## VIEWES OF DIETITIANS ABOUT PAKISTANI FOOD-BASED DIETARY GUIDELINES

Shaista Jabeen, Nida Noor

Rana Liaqat Ali Khan Government College Of Home  
Economics Karachi.

### ABSTRACT

The food guide pyramid is designed to help people make healthy food choices. The objectives of this study were to determine the efficacy or applicability of food guide pyramid mentioned in food-based dietary guidelines among the dietitians and to assess the quantity of food per serving of different food groups in the Pakistani Food Guide Pyramid. The Pakistani Food Guide Pyramid was evaluated in the light of the responses by 25 dietitians. Questionnaire was used to collect data, which consisted of general information regarding usefulness, frequency, quantity, no. of servings, and suggestions regarding Food Guide Pyramid. Overall results indicated that all dietitians agreed on the usefulness of the Food Guide Pyramid. All of the dietitians were using American Food Guide Pyramid as they were unaware of the existence of the Pakistani Food Guide Pyramid. Most of them thought that the quantity and serving size mentioned in the Pakistani Food Guide Pyramid and in the American Food Guide Pyramid is appropriate. All dietitians were satisfied with the serving size, but they suggested that the Pakistani Food Guide Pyramid must also be designed according to different income levels, while all were satisfied with the no. of servings as indicated in Pakistani and American food guide pyramids.

*Keywords: Dietary guidelines, Food Guide Pyramid, Pakistani diet*

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### INTRODUCTION

A sure way to get good nutrition every day is to choose one's food according to the food guide pyramid (Taluk, H.K. & Kopan, A.O. 1977). This scientific tool makes it easy for a person to select a variety of different kinds and amounts of food. Through years of research, scientists learned that certain kinds of foods contain large amounts of one or more nutrients; they divided all foods into four groups (Williams, S. R. 1997). Presently, however, the food guide pyramid divides foods into six groups according to the nutritional contributions they make. By following the guidelines set in the pyramid, one is able to

choose foods for their vitamins, minerals, as well as calorie content (Ollaway, P. B. 1993). The food guide pyramid is an outline of what to eat each day based on dietary guidelines. It is not a rigid prescription, but it is a general guide that lets people choose a variety of foods to obtain the nutrients one needs and at the same time the amount of calories required to maintain a healthy weight (United States Department of Agriculture (USDA 2005).

The major purpose of this study was to determine the usefulness and applicability of the Pakistani Food Guide Pyramid among dietitians, and also to assess the quantity of food per serving of different food items indicated in all the food groups of the Pyramid. Dietitians were using the Food Guide Pyramid published by USDA (United States' Department of Agriculture), and not the Pakistani Food Guide Pyramid published by the Nutrition Wing of the Ministry of Health, Government of Pakistan; the reason for this apparent omission being a complete absence of information regarding its very existence. There is thus a need to launch the Pakistani Food Guide Pyramid in such a way as to disseminate the information to the relevant circles so that it can be used easily by dietitians all over the country (National Institute of Health, Nutrition Division 2005).

### METHOD

The focus of this study was to evaluate the Pakistani food-based dietary guideline for its efficacy of use among local population. 25 dietitians working in different hospitals of Karachi were the subjects of the study. The qualification of the subjects was a Bachelors or Masters Degree in Food & Nutrition. The selected hospitals for data collection were: Aga Khan University Hospital, Patel Hospital, National Medical Hospital, SIUT (Sindh Institute of Urology and Transplantation), Baqai University Hospital, Tabba Heart Institute, NICVD (National Institute of Cardiovascular Diseases), Liaquat National Hospital, Park Lane Hospital, Indus Hospital, and Sindh Medical Centre. Data was collected over a period of four months through interview cum questionnaire. Prior to data collection, respondents were contacted personally and were adequately assured of maintaining confidentiality of information received. The study design as well as the questionnaire was explained to the respondents beforehand so as to maximize accuracy of responses. Data was analyzed on SPSS

(Statistical Package for Social Sciences) version 14.0.

## RESULTS

This study was conducted to explore the views of local dietitians about Pakistani Food Guide Pyramid (PFGP) developed by NIH of Pakistan as part of National food-based dietary guidelines. For this purpose, 25 dietitians were selected randomly from different local hospitals/medical facilities. The results of the study revealed that 92% of the dietitians were in favor of using the Food Guide Pyramid while planning the diet. However, 100% of the respondents were using the American Food Guide Pyramid in their routine work because they did not have information about existence of PFGP.

Results regarding the satisfaction of dietitians with the quantities mentioned as one serving of various foods from cereal group in PFGP are given in figure 1. All the dietitians agreed with the quantity (1 serving) of noodles and chapatti, whereas 92% agreed with the quantity of 1 cup rice; 88% agreed that 4 small rusks was an adequate serving size for a single serving; 84% responded positively to the quantity of 1 cup cooked cereal as 1 serving, and 91% agreed with 2 slices of bread as a single serving size.

Results regarding the satisfaction of dietitians with the quantities mentioned as one serving of various foods from fruit group in PFGP are given in Table 1.

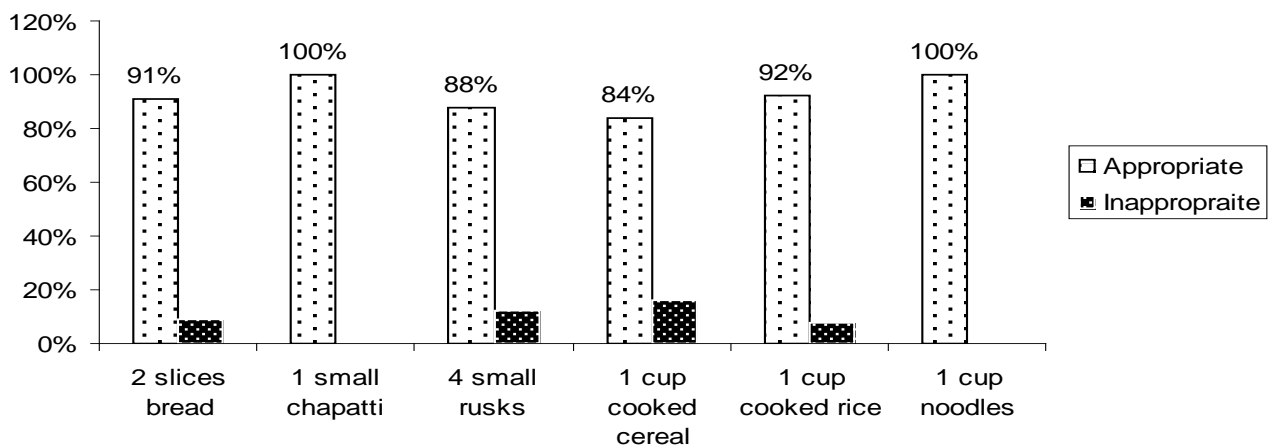


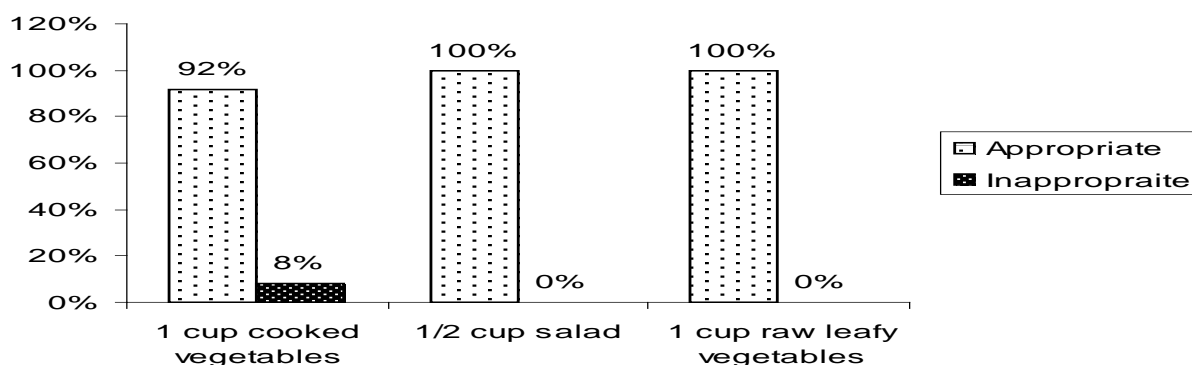
Figure 1: Percentage of respondents satisfied with serving size of cereal and cereal products

Table 1: Percentage of respondents satisfied with serving size of foods from Fruit Group

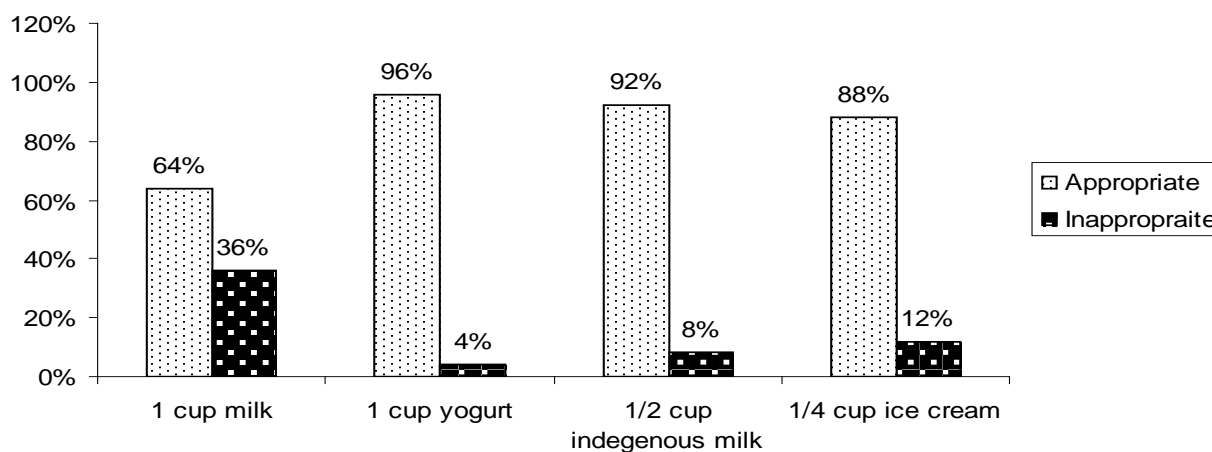
| Fruit Group | 1 Serving Size | Appropriate<br>N=25 n (%) | Inappropriate<br>N=25 n(%) |
|-------------|----------------|---------------------------|----------------------------|
| Fresh Fruit | 1 medium       | 24 (96%)                  | 1(4 %)                     |
| Dried Fruit | ¼ cup          | 25 (100%)                 | 0 (0%)                     |
| Fruit Juice | ½ - ¾ cup      | 25 (100%)                 | 0 (0%)                     |

Table 2: Percentage of respondents satisfied with serving size of foods from Meat Group

| Food Group                      | 1 Serving Size | Appropriate Frequency (%)<br>N=25 | Inappropriate Frequency (%)<br>N=25 |
|---------------------------------|----------------|-----------------------------------|-------------------------------------|
| Meat, Egg, Beans, Pulses & Nuts |                |                                   |                                     |
| Cooked lean meat                | 50g            | 21 (84%)                          | 4 (16%)                             |
| Cooked poultry                  | 50g            | 21 (84%)                          | 4 (16%)                             |
| Cooked fish                     | 50g            | 22 (88%)                          | 3 (12%)                             |
| Egg                             | 1              | 21 (84%)                          | 4 (16%)                             |
| Egg whites                      | 2              | 24 (96%)                          | 1 (4%)                              |
| Cooked legumes                  | ½ cup          | 23 (92%)                          | 2 (8%)                              |
| Nuts                            | 30g            | 25 (100%)                         | 0 (0%)                              |



**Figure 2: Percentage of respondents satisfied with serving size of vegetable group**



**Figure 3: Percentages of serving size of milk & milk product (servings/day 2-3).**

**Table 3: Percentage of serving size of edible fats, oils, sugar, and salt (servings/day 2-4)**

| Food Group          | 1 Serving Size | Appropriate<br>n (%)N=25 | Inappropriate<br>n (%)N=25 |
|---------------------|----------------|--------------------------|----------------------------|
| Fats, Sugar & Salt. |                |                          |                            |
| Oil                 | 1 tbsp (10ml)  | 24 ( 96%)                | 1 (4 %)                    |
| Butter/margarine    | 1 tbsp         | 24 ( 96%)                | 1 (4 %)                    |
| Mayonnaise          | 1 tbsp         | 24 ( 96%)                | 1 (4 %)                    |
| Salad dressing      | 1 tbsp         | 25 (100%)                | 0 (0 %)                    |
| Sugar               | Use sparingly  | 25 (100%)                | 0 (0 %)                    |
| Honey               | 1g             | 25 (100%)                | 0 (0 %)                    |

All the respondents were satisfied with the quantity (1 serving) of dried fruit and fruit juices, whereas 96% were satisfied with the serving size of fresh fruits. Similarly all the respondents were satisfied with the amount of 1 serving of salad and raw vegetables, while 92% were satisfied with the quantity indicated for cooked vegetables (Figure 2).

Among meat and lentils group (Table 2) 100% of dietitians were satisfied with serving size of nuts, 96% with serving size of egg whites, 92% with serving size of cooked legumes, 88% with serving

size of cooked fish, while 84% (each) of the dietitians were satisfied with serving size of cooked lean meat, cooked poultry, and egg. In relation to foods from milk group (Figure 3) 96% of the dietitians agreed that serving size of yogurt mentioned in the Pakistani Food Guide Pyramid was appropriate, 92% respondents expressed satisfaction with the quantity (1 serving) of fresh milk, while 88% and 64% of the dietitians responded positively to the quantity of plain ice cream and milk respectively.

Among the foods from fats and sugar group (Table 3) 100% of the dietitians agreed with the quantity (1 serving) of salad dressing, sugar and honey, while 96% were satisfied with the quantity of oil, butter and margarine as mentioned in the Pakistani Food Guide Pyramid.

Dietitians suggested that the food guide pyramid should be according to the purchasing power or income level that people can understand easily and which helps them in the planning of a balanced meal for their families and also in purchasing the related food items. The respondents were also of the opinion that the number of servings per day of cereal and cereal products should be 4-8 instead of 5-9, and that of the vegetable group 5-6 instead of 3-5. It was also recommended by the dietitians that the quantity of fat should be mentioned separately for saturated and unsaturated fat types, and that exercise should be added in the food guide pyramid.

### **DISCUSSION**

This study has explored the views of local dietitians about PFBGD and food pyramid. The results have also highlighted the need for

appropriate dissemination for information about government publications about food and nutrition

and easy availability of these publications. Efforts of National institute of health in developing the guidelines are commendable however ignorance of almost all the working dietitian about existence of PFBGD creates concerns. Satisfaction of dietitians with contents of FBDG indicates its wide acceptability and applicability.

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### *Family dynamics & Human Development*

**Social and Psychological aspects of Human Development and role of care takers and social groups particularly parents, teachers and family in empowering human being; family studies and family dynamics**

### *Home Economics & Human Ecology*

**General and multidisciplinary articles about Home Economics education, home economics research, practices of families and households and quality of life of individual and families.**

### *Home Management & Consumerism*

Managing; handling, supervision, or control of family affairs and resources so as to hold family values, maintain standards and achieve goals; Production, distribution, and consumption of goods and services for the family; Consumerism

### *Food, Nutrition & Wellness*

Wellness, Protection or restoration of health through selecting/producing, preparing and consuming healthy food; maintain of personal and food hygiene; Food and nutrition security for individual and households.

### *Design and Visual Studies:*

Basic and universal theories and issues regarding use of resistant and complaint materials and techniques for creating structural and decorative design;

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Particular theories and issues regarding designing and selecting apparel and constructing garments and furnishing; Textile sciences

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Article must be at least Microsoft Word 2000, and XP. Articles sent via regular mail should include a printed copy and an electronic version on disk or CD.

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APA reference style is to be followed. Here are a few examples of the most commonly used reference types:.

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Farooqi, A. & Gibson, T. (1998). Prevalence of the major rheumatic disorders in the adult population of north Pakistan. *Br.J Rheumatol.*, 37, 491-495.

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Web page:

Dewey, R. A. (2002). *Psych Web* by Russ Dewey. Retrieved January 25, 2003 from <http://www.psywww.com>



# Pakistan Home Economics Association

Registered under the Societies Registration Act XXI of 1860, Registration No. 434 of 1956

3-P block 2, P.E.C.H.S Karachi 74500 Pakistan

Phone: 4551916; email pak.hea@gmail.com, phea@chek.edu.pk

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Constitution of

# Pakistan Home Economics Association

Registered under the Societies Registration Act XXI of 1860, Registration No. 434 of 1956

## BACKGROUND

Pakistan Home Economics Association is a nonprofit educational association formed in 1956 by Dr. Mrs. Zahida Amjad Ali. After being dormant for some time, through the cooperation of a founder member Mrs. Saeeda Baquer Khan it has now been revived once again to play its role in the emancipation of the field.

The foremost objectives of the association are: promotion of education and research in the field of Home Economics and to contribute to betterment of individual families and community.

## OBJECTIVES

The objects of the Association shall be the development and promotion of standards of home and family life that will best further individual and social welfare.

The association shall aim to advance this object:

1. By the study of problems connected with Pakistani home and families.
2. By encouraging the improvement and extension of home economics instruction in schools and colleges.
3. By organizing and encouraging adult education programs in home economics.
4. By encouraging and aiding investigation and research in problems of home Economics.
5. Through issuing of publication and holding meetings through which there may be wider and better understanding of the value of home economics.
6. By co-operating with other associations and organizations with similar aims and objects: and
7. By endeavoring to secure legislation for the advancement of Home economics.

## MANAGEMENT & ORGANIZATION

The affairs and business of the PHEA shall be conducted and managed by the Executive Committee. The rules and regulations and any amendments thereof, shall be made by the PHEA with a majority of vote by those present at the general body meeting.

The Executive Committee shall consist of nine elected members:

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Vice President

General Secretary

Treasurer

Up to Six additional members.

Members of the Executive Committees shall be elected once every two years by the general body. Office Bearers may not serve for more than two consecutive terms in the same position. But can be re-elected after a break.

## MEMBERSHIP

**Full Members:** Anyone with a degree/training in Home Economics. Those full members who pay subscription for ten years shall be taken as life members.

**Privileges and rights of full members:**

Vote at all general and extra-ordinary meetings.

Propose and second resolution.

Propose and second candidates for holding office of the Society.

Shall be eligible for all offices after being duly elected.

Receive publications of the PHEA free of cost or on such discounted rates as PHEA may fix from time to time.

To attend lectures, demonstrations and discussions of academic nature organized by the PHEA

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To attend special events organized by the PHEA

To receive publications of PHEA free of cost or on such discounted rates as the PHEA may fix from time to time.

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To receive publications of PHEA free of cost or on such discounted rates as the PHEA may fix from time to time.

To be co-opted as an ex-officio member of the Executive Committee

Eligibility for membership to PHEA is contingent upon approval of application by EC

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