

# 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.

#### INDEXATION OF NURTURE

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# NURTURE

Research Journal for Human Civilization by Pakistan Home Economics Association

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# **“THE WORLD NEEDS HOME ECONOMICS, BUT DOESN’T RECOGNIZE IT... HOW TO UNVEIL HOME ECONOMICS”**

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## **ABSTRACT**

Home economists believe that amidst today’s challenges to human wellness home economics has great potential to ameliorate the situation. Evidences albeit sporadic, are found for potential of home economics to contribute to human wellness. Experts realize the need for kind of education that home economics has been providing since more than a century. However recognition of home economics itself as the kind of education needed today is still rare. This paper reviewed the reports and evidences of relevant situations and tried to explore the actions needed for realization of potential of home economics to contribute to human wellness. It emerges that philosophical reviews indicating potential of home economics are relatively easier to find than empirical studies verifying contribution of home economics education to human wellness. Large scale trials or systematic reviews providing robust evidence for potential of home economics probably have never been conducted. Various strategies including conduction of such trials are given for unveiling home economics.

*Keywords: Home Economics, Wellness, Education*

## **INTRODUCTION:**

The concept of human wellness that lead to the emergence of human economics as a field of study in 1801 is still an unknown or new concept to most of the experts and agencies concerned with human wellness. Consequently strategies adopted for promoting human wellness and assessing progress are also focused on one or a few selected aspects of human wellness. It appears that such fragmented approaches are just changing the nature of threats to human wellness and burdens of various kinds of human miseries from one population to other without having any significant impact on overall wellness at global level. There are indications that well meaning experts often realize the need for comprehensive and preventive measures to promote human wellness but are not aware of existence of a field of study that trains people for education and research in promoting all rounded human wellness through preventive measures. The question emerges that why Home economics that exist for more than 100 years now by has yet not been recognized as promoter of human wellness.

This paper (a) reviewed the research databases (1) to assess recognition of need for wellness education by non home economics professionals; (2) to explore reasons for disregard of home

economics education as wellness education and (b) suggests strategies for removing hurdles to recognition of home economics education as wellness education.

## **METHODOLOGY:**

Available and accessible evidence from various research databases from a variety of fields of studies were reviewed to assess the validity of assumption that homes and universal home economics education has potential for improving and sustaining human wellness at global level. Research data bases searched include Medline (U.S.National Library of Medicine, 2010), Hearth (Cornell University, 2010), SSRN eLibrary Database(SSRN, 2010) , Directory of Open Access Journals (Lund University Libraries, 2010) and Google scholar(www.google.com, 2010). Combination of search terms indicating potential link to home economics (*e.g. home economics, family studies, consumer sciences, human ecology, family, consumer, home, parents, and lifestyle etc*) and wellness (*e.g. health, wellness, wellbeing, quality of life*) were used to locate articles of interest. All abstracts and all full papers retrievable within reasonable time frame and resources were reviewed to see if it had any indication of need for home economics education

with or without using any of the names of this field of study. Research data bases as well as general articles were searched (*using search engine- Google*) to review the reasons for misconceptions about home economics and efforts made by home economist to remove those misconceptions. Based on the above mentioned reviews strategies for removing hurdles to recognition of home economics education as wellness education are suggested.

## RESULTS:

Wellness includes health and a lot more. World Health Organization defined health in 1946 as "a state of complete physical, mental, and social well-being and not merely the absence of disease and infirmity"(World Health Organisation, 1946). Wellness is "an active process of becoming aware of and making choices toward a more successful existence" (National Wellness Institute, 2010).

Regardless of terminology used to describe the concept, Home Economics Education has always been focused on promoting the wellness as it is define above. Home economist believed since the beginning of the century that "organization and conduct of home is dynamic and responsive to society"; "intelligently made alterations assure optimum functioning of homes and wellness of human civilization" and "this requires definite training of dwellers in fulfilling their role as homemakers" (MacDonald & MacDonald, 1927).Betterment of individual, family and community has been the slogan of home economics education. Home economists give more importance to homes as determinants of wellness than any other field, the ultimate beneficiaries of wellness of homes are both individuals and societies. To home economists the term home includes all those units where human being live regardless of type of shelter the form of activity which are carried on, and the grouping of people to be found within the shelter (Fitzsimmons, 1950). Home economists are concerned with quality of products and services that are used by people living in homes as well as with policies and systems that influence them.

Over the years changes took place in this field of study but focus has always remained the same that is wellness of human beings. At present, International federation of home economics describes Home Economics as "a field of study and

a profession, situated in the human sciences that draw from a range of disciplines to achieve optimal and sustainable living for individuals, families and communities. Its historical origins place Home Economics in the context of the home and household, and this is extended in the 21st century to include the wider living environments as we better understand that the capacities, choices and priorities of individuals and families impact at all levels, ranging from the household, to the local and also the global (glocal) community. Home Economists are concerned with the empowerment and wellness of individuals, families and communities, and of facilitating the development of attributes for lifelong learning for paid, unpaid and voluntary work; and living situations. Home Economics professionals are advocates for individuals, families and communities. It tries to empower individuals and families to identify and create alternative solutions to significant everyday challenges and to take responsibility for the consequences of their actions in a diverse global society. The central concern of the field is the physical, economic, and socio-psychological well-being of individuals and families. From its inception in the nineteenth century, the field has used knowledge to improve people's quality of life"(International Federation for Home Economics (IFHE), 2008). Reviewing the presence of human condition concerns in home economics McGregor states , "home economics started with an unfocused concentration on well-being, moved onto an emergent understanding of wellness and basic human needs (while still holding onto well-being) and, in the process, opened the door to a normative approach to practice couched in the human condition construct"(McGregor S., 2010) .

Evidences for recognition of need for wellness education

The idea of promoting wellness through empowering education has recently gained focus in the field of medicine and to a certain extent in other fields. Evidences from medical research highlight the importance of wellness education. A brief review of evidences from medical research is given here.

Developmental Origins of Health and Disease (DOHaD) hypothesis, that originated in 1990s' assumes that prenatal conditions have life-long consequences. Evidence for impact on metabolic disease has been overwhelming and is emerging

for cognitive, social, emotional and mental health issues (Kajantie & Raikonen, 2009; Raikonen & Pesonen, 2009; Sullivan & Grove, 2010; Symonds, Sebert, Hyatt, & Budge, 2009; Wright & Enlow, 2008). Educational interventions have shown positive impact (Kafatos, Vlachonikolis, & Codrington, 1989; Taren & Graven, 1991). It could be interpreted from this phenomenon that human potential for wellness is primarily determined by the extent and kind of environment that any home provides to young women. Physical and psychosocial environments can facilitate or hinder young women's' nourishment through a number of ways e.g. access to appropriate food, reasonable workloads and low levels of psychosocial stress. Home economics or in other words wellness education can enhance homes potential to promote maternal and fetal wellness.

There are numerous evidences showing association between wellness of homes and occurrences of health risk for dwellers of any age. This indicates potential of home economics education for improving wellness. A few examples from each area are referenced here. Observations regarding association of home environment and injuries, infections accidental poisonings and allergies are rampant. (Sellstrom, Bremberg, Garling, & Hornquist, 2000; Cagle, Davis, Dominic, & Gonzales, 2006; Kendrick, Barlow, Hampshire, Polnay, & Stewart-Brown, 2007; Phelan, Houry, Atherton, & Kahn, 2007; Kendrick, Barlow, Hampshire, Stewart-Brown, & Polnay, 2008), (Woolf & Woolf, 2005; Erkal & Safak, 2006; Grey, Nieuwenhuijsen, & Golding, 2006), (Larson & Gomez, 2001) (Melsom et al., 2001; Wamboldt et al., 2002). Characteristics of family and parents are found to influence not only child health and development but also development of health related habits and behaviors. (Vandell & Ramanan, 1992; Sharma, 1997; McCartney, Dearing, Taylor, & Bub, 2007; Keltner, 1992; Goyen & Lui, 2002; Kolobe, 2004; To et al., 2004; Miyake et al., 2007; Rickards, Walstab, Wright-Rossi, Simpson, & Reddihough, 2007; Barlow, Powell, Gilchrist, & Fotiadou, 2008; Oei, Egan, & Silva, 1986; Sallis, Patterson, McKenzie, & Nader, 1988; Strauss & Knight, 1999; Ogden & Steward, 2000; Saelens et al., 2002; Arredondo et al., 2006; Evans et al., 2006; Golan, 2006; Salmon, Hume, Ball, Booth, & Crawford, 2006; Sebok, Schneider, & Harangi, 2006; Nanney, Johnson, Elliott, & Haire-Joshu, 2007; O'Brien et al., 2007; Villard,

Ryden, & Stahle, 2007; Matsuzuki, Muto, & Haruyama, 2008; Saied-Moallemi, Vehkalahti, Virtanen, Tehranchi, & Murtoomaa, 2008; Levin & Currie, 2009; Pearson, MacFarlane, Crawford, & Biddle, 2009; Pearson, Biddle, & Gorely, 2009) . There is enough evidence to demonstrate that home environment and families influence not only physical development and health but also intellectual development and psychological wellness of individuals. (Bradley, Caldwell, & Rock, 1988; McMichael et al., 1992; Steinberg, Lamborn, Dornbusch, & Darling, 1992; Baydar, Brooks-Gunn, & Furstenberg, 1993; Andersson, Gotlieb, & Nelson, 1997; Pridham, Becker, & Brown, 2000; Mackner, Black, & Starr, Jr., 2003; Davis-Kean, 2005; Marturano, Ferreira, & Bacarji, 2005; Roberts, Jurgens, & Burchinal, 2005; McCulloch, 2006; Tong, Baghurst, Vimpani, & McMichael, 2007; Green et al., 2009) (Furman, 1992; Harmer, Sanderson, & Mertin, 1999; Bradley, Conyn, Burchinal, McAdoo, & Coll, 2001; Posada et al., 2002; Barry, Dunlap, Cotten, Lochman, & Wells, 2005; Pachter, Auinger, Palmer, & Weitzman, 2006; Korja et al., 2008; Lim, Wood, & Miller, 2008; Maikovich, Jaffee, Odgers, & Gallop, 2008; Zevalkink, Riksen-Walraven, & Bradley, 2008)

Several large scale intervention trials have shown major role of lifestyle in proliferation of diseases both infectious and non-communicable disease. Consequently medical experts are now realizing need for contribution of non-medical professionals in the prevention of diseases. In relation to control of non-communicable diseases (NCDs), that represent a leading threat to human health and development WHO states, "Considerably more gains can be achieved by influencing policies of non-health sectors than by health policies alone. Because the management of chronic conditions requires lifestyle and daily behavior change, emphasis must be upon the patient's central role and responsibility in health care. Health care for chronic conditions must be re-oriented around the patient and family (World Health Organisation, 2002). WHO is also piloting a project titled healthy homes healthy society. Organizers of World health summit state: "Initiating and realizing adequate and tolerable conditions of life and the way we jointly think and act will be crucial to cope with the health challenges that we are facing in the next years and beyond." "The coalition of academic medicine, governments, industry and civil society will

continue to develop and monitor joint solutions to improve health worldwide” (World Health Summit, 2010).

Experts from various fields often realize the importance of what home economics teach. An expert of technology recognizing the importance of homes states: “Another reason to study technology in homes is that it is a rich research field, and has the potential to improve everyday life for millions of users. Also, work and home are intertwined now, and even if workplace concerns are paramount, it is difficult to ignore the work that gets done in homes” (Hindus D., 1999). An individual's ability to make informed judgments and effective decisions about the use and management of their money now becoming popular under the name of Financial literacy has always been integral part of home economics (Wikipedia Foundation Inc, 10 A.D.). The kind of education UNESCO is stressing now is not very different from what home economics is and has been. “UNESCO promotes a multidisciplinary approach to science and technology education and gives particular attention to the provision of basic knowledge, life skills and scientific literacy for all, as well as preparation for the world of work. ....educational systems are faced with the challenge of science and technology education that has lost relevance not being able to adapt to current scientific and technological developments”(UNESCO, 2010).

Life Skills-Based Education (LSBE) is being adopted as a means to empower young people refers to an interactive process of teaching and learning which enables learners to acquire knowledge and to develop attitudes and skills which support the adoption of healthy behaviors (UNICEF, 1996). This purpose is being served by home economics since 1800's. The concept written in 2007” The challenges children and young people regularly face are many, and require more than even the best numeracy and literacy skills seems to be an echo of the ideas of a home economist presents in 1927 where she stressed need for life style education and called it "fourth R of right living" (MacDonald & MacDonald, 1927). All the above observations lead to an inclination to assume that if these experts and agencies knew enough about home economics they would have simply suggested universal home economics education.

Reasons for lack of recognition of home economics as wellness education

Emergence of so many new names for the kind of education that home economics has always been giving is an evidence that world has not recognized home economics. The consequence is that use of home economics made at global level to enhance human wellness is not at par with its potential. Home economists have been trying to explore and ameliorate the situation.

Politicizing home economics as gender issue

Intentional ignorance of home economics for political reasons has been noticed and reported by many researchers (Stage & Vincenti, 1997). Feminist and progressive often consider home economics as symbol of domesticity. Politicians have also exploited support to home economics to undermine their opponents' e.g. home economics college could not be upgraded to university due to misleading and irrational propaganda about its relevance to constraining women's entry in other fields of higher education (Alvi, 2008). This politicization of home economics in Pakistan lead to lack of public support (KalPoint.com, 5 A.D.) and continues to hinder higher education and research in home economics (Hussain, 2010).

Hyper specialization

Hyper specialization has been noted as hindrance to evolution of the knowledge base of the profession. McGregor states: “To the detriment of the interdisciplinary potential of the profession, we have been successful in creating narrowly focused specialists instead of wider thinking generalists. By embracing the specialist, expert mode, we have even created artificial boundaries between different areas of our practice (food and nutrition, housing, family, consumer, and clothing and textiles) leading to the sad reality that, often, we do not collaborate with ourselves, let alone with other disciplines (McGregor, 2009).

Inappropriate design and implementation of home economics programs:

It has been repeatedly suggested by home economists that “Home economics curriculum should evolve and develop from the best knowledge available at a given point in time” (Teachers of Home Economics Specialist Association, 1988). However accomplishing this task is complex and requires a wide variety of academic resources. Meeting such requirements



has been much more difficult developing countries e.g. FAO acknowledged the need to reorient home economics curricula to better meet the needs of farmers in developing countries in 1994 (FAO, 1991).

An example of negative influence of lack of timely updates in curriculum could be given from Pakistan. Initial home economics programs introduced in 1950s were copied from USA without cultural and socioeconomic adaptations and were popular among elite class. The program failed to proliferate due to high costs of implementation and lack of evidence for promoting wellness of masses (Saeed & McClelland, 1991).

**Inconsistent names and definitions of the field of study and its areas of specialization**

Use of different names in different countries adds to the problem because it makes the task of convincing the policymakers about presence of home economics at global level more difficult. IFHE has correctly conceded not to change the name but to rebrand it (International Federation for Home Economics (IFHE), 2008) and active efforts are needed both for rebranding and for exposing existence of home economics with other names.

Efforts made by home economists to ameliorate the situation.

Home economists have been well aware of the problems being faced by home economists and have been giving excellent suggestions for revitalizing the field. Home economists have always been and are actively striving to redefine and update philosophy of home economics education and give worthwhile theoretical and practical suggestions for popularizing the field (Turkki, 2004; Teachers of Home Economics Specialist Association, 1988; Pendergast, 2006; McGregor, 1998; McGregor, 2007; McGregor, 2004; Heinila H, 2009). These contributions are very valuable and provide the directions for actions and need to be supplemented by hard core evidence of claims about objectives of home economics education. Non home economists would like to see evidence of efficacy of home economics education in promoting wellness. Review of literature indicates dearth of this kind of evidence. Paucity of such evidence appears graver than actual because of variations in names of the field of study and segregation of areas of specialization from the core field of study. For

example searching Medline for articles indicating need for home economics education for enhancing wellness retrieves only a couple of articles (Brennan, McCarthy, & Ritson, 2007; Crawford, 2008; Lo, Chang, Lee, & Wahlqvist, 2009).

Revitalization of IFHE has provided an excellent platform for emancipation of home economics. IFHE website is a very good source of information and has immense potential to further the cause of home economics (IFHE, 2010). Advancement in communication technology has greatly facilitated sharing of experiences and knowledge and home economists are in a better position to work towards removing of stigmas and hurdles that constrained the universal popularity of home economics. For example home economist personal websites and mailing lists are serving a very noble cause of sharing home economics related information.

Global interest in, and need for the kind of education that home economics provides has been noted by many home economists (Teachers of Home Economics Specialist Association, 1988; Pendergast, 2006; Heinila H, 2009; DARLING C.A. & KAIJA TURKKI, 9 A.D.). This presents a very good opportunity for home economists to collaborate and work for marketing their field of study. Appropriate, timely and targeted actions at this point can determine status of home economics in next centuries. A few strategies suggested on the basis of this review are given in discussion section.

## DISCUSSION

How to unveil home economics

Review of home economics related situations given above shows that appropriate efforts made by home economists today may revolutionize the status of home economics at global level. Strategies to remove the hurdles that restricted popularity of home economics are given below.

Synchronization of alternative names

Name of the field of study has been an issue not because of its inherent meanings but because of the stigmas attached. The name home economics does not instantly highlight the purpose of human wellness but apparently is the most befitting name for the field used up till now. Renaming as family studies, consumer sciences,

human ecology etc has resulted in pushing the field away from the focus on home as centers of human development. Home economics is purpose and action oriented field and its various names adopted up till now in many countries denotes its either any of its function/s or domain/s rather than its purpose. It seems finding short name that encompasses and denotes all that home economics includes has been difficult. As per IFHE consensus the best option is to retain the name and rebrand the field. To contribute to this purpose of rebranding IFHE can suggest a list of acceptable alternative names for home economics and minimum set of knowledge base and competencies required for any program of home economics. The main sphere of action to realize this purpose is small i.e. home though it extends inwardly to individual and outwardly to community. Consumer science is close to home economics but not exactly home economics. Retaining the open door policy, just determining the arena of home economics and exposing the areas covered by similar fields would allow observers to understand home economics. If IFHE website devotes a page for this purpose it may make worthwhile contribution to rebranding home-economics This page can also give details of names used in various countries/states and differences in their contents. Viewers may be provided with options of online contribution and comments.

#### Guidance of home economists in showcasing of purpose of home economics

Since its inception the purpose of home economics has been betterment of individual, family and community, in other words betterment of humanity though for observers the meanings are not instantly apparent. The practical work of students and teachers done for learning of skills as well as judicious use of skills and other resources has greater visibility than teaching of sciences and philosophies that guide in selection and preparation of goods and use of skills. Observers are unable to see the purpose, strategies and standards related to teaching of skills and the purpose of home economics remains obscure. Several home economists have highlighted need for this showcasing. One of the missing components of home economics programs has been lack of focus philosophy of home economics and teaching components of home economics without telling enough about

home economics itself. Many entry level and even senior home economists would be unable to link all the activities their activities to purpose of home economics. They would benefit from concrete guidance in doing this. Home economics programs at level must be proactive in highlighting the purpose behind activities and training for retaining focus on purpose should ideally be made part of the home economics teaching programs curriculum. A model curriculum and set of lesson plans providing such templates to home economics teachers could be offered at IFHE website.

#### Fastening areas of specialization to core

As the names of various areas of specialty or have specific names not aligned to the name of the main field of study disintegration and oblivion is facilitated. Perhaps multidimensional nature of home economics limits its visibility. Though all its facets are internally tied by the core purpose of human wellness, the inner system of connections is not visible to world. Probably home economist needs to draw a connecting line on the outside facets by finding a name that has ability to tie together various areas of specialization. For Suppose if we rename home economics education as "human wellness technologies" and all its component areas have human wellness tag added (housing and interior for human wellness, apparel design and textile for human wellness, food and nutrition for human wellness, family economics for human wellness, family studies for human wellness) it may be easier for experts from other field to recognize that particular specialty as part of a larger field of study.

The term technology may be preferable to either sciences or studies because home economics is an action oriented field that makes use of both philosophy and science for planning any strategies or actions. Again IFHE website can play an important role. For example if IFHE home page has a vibrant animated representation of areas of specialization with strong emphasis on their relation to core the message would be available to all the viewers. IFHE may allow use of such animation to its affiliated bodies.

Collating and creating scientific evidence about efficacy of home economics.

We the Home economists know that home economics is wellness education and the world needs it desperately for human wellness. This

claim may not be acceptable to most observers who have been exposed to only specific aspects of home economics or only limited implementations of this extremely versatile, dynamic and transformative field of study. Balancing “empirical sciences” with “critical and interpretative sciences” as suggested by McGregor (McGregor, 2004) is important, and without losing this balance home economists need to provide evidence that is comprehensible to today’s scholars and policy makers. They are accustomed either to experiments based evidences, randomized controlled trials and systematic reviews of the same or to interpretations of large international data. Assessing association between home economics and state of human wellness or planning experiments to document impact of home economics education on human wellness is not the same as studying impact of drugs on guinea pigs or human volunteers. Controlling or matching human wellness status of cases and controls is not easy and separating effect of confounding variables during the course of interventions or observations is impossible. However efforts could be made to collect, collate and create evidence in somewhat similar manner. Home economists have made such efforts. Nosheena Saleem’s doctorate research provides evidence for significant positive impact of home economics education on wellness potential of rural households in Pakistan. We need large scale international evidences of this sort. Many may already be present in home economics colleges’ libraries. Exploring and collating such evidences from as many countries as feasible and making it available for the world to see is one of potential strategies to unveil home economics.

A step further would be planning large scale multicentre international studies to check the hypothesis that home economics education enhances human wellness. Association between home economics education and human wellness could also be assessed by securing relevant data from various countries, assessing and scoring countries for provision of home economics education and relating it to state of human wellness indicators in those countries. Collaborations between institutions to support doctoral and post doctoral research in home economics education would facilitates accomplishment of such gigantic tasks. IFHE could mediate to get support from international

agencies for such large scale projects. IFHE has done a lot to promote home economics and it is apparent that there is a lot more to do.

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## KNOWLEDGE AND SKILLS USED AND THE SATISFACTION DERIVED IN THE CHOICE OF APPAREL AMONG UNIVERSITY STUDENTS

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### ABSTRACT

The purpose was to examine the relationship between the knowledge and skills used in the selection of apparel and the satisfaction obtained. Data were collected from 210 undergraduate students of which 94 were females and 116 were males. A self administered questionnaire and focus group discussions were used. Knowledge and skills related to apparel choice were measured by a 12- item Likert scale. Satisfaction was measured using a 15- item test asking how the respondents personally feel about their clothes and what others think about them. Level of satisfaction was higher among those who had adequate knowledge. Female respondents scored higher than the male respondents on most of the attributes tested and depicted cognizance in the use of knowledge and skills. Level of satisfaction was high, with gender and year of study being significant determinants.

*Key words: University students, apparel choice, knowledge& skills, satisfaction.*

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### INTRODUCTION

The essence of satisfaction in dressing is in knowing what clothes work in one's favor and going out for them. The appearance of an individual is of considerable importance in self-presentation and one has to be careful to wear the appropriate attire. Clothing may thus be chosen by the wearer to be suitable for the situation as well as expressing an individual's personal traits, attitudes, feelings, and generally trying to portray the best of them (Horn, 1975; Kaiser, 1997). Literature indicates that both appearance management and appearance perception are affected by the way parts of a garment are put together using lines, color and texture. Principles of design (i.e. unity, dominance, contrast, proportion, balance and rhythm) are also salient in achieving the goal of harmony in apparel (Hillestad, 1980; Butler, 1975; Wingate, 1970). A consumer who has knowledge of both elements and principles of design may apply them in assembling an entire costume for good fit to enhance satisfaction.

Therefore, the right clothes for an individual have each part of the outfit appearing to belong with the other parts. They must also be suited to the person wearing them, the occasion to which they are worn and the accepted style of the season. Clothing also determines to a large extent how one should appear on the street and in society,

the friends they make, the jobs they seek, and the company they seek (Kaiser, 1997; Horn, 1975; Storm 1987; Solomon, 1989). Furthermore, according to Kaiser (1997), communication is based not only on language but also on the senses, which include vision, tactile sensations, smell, and taste. This therefore accords salience to the need for an individual's awareness of the said senses and thus the choice of clothes that will give satisfaction to the consumer.

Enhanced consumer knowledge and skills are essential as they are expected to contribute to a consumer's more effective interaction in the market place for the best consumption (Knapp, 1991). Lack of consumer knowledge and effective consumer skills is however, a recognized problem in the society at all levels of age groups. Consequently, there are several programs and publications that are designed to aid consumers in improving their knowledge and skills in the selection of apparel products. For instance, a consumer report ("How to Judge" 1992) highlighted the topic on how to judge a suit, considering skills in evaluating fabric, construction, proportion, fit, style, and wear performance.

Today, with advanced technological development, several audio visual and computer educational programs are also available to consumers, including information on wardrobe

planning, fiber and fabric identification, color in clothing, clothing care and finding the best clothing values (Learning Seed, 1993). Nader (1992), a consumer activist, also stressed the importance of consumer knowledge and skills especially in relation to shopping. Clothing, requiring skills and knowledge about aesthetic aspects of clothing, size and fit, and fiber and fabric, is the major problem facing clothing consumers and is an area that requires consumers' continued learning. The problem facing the Kenyan clothing consumer is not how to be fashionable but how to develop good taste and judgment in selecting suitable apparel products for a high degree of satisfaction, which may result to maximum use of the purchased apparel. Therefore, there is need to carry out a study to determine whether factors that consumers consider in choosing apparel, give them satisfaction. The purpose of this study was to elicit the knowledge and skills used in the choice of apparel and the satisfaction obtained by the respondents.

The study aimed at determining the use of knowledge and skills related to apparel choice as related to the satisfaction perceived by the consumer. These attributes were tested against the independent variables that included gender and year of study. The findings of this study will contribute to consumer education in both schools and colleges. Consumer educators or Home Economics teachers will be able to test the level of consumer knowledge and skills in apparel consumption among their clientele and then develop educational programs for remedial purposes.

#### Importance of Dress/Appearance among the Youth

Social change subjects different age groups to different amounts of stress. Most affected are youths that are in the process of making a lifelong commitment to the future. They are most torn between the pulls of the past and the future. Whereas adolescents are struggling to define who they are, youths begin to sense who they are and thus recognize the possibility of conflict and disparity between their emerging selfhood and the social order (Kaiser, 1997).

According to Kefgen & Specht (1981) clothing continues to be a significant factor in the satisfaction of emotional and social needs. Virtually aware of how they should look, the

youth are often extremely critical about clothing and personal appearance. The clothes they wear affect how they feel and how they act. Self-confidence is enhanced when they know that they are well dressed by their peer group standards and any comments made by the significant others may encourage or discourage the use of the said clothing.

The socialization process is never totally complete. By young adulthood, values appear to be determined more by self-chosen principles, although sets of generalized others still remain important especially in certain contexts (Kaiser 1997). Once a self-concept is acquired, we continue to assess it for accuracy and relevance in light of culture change and social context (Kefgen & Specht 1981). As individuals acquire new information about themselves and as fashion and cultural changes provide impetus to self-discovery, perceived self-image is also likely to change.

Information about ourselves to enable self-assessment is acquired through feedback from others, personal comparison with others, and self-perception. In the process of constructing images of self, we may ask ourselves questions such as 'who am I?' and 'how do I appear before others?' Kaiser (1997) termed this process of perceiving ourselves through our imaginations of others impressions as the 'looking-glass self.'

A qualitative study among male and female undergraduates was undertaken to find out the differences in their perceptions about a favorite article of clothing that they have worn. The major gender difference emerging from the study related to the manner in which the clothing was viewed in connection with the self and others. Males were more likely than females to ground their association with a favorite article of clothing to a particular context. This includes athletics and parties, whereas females related their favorite articles of clothing to feelings they experience when they wear these clothes, e.g. cheery or friendly (Kaiser & Freeman, 1989). Buckley and Haefner (1984), in their study with a sample of college students found that they could enhance their attractiveness by their use of clothing. Thus, clothing may be a positive force in student strivings for approval to the extent that they feel satisfied that their clothing contributes to their attractiveness.



Positive interaction with others and peer approval is related to positive self-esteem. One element of self-esteem is satisfaction with one's outward appearance (Kaiser, 1997). Francis (1992) examined the relationship between perceived clothing deprivation and social participation at the high school level. The group of individuals with the least money available for clothing and the most concern about the appearance and appropriateness of the clothing they owned scored lowest on attractiveness, popularity, and skill in making friends (social competence). The group that scored lowest on inability to buy reported greater social participation. The group members whose clothing compared least favorably with their peers scored lowest on attractiveness, popularity, and skill in making friends i.e. social competence and reported the least social participation in terms of time spent with friends, attendance at weekly social events, and acceptance of social invitations. Academic achievement, adaptive behavior, age, attractiveness, career aspiration, peer acceptance, popularity, self-concept, and sex are variables that have been shown to be related to clothing satisfaction and clothing importance (Adams & Crane, 1980; Francis, 1992; Etherton & Workman, 1996).

#### The Importance of Knowledge and Skills in Selecting Consumer Products

Frazier (1985) outlined five components of global awareness/perspective as balanced development, voluntary simplicity, appropriate technology, international reciprocity, and sustainable lifestyles. Therefore, a global perspective consists of information, attitudes, awareness and skills which taken together can help individuals understand the world, how they affect others, and how others affect them.

Engel et al, (1993) suggested that a consumer should make judgment about consumer products on the basis of good reasons rather than force, self-interest, fear, and punishment. Therefore, consumers need to be exposed to opportunities that will enable them to acquire knowledge, skills, and sensitivities that are necessary for rational consideration.

Slattery (1995) suggested that global education should be geared towards self-development, human relations and citizenship that is liberal, with roots that are child-centered and with an

emphasis on personal development and liberation, and social adaptation. Therefore, consumer products are studied to determine what a consumer needs in order to acquire the relevant knowledge and skills for proper choice and satisfaction. The valued end is a consumer who is able to use thinking skills to solve problems and make decisions (Fritz, A.1988).

According to Brown and Paolucci (1979), the mission of Home Economics is to enable families, both as individual units and generally as a social institution to build and maintain systems of action which lead to consumers who are well informed, illuminated, aware, and knowledgeable and thus fulfilled.

Child-rearing practices may be a factor in the development of skills that encourage the consumer to be independent in their future selection of consumer products including apparel (Wichern & Nowicki, 1976). Therefore, individuals with an internal locus of control (i.e. those who depend on knowledge, skills and ability) are likely to: -

Be alert to aspects of others and their own clothing that provides useful information for future behavior. Therefore, they can be taught analytical and observational skills using magazines, newspaper articles, and advertisements, illustrations of people's clothing and how it has affected behavior.

Take steps to improve their environment, e.g. their clothing by making simple repairs. They may also be taught consumer decision-making skills that will help them to be wise consumers of clothing e.g. reading and interpreting care labels.

Place value on skill reinforcements by considering compliments from others, acknowledging their skills in choosing appropriate clothing or in combining items of clothing to create an individual look.

Be resistant to subtle influence of advertising and promotional efforts in their choice of clothing. Consumers can be taught skills in recognizing and interpreting the subtle messages being communicated through advertising and how to become aware and resist their appeals.

All of these skills ought to be regularly included in learning to enable consumers to develop interest and practical information that can potentially contribute to the development of an internal

locus of control orientation (Etherton & Workman, 1996).

## METHODS

The study aimed at establishing the relationship between the knowledge and skills used in the selection of apparel and the satisfaction obtained from the apparel chosen. Therefore the knowledge and skills used, and the derived outcomes (satisfaction and dissatisfaction) were established through quantitative (using questionnaires) and qualitative methods (using focus group discussions). The accessible population was the undergraduate students of Moi University enrolled and registered for the 98/99 academic year. The sample consisted of 116 males and 94 females chosen in proportion to the population.

An insight into how knowledge and skills and satisfaction influence the respondent's perception of clothes during selection was sought through two focus group discussions involving six students (3 of each sex) from the sample population. The researcher used an interview guide for this exercise to assist in recording appropriate information from the focus group discussions. A self-administered questionnaire with both closed and open-ended items was also used to collect data from the respondents. The knowledge and skills test consisted of 14 items with a 'yes' and 'no' response category and the satisfaction test had 15 items with a 'satisfied' and 'not satisfied' response.

A pre-test was done among one general undergraduate class of 20 consisting of a relatively diverse group of students in terms of their academic year and sex. A pre-test form was included asking about the working and the format of the instrument. These students did not participate in the final study. To enhance the validity of the instrument, the experts of clothing assessed the instrument and advised on the adequacy in the coverage of all the areas stated in the title. They then indicated necessary changes in the instrument and the title. The questionnaire was reorganized to allow for better sequencing. The researcher gave a brief explanation to the respondents about the study. The questionnaires were then administered to the sampled respondents by the researcher. The researcher collected the questionnaires on completion. The

researcher also organized to have two focus group interviews with a sample from the targeted population so as to get in-depth information through free discussions where the valid respondents gave their own opinions, attitudes, values, beliefs or behaviors that the respondents hold highly during the consumption of apparel. Both qualitative and quantitative data was collected from the study. Quantitative data was analyzed using the statistical package for social sciences (SPSS-X). Descriptive statistics, that is, frequencies, percentages, and means were used to determine the variations in knowledge and skills used and the clothing outcomes. Chi-square, T-test, and simple ANOVA analysis for differences between means were used. Pearson product moment correlation coefficient ( $r$ ) was used to determine the strength of relationship between continuous data. The results from qualitative data were analyzed and used to explain and describe the findings derived from the quantitative data.

## RESULTS AND DISCUSSIONS

A country's input on education is its greatest resource. The young adults (ages 20-24) formed the population of this study, and were particularly well positioned in an institution of higher learning. It was crucial for this study to identify all the characteristics of the respondents that interacted to influence their apparel consumption behavior at this age and context. Based on a sample ( $N=210$ ) of university undergraduate students, 45% ( $n=94$ ) were females and 55% ( $n=116$ ) were males. The higher number of males was proportional to their greater representation in the sampling frame. An approximately equal percentage of first years (24%) second years (26%) and third and fourth years (25% each) participated in the study.

### Means of Obtaining Apparel

The majority of the 210 respondents (96%) participated in apparel selection. These had a very important implication on the study in that the respondents could understand the terms used in describing apparel and were able to answer the questions with ease. Most of the respondents (77%) obtained their apparel through buying, and 23% received gifts from parents, siblings, peers and guardians. This is confirmed by what one of the respondents said:

*“... most of my clothes are inherited from my sisters and I enjoy receiving from them because they fit me perfectly”.*

The sources of finances for buying apparel varied among the respondents with 66% being financed by their parents and guardians. University allowances were a source of finance for 23% of the respondents whereas 11% received from both sources.

#### The Knowledge and Skills Used in the Selection of Apparel

It was interesting to note the responses on the use and non-use of the various attributes of the knowledge and skills salient for apparel choice. (see Table 1). Out of all the efficient shopping skills, comparison- shopping was the most used with a rating of 55%, whereas less than 50% of the respondents planned for shopping and used budgeting skills. Some of the respondents indicated that they prefer doing comparative shopping to compare prices, styles and quality before making a decision. Others preferred buying apparel on impulse, especially from the second-hand clothes market. One of the respondents said:

*“I find myself picking a pair of shoes, a t-shirt or anything on impulse when I am passing through the “mitumbas”, especially when the prices are reasonable.”*

This is a common buying practice among consumers of all ages.

Forty eight percent (48%) of the respondents in this study did not use information gathering and evaluation skills. Research has demonstrated repeatedly that even highly experienced clothing experts have difficulty distinguishing natural synthetic fabrics based on the characteristics and the feel of the fabric (Cain, 1983). The high percentage of respondents who participate in buying confirmed their need to be equipped with adequate knowledge and skills required for choosing apparel.

Generally, the knowledge and skills salient for apparel choice were not highly used by these respondents.

Salient knowledge and skills used according to gender of respondents

The gender of respondents affected their ability in the use of the salient knowledge and skills required for satisfactory purchase of apparel. The female respondents (77%) used more of the

consumer information available on matters pertaining to apparel, knowledge of legal and economic issues (87%), budgeting skills (79%), and information interpretation (77%) than the male respondents (see Table 1). Probably this is because women benefit more from mass media, as advertisements and fashion shows are basically more focused on females.

It was disturbing to note that the knowledge and skills required for better consumerism of apparel were not highly used even with progress in education. This indicates that the undergraduates may graduate from the university before they are well equipped with knowledge and skills for the consumption of apparel and yet clothing does impact on everyone's life daily. A good example of the very low scores in the use of the knowledge and skills included the knowledge of legal and economic issues with only 18% first years, 15% second years, 17% third years and 25% fourth years, indicating that they used them highly (see Table 1).

#### Apparel Satisfaction

Perhaps as an internalized means of gaining some control over social acceptance, the young adults begin to believe and accept themselves and their clothing styles, more than adolescents (Newman & Newman 1976), who are more interested in recognition and peer acceptance from the clothing that they wear. The young adults can also enhance their clothing satisfaction by using other appearance enhancement accessories such as cosmetics, jewellery, shoes and hairstyles.

The influence of factors determining apparel choice on satisfaction

Chi-square was used to determine the existence of any differences between respondents who had adequate and inadequate resources for obtaining apparel. The results showed that the adequacy of apparel allowance affected the satisfaction obtained ( $\chi^2 = 4.89$ ,  $p = 0.027$ , see Table 2).

A Chi-square analysis of the use of knowledge and skills by year of study of the subject showed a non-significant relationship with all the knowledge and skills attributes. This indicates that the year of study of the respondents did not significantly affect the use of the knowledge and skills required for apparel consumption. However, the analysis showed that the knowledge and skills used during apparel selection significantly influenced the satisfaction of the respondents

with chosen apparel ( $\chi^2 = 10.46, p = .001$ ) (see Table 2).

**Table 1: Distribution of respondents using knowledge and skills required in apparel choice**

Knowledge & skills Variables	Variable attributes	Percentage of respondents using knowledge and skills							
		Total % N=210	Males n=116	Females n=94	1 <sup>st</sup> year n=51	2 <sup>nd</sup> year n=54	3 <sup>rd</sup> year n=53	4 <sup>th</sup> year n=52	
Efficient Shopping Skills	Comparison shopping	55	52	48	49	56	55	40	
	Value oriented shopping	52	58	66	37	45	47	25	
	Planned shopping	49	53	66	51	46	34	35	
	Information gathering & Evaluation skills	52	70	67	29	35	32	29	
Product Knowledge	Budgeting skills	45	60	70	35	41	38	29	
	Fabric knowledge	54	60	63	43	41	32	40	
	Fashion knowledge	45	60	73	51	30	28	27	
	Appearance enhancement Management	58	52	55	51	40	57	40	
General Consumer Proficiency	Informed consumer	39	60	77	33	33	28	35	
	Knowledge of legal	35	77	87	18	15	17	25	
	Economic issues								
	Budgeting skills	49	61	79	37	37	42	25	
	Information interpretation	42	66	77	35	28	23	31	

**Note:** Multiple responses allowed.

**Table 2: Relationship of adequacy of allowance and knowledge with satisfaction with chosen apparel**

Factor	Unsatisfied		Satisfied		Total	
	N=112		N=98		N=210	
	n	%	n	%	n	%
<b>Allowance*</b>						
• Adequate	16	38	26	62	42	100
• Not Adequate	96	57	72	43	168	100
<b>Knowledge*</b>						
• Adequate	29	51	37	65	57	100
• Not Adequate	92	60	61	40	153	100

P<0.05

**The influence of gender on the use of knowledge and skills**

Further analysis of the use of knowledge and skills was done to determine the existence of any differences between male and female students (see Table 3). There were significant differences in the respondents' use of fashion knowledge ( $t = 1.61, p = .012$ ) and budgeting skills ( $t = 0.76, p = .020$ ). The female respondents ( $M=2.27$ ) used more of fashion knowledge than the male

respondents ( $M = 2.16$ ). Female respondents were also found to be better informed about apparel products ( $t = 2.36, p = .019$ ), perhaps because females in this context tend to be more inquisitive about what they see around them and are therefore able to gather information from each other and the surrounding easily.

*"We enjoy shopping to the point of recreation, and therefore place great importance on almost all clothing information sources"*

The knowledge of legal and economic issues ( $t =$

3.03,  $p = .003$ ), and information interpretation ( $t = 1.93$ ,  $p = .05$ ) also exhibited significant

relationships with male respondents exhibiting greater use of these skills.

**Table 3: T-test table showing the relationship between gender and the use of knowledge and skills**

Variables	Attributes	Mean		t-value	Sig
		Males	Females		
Efficient shopping Skills	Comparison shopping	2.41	2.49	-0.92	.361
	Value oriented shopping	2.27	2.21	0.56	.573
	Planned shopping	2.41	2.44	1.87	.063
	Information gathering & Evaluation skills	2.09	2.12	-0.22	.824
	Budgeting skills	2.31	2.21	1.14	.254
Product Knowledge	Fabric knowledge	2.25	2.23	0.17	.869
	Fashion knowledge	2.16	2.27	1.61	.012*
	Appearance enhancement Management	2.36	2.33	0.34	.732
General Consumer Proficiency	Informed consumer	2.15	2.34	2.36	.019*
	Knowledge of legal	1.96	1.66	3.03	.003**
	Economic issues				
	Budgeting skills	2.24	2.17	0.76	.020*
	Information interpretation	2.23	2.06	1.93	.050*

\* $p < .05$ , \*\* $p < .01$

The influence of gender on satisfaction with apparel

The t-test analysis revealed generally non-significant relationships between satisfaction attributes and the sex of the respondents (see Table 4). However, the females ( $M = 4.07$ ) were more satisfied with their apparel's ease of care ( $t = -1.23$ ,  $p = 0.025$ ) than the male respondents (see Table 4). This could be because most ladies-wear within a college context may require hand washing and some of the gent's apparel requires dry-cleaning. Most ladies also enjoy laundry work more than gentlemen. The male students felt that this was a ladies task. The other attributes that had significant relationships include "my garments are well fitting" ( $t = -0.10$ ,  $p = .047$ ) and "is the right texture for self" ( $t = -1.26$ ,  $p = .028$ ). From observations, complaints about the fit of a garment are generally heard from ladies. This is because more females than males come in various shapes and figures that may not have been catered for especially in ready-made apparel. More females ( $M = 3.88$ ) were also satisfied with the texture of apparel. Perhaps the use of fabrics that are fashionable gives females the satisfaction that they require as long as it is the texture on fashion.

**Table 4: T-test table showing the relationship between gender and satisfaction**

Satisfaction variables	Mean Score		t-value	Sig
	M	F		
My garments are well fitting	4.23	4.24	-0.10	.047*
My dressing is good looking	4.12	4.05	0.58	.564
Elicits good comments	3.79	3.80	-0.04	.968
Is the right color for self	3.91	3.99	-0.68	.496
Is fashionable	3.74	3.79	-0.35	.730
Gives me a high self concept	3.90	3.95	-0.40	.692
Is good for the season	3.84	3.76	0.67	.501
Is correct length for self	4.29	4.30	-0.04	.964
Is comfortable	4.41	4.40	0.01	.993
Is the right style for self	3.86	4.06	-1.55	.123
Is the right texture for self	3.72	3.88	-1.26	.028*
Is easy to care for self	3.93	4.07	-1.23	.025*
Is durable	4.22	4.15	0.59	.559
Is versatile (can be combined)	4.03	4.10	-0.50	.621
Is the latest brand	3.22	3.20	0.09	.929

\* $p < .05$ , \*\* $p < .01$

Relationships between satisfaction and the major variables of study

Correlation analysis of satisfaction with the major knowledge and skills variables that influence apparel choice revealed a positive significant relationship with the use of knowledge and skills ( $r = 0.2712$  at  $P < .01$ ). Product knowledge ( $r = .2096$ ) and efficient shopping skills ( $r = .2067$ ) were significant at  $P < .01$  (see Table 5). Thus satisfaction with chosen apparel increased with an increase in the use of knowledge and skills, in a strong relationship. A possible explanation for this is that product knowledge, which includes the knowledge of fashion, fabric, and appearance enhancement is an area that consumers are greatly concerned about and satisfaction may be enhanced through maximizing the use of product knowledge. Efficient shopping skills, which

include aspects of comparative shopping, planned shopping and information gathering seem to come from outside forces such as economic drawbacks and value orientation from learned experiences.

All the significantly related attributes were positively correlated with satisfaction, indicating that satisfaction with apparel consumption increased with greater use of these attributes.

A correlation analysis revealed that adequacy of shopping allowances was positively correlated with clothing satisfaction ( $r = .2052$ ,  $P < .01$ ), (see Table 5) that is, higher scores on adequacy of apparel allowance were associated with higher scores on the clothing satisfaction measure. It may follow that the respondents bought more quality and quantity goods with an increase in apparel allowance and this therefore improved their satisfaction.

Table 5: Correlation matrix among all major variables

	1	2	3	4	5	6	7	8
1. Sex	—							
2. Year of study	.0047	—						
3. Adequacy of allowance	-.0527	.1950	—					
4. Satisfaction	-.0570	-.0335	.2052**	—				
5. Product Knowledge	.0799	-.829	-.2185**	.2096**	—			
6. General consumer proficiency	-.2105*	-.0591	-.0718	.1427*	.1870**	—		
7. Efficient shopping skills	.0659	-.0988	-.0211**	.2067**	.9845**	.1731*	—	
8. Knowledge and skills.	.1672*	-.1214	-.1284	.2712**	.5933**	.1152**	.5786**	—

\*\* $p < .01$ , \*  $p < .05$ .

The perceived may give in to comments such as "that doesn't look good on you" from a close friend, therefore accepting it and dressing more often in styles that received positive comments such as "that looks good on you." With time, individuals may therefore not need much more of close friends, or even school education to choose apparel appropriately for better fit and satisfaction. Many students commented on the need to distance themselves from negative identities they once embraced from comments flowing from their friends e.g.

*"That skirt makes you look twenty years older, you'll look better in a straight skirt."*

Therefore the way that an individual dresses may be a contracted and modified level from the perceptions of those within their context. The perceived may want to be in harmony with those that perceive them by accepting what is perceived to be acceptable within a given context.

Pearson product moment correlation showed non-significant negative relationships for satisfaction ( $r = -.0335$ ) with apparel and all the knowledge and skills attributes ( $r = -.1214$ ) by year of study, (see Table 5). The low negative

correlations indicate that the respondents' advancement in studies did not make a great difference in their knowledge and skills used and satisfaction with chosen of apparel. They are also likely to be less careful about fashion knowledge probably because they care more about making the best choice among affordable alternatives, regardless of the fashion trend.

## **CONCLUSIONS AND RECOMMENDATIONS:**

**Findings of this study suggest that knowledge and satisfaction with allowance influence satisfaction with choice of apparel.**

**There should be educational programs that enhance the knowledge and skills required for all consumers and help them to be more prepared to face the challenges in the market place.**

**Changes in today's society oblige all educators to expand, redefine, and re-package current programming to meet the priority needs of all consumers. The consumers in this study were highly interested in knowing more about apparel selection. Therefore, the curriculum should be redesigned to cater for aesthetic programs that will reach and benefit all categories of consumers.**

**Clothing, textiles and design specialists must broaden the audiences they serve as their profession has been concerned with the well being of individuals and families. Thus they should empower individuals to enable their physical, psychosocial, economic, and aesthetic well being in the area of apparel to increase their knowledge and skills. On a broader view, all the areas that can empower individuals strengthen families and enable communities need to be stressed**

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## ARCHITECTURE AND ITS OCCUPANTS: PERCEPTIONS OF STUDENTS AND FACULTY AT TWO PROGRAMS

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### ABSTRACT

This study aimed to identify the perceptions of students and faculty at two architecture programs in the Southeastern United States about the effects of architecture design decisions on occupants. The data revealed that students and professors acknowledged various human issues in the design projects which were divided in five categories: (1) Interaction with building, (2) Image of the building, (3) Effects on occupant behavior, (4) Feeling within the space, and (5) Other related concerns. These categories are discussed and comparisons drawn to identify the nature of architecture pedagogy with reference to occupants' experiences in architectural spaces. Suggestions are made for architecture curricula to ensure that the understanding of these concerns among students and faculty is fully harnessed and nurtured.

*Keywords: Architecture, Occupant behavior,*

### INTRODUCTION

Dewey (1925/1981) stated that "Experience is of as well as in nature. It is not experience which is experienced, but nature – stones, plants, animals, diseases..." (p. 12). As a result of built structures becoming an integral part of the surrounding, a large part of nature has now been replaced by environment (Lippard, 1997) and human experience is mostly confined within built environments. The essence of architecture and interior design should include the interaction between spaces and their occupants to effectively fulfill their pragmatic maxim (Bhatia, 2005; Ziff, 2000).

Scholars have commented on the structure of architecture education and the need to incorporate reflective inquiry of students' everyday encounters with the environment to encourage designs that are more responsive to spatial experiences (Gelernter, 1988; Livingston, 2000; Nicol & Pilling, 2000; Quayle & Paterson, 1989; Waxman, 2003). In that context, this study aims to identify the perceptions of students and faculty at two architecture programs towards occupants' experiences in architectural design and to understand the extent to which architecture programs incorporate the relationship between designed spaces and their occupants in the structure of their design studios. An extensive review of all environmental, experiential and behavioral psychological theories related to architecture is neither the intent nor within the

scope of this paper. The following sections provide an overview of the literature which provides the context for this study.

#### Occupants' Experiences and Architecture

There is a reciprocal interaction between human beings and the places they enter (Lippard, 1997). The identity that human beings bring to a place undergoes some alteration based on the place, the relationship to the place, and other occupants of the place. Holgate (1992) argued that there are certain emotional or psychological states and reactions associated with elements of building designs, which are in a constant interplay with the occupants' rational responses to the same. The design of spaces affects people's perception of the space, sense of security, sense of place, and feelings such as empathy and nostalgia. Scholars have widely emphasized and studied the need for incorporating theories of behavioral psychology and the interaction of human beings with the built environment as important stages in the architectural design process (Gifford, 2004; Honikman, 1975; Rudd, 1985).

Deasy (1974) summarized the psychological and social effects of spaces as working in three ways: (1) the stress people experience in accomplishing their goals – group or personal, (2) the form and nature of people's social contacts, and (3) people's feelings of identity and self-worth. Spaces that are not designed with these concerns impose unnecessary handicaps on their occupants. In other words, the designed spaces



essentially affect occupants' psychological states, relationships with others, and personal opinions. There are several discussions on the idea of architects working in association with behavioral scientists and social psychologists to design and build structures that are responsive to society and human psychology (Gutman, 1972; Deasy, 1974). Deasy (1974) stated that this association will be proven highly feasible and rewarding by outlining a design process that starts with the study of the people whom the building will serve. Rambow and Bromme (1995) emphasized a need for including the study of psychology in architecture training to enhance the evaluation of pre-theoretical personal experiences in postulating the assumptions and beliefs that guide professional practice.

Concerns related to occupants' experiences with spaces may be best discussed with reference to architectural experience and sensory perception, essentially the aesthetics of architecture. Several philosophers (Dewey, 1970; James, 1907) discussed the importance of experience and sensory perceptions in shaping lifestyles, beliefs, and identities. The belief that everything in people's minds is a result of their sensory experiences formed the basis of empiricism in the eighteenth century and has been prevalent in philosophical discussions (Gaarder, 1994). Empiricist thought is based on the idea that human understanding is confined within the boundaries of experience (Scruton, 1995). Scholars noted that pragmatism is derived from the interaction between human beings and art works, an active analysis of the experiences during this interaction, and the consequent reorientation of people's beliefs toward themselves and events surrounding them (James, 1907; Rorty, 1989; White, 1998).

#### *Pragmatism*

Pragmatism is the philosophy which guides this study because of its emphasis on the importance of experience (Dewey, 1958; Dewey, 1925/1981). The basic premise of pragmatic philosophy is the idea that experience consists of interaction between human beings and their environment (James, 1907) and, by extension, human beings' experience with art (Dewey, 1958), including architecture. The test of the 'truth', the authenticity of experiences lies in its validation in real life. James (1907) defined the pragmatic method as one that steers away from supposed

necessities and first impressions and focuses on consequences and facts. Spiegel (1998) identified art as existing in order to achieve certain designed purposes in terms of its effect on its audience. Anderson (2003) outlined the underlying assumption behind pragmatic theories of art as the need for art to do something meaningful while paving the way for the social, political, and spiritual betterment of the world. Pragmatically, the functions of art are to maintain the values, attitudes, and sense of reality across generations and to give character, identity, and status to communities, individuals, and institutions; like styles of architecture (McFee, 1970).

Neo-pragmatic art educators proposed that pragmatic methods of instruction will enable students to actively analyze their experiences, eventually reorienting their beliefs toward themselves and the events that they encounter (White, 1998). Applied to architecture, the pragmatic method will involve a thoughtful analysis of experiences resulting from the interaction between occupants and their environment (Gelenter, 1988; Nicol & Pilling, 2000). This will help architects and architecture students to develop insights into the way architectural elements affect occupants' experiences and behavior in a space, as well as their worldview. This study is grounded in the pragmatic view of experience, architecture, and the means to explore and analyze. The active analysis of architectural space will include an assessment of aesthetic criteria which are central to the experience and interaction between people and the space they occupy and therefore the response to the space (Hill, 1999).

#### *Aesthetic Experience and Architecture*

Discussions of beauty and aesthetics have been prevalent since Plato and his definition of absolute beauty as a concept that could only be comprehended by intellectuals (Holgate, 1992). Cherryholmes (1994) stated that beauty, harmony, pleasure, joy, success, and well-being are all criteria that should be used in assessing consequences of bringing out aesthetic implications of the pragmatic maxim. Aesthetics in architecture goes beyond beauty and acts as a tool toward the fulfillment of its pragmatic purpose. The main goal of architecture should be to create buildings where the aesthetic aspect is related to experiential reality (Fitch, 1972; Fitch, 1988).

The idea of aesthetics in built forms has been restricted to visual stimuli (Fitch, 1972; Holgate, 1992). Scholars argued for a need to encompass the other senses; to include qualities that are pleasing to the mind, exalt the senses, and appeal to taste and pleasure (Holgate, 1992; Spiegel, 1998; Ziff, 2000). Fitch discussed the need to include context, physical conditions of viewers, their psychological state, and the response of the occupants to the impact of the building on them. Hill (1999) defined aesthetic experience with respect to architecture as an architectural experience which is accompanied by a sense of place and the emotions attached to occupants' interaction with the space. Bhatt (2000) argued that people's aesthetic experiences become justifiable reactions, emotions, acts, and perceptions of their experiences. A study of the interaction between human beings and their environment will yield important information for architects with respect to the emotional and behavioral reactions that the interactions provoke (Gifford, 2004).

#### *Environmental Psychology and Architecture*

In his book *Environmental Psychology: Principles and Practice*, Gifford (2004) defined environment as built settings. He defined environmental psychology as "the study of transactions between individuals and their physical setting" (p. 1). He mentioned that these studies would lead to more humane environments and improved interactions between people and their built as well as natural surroundings. Gifford stated that environmental perception includes gathering of information about the environment as well as the means of assessing the environment. This process of information gathering is primarily visual but includes other senses (Gifford & Ng, 1982). Robson (1999) mentioned three modes of perception in human beings: (1) operational mode, in which we concentrate on elements of the environment important to accomplishing a task; (2) the responsive mode, which includes our everyday noticing of things around us; and (3) the inferential mode, in which we focus our attention on elements that support our knowledge of the environment. An environment which provides information on all three levels is a successful environment especially when it also presents things that are familiar and relate to past experiences of the occupants.

Pelli (1999) discussed emotions and architecture

and stated that "architecture is one of the great arts. We find proof of this in the depth of emotion that good buildings provoke in us." (p. 9). Architectural elements of a space affect the perception of spaces and consequently the emotional and behavioral responses to the environment (Holgate, 1992). These architectural elements include, but are not limited to, walls, ceiling, floors, windows, light, and color (Gifford, 2004).

Color has a significant impact on daily life and plays an important role in self-presentation as well as forming of impressions (Hemphill, 1996). The behavioral connotations of color influence the states of mind as well as the perception of physical qualities of the immediate environment (Wells, Need & Crowell, 1979-1980). If used resourcefully in the design of spaces, color can influence the user's emotional and mental balance (Portillo & Dohr, 1993; Wells et al, 1979-1980). Hogg, Goodman, Porter, Mikellides and Preddy (1979) identified five factors related to color that influence the perception of an environment. These factors include dynamism, spatial quality, emotional tone, complexity and evaluation. Another factor that influences perception of space is lighting. Sorcar (1987) mentioned that there is an association between illumination and the mood created in interior spaces. Lighting affects impressions of space, relaxation, privacy, pleasantness, boredom, excitement, confusion, insecurity, and brightness. Lighting conditions in a space also affect the perceived color. Occupants' personalities and their perception of various architectural elements will have significant effect on their behavior and personal, as well as social space.

*Personal and social space.* Gifford (2004) defined personal space as "the geographic component of interpersonal relations" (p. 122). Although the term is *personal space*, it actually refers to the distance between individuals and their relative orientation when they interact. Other than personal and social factors, physical environment and settings influence personal space. Theories of personal space can provide architects with information that can be incorporated into building designs. They can provide important "behavioral basis for humane design of buildings" (p. 143).

Hall (1968) defined space as a medium of communication between individuals and

introduced zones of proximal development to identify boundaries of social interaction and feelings of privacy. He identified proxemic zones based on relationships between people and objects within the microenvironment. De Long (1991) introduced axial orientation of occupants in the space as a factor in defining the zones. The arrangement of objects and the occupant's relative orientation in the space is an important factor affecting these relationships. De Long mentioned that the zones are based on occupants' perceptions and interpretations of the space and their feelings of relative privacy. The zones identified by Hall and De Long are a means of incorporating behavioral studies in the planning and arrangement of microenvironments. These zones may be used to identify the optimum or preferred proportionality of living spaces, furniture arrangement, location of areas relative to the entrance to the space, and the perception of relative formality and informality in the space (De Long, 1991). The arrangement and design of spaces with consideration of proxemics will play an important role in predisposing occupants to certain behavior in the space.

#### *Design and Social Behavior*

Deasy (1974) discussed a movement which proposed that the fundamental purpose of design goes beyond creating buildings and encompasses the idea of designing settings for human behavior and for human beings to live together with useful and pleasurable interactions. The design of spaces has an immense bearing on human interaction with others in the community – others sharing the place (Waxman, 2003). Territoriality. Gifford (2004) defined territoriality as “ a pattern of behavior and attitudes held by an individual or group that is based on perceived, attempted, or actual control of a definable physical space, object, or idea that may involve habitual occupation, defense, personalization, and marking of it” (p. 150). It involves locating objects to define one's territory in a manner which indicates one's identity. Several personal as well as social factors influence territoriality. These factors include gender, personality, social setting, socio-economic status, prevalent competition for available resources and legal ownership. Gifford (2004) mentioned that dominance and control is the major social behavior with which territoriality has been associated. Control refers to the ability to influence ideas, space, and other resources in the territory. People's behavior is affected by the

control they have or seek over their territories. Territoriality essentially has an effect on a variety of human behaviors. Personalization of spaces was found to encourage social interaction and improve the atmosphere (Holahan, 1976; Vinsel, Brown, Altman, & Foss, 1980). If designers incorporate knowledge about territoriality in the design of homes, offices and institutions, the spaces will allow occupants optimum amount of control over the space (Gifford, 2004). Such environments can improve the quality of life significantly by providing occupants with a greater sense of self-determination, identity, and safety.

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Crowding. Crowding refers to a personally defined subjective feeling arising from an experience of other people in the space (Gifford, 2004). Several personal, situational and cultural factors affect the experience of crowding. Gender, personality, psychiatric status, preferences, experience, mood, and sociability are personal variables associated with crowding. Culture and community size are other factors related to crowding. Crowding usually evokes negative behavioral and emotional responses and adversely affects social interaction (Stokols, 1978; Sundtrom, 1978). Negatively toned attitudes that may be associated with crowding include less perceived control, safety, privacy, building satisfaction and lower quality of relationship with others in the space (McCarthy & Saegert, 1979). Gifford summarized that crowding has physiological, behavioral and cognitive effects, including health problems. Architectural design has a substantial influence on the experience of crowding. The scale, arrangement of rooms in buildings, organization of spaces, ceiling heights, and light conditions are some architectural characteristics that influence crowding and its behavioral or emotional implications (Gifford, 2004). Factors that augment the experience of crowding include lower ceilings, longer corridors, higher density, taller buildings, curved walls and less light. Evans, Lepore and Schroeder (1996) mentioned that increased architectural depth of high density residences results in less psychological distress and social withdrawal for the occupants. Architectural depth is related to the number of spaces one must pass to go from one room to another. Careful environmental design may help to ease the experience of crowding in a space.

Based on the review of literature it is clear that

there is a need for architecture and architecture pedagogy to respond to experiential connotations of design decisions. In that context, the guiding research question of this study was: What are the perceptions of students and faculty at two architecture programs accredited by the National Architecture Accreditation Board (NAAB) about experiential concerns related to architectural design?

## METHODOLOGY

Qualitative research was adopted as the primary research method in this study in order to gain a clear and insightful understanding of participants' perceptions of the central focus of this study, namely experiential concerns in architectural design. Additionally, quantitative research and data analysis methods were employed to afford a thorough analysis of the data that was collected. A study of the list of NAAB accredited architectural schools ([www.naab.org](http://www.naab.org)) led to the selection of two schools in the Southeastern United States. The selection was largely based on geographic proximity to the researcher's home town to facilitate multiple visits for data collection. To maintain anonymity, the two schools will be referred to as School A and School B and pseudo names will be used for all participants.

Data collection included observations, personal interviews, and focus group interviews. The protocol for semi-structured interviews was approved by the Institutional Review Board at Florida State University. Observations were conducted in the fourth-year design studio during student discussions with professors on ongoing design projects as well as during formal presentations and critiques of student work by a panel of jurors including the professor teaching the design studio and other invited faculty and practicing architects. Observations were conducted during class hours for approximately four hours for each of two visits. Attention was paid to how students explained their project and design decisions, comments and questions from the panel or jurors and students' responses to the questions. Observation notes were recorded in the form of field notes.

Personal interviews with faculty helped to identify the foci that drive the structuring of respective programs and design studio projects, as well as

faculty expectations in terms of the incorporation of experiential concepts in architectural design. Faculty interviews were based on a semi-structured protocol and lasted approximately 30 minutes each. The interviews were conducted before the class session on the day of student critiques and were tape recorded.

On the second day of observations, the day of student presentations and critiques, the first six students to present their projects at each school were invited to participate in focus group interviews. While all six students participated from School A, five students participated from School B. The sixth student did not arrive at the designated location for the interview. Students at School A recommended the use of a conference room for the interviews while interviews at School B were held in a classroom not in use at that time. The interviews lasted approximately 90 minutes at each school and were geared towards understanding students' views of occupants' concerns in architectural design and the incorporation of the same in their design projects. The interviews were tape recorded and later transcribed.

Data analysis involved coding of data to identify occurrence of ideas related to occupants' experiences in architectural spaces. All comments from students and faculty as well as notes from observations were isolated for further analysis. The second round of coding of the data revealed categories associated with the central theme. Color coding was used to separate various categories of comments corresponding to a variety of design considerations related to experiences and behavior of occupants. These categories were further refined to identify individual definitions from the students' and faculty's perspectives, eventually providing definitions from each viewpoint for the central theme of the study, experiential concerns in architectural design.

## RESULTS

Several scholars emphasized the need for architects to address occupants' experiences, emotions and behavioral responses to the built environment (Gifford, 2004; Jarrett, 2000; Pelli, 1999). In that context, data analysis for this study involved review of field notes and interview transcripts for references to various experiential

concerns in architectural design to understand the perceptions of faculty and students at the two selected schools. In-depth analysis of the data revealed five categories which contributed to this theme: (1) Interaction with building, (2) Image of the building, (3) Effects on occupant behavior, (4) Feeling within the space, and (5) Other related concerns. Following is a discussion of each of these concerns supporting the definitions with quotes from the data. A narrative format using direct quotes from participants was deemed the most appropriate to clearly communicate the essence of responses from students and faculty.

#### *Interaction with Building*

An important aspect of how spaces affect occupant is the result of the interaction between people and buildings. This interaction may be stated as the initial stage for all experiences within architectural spaces. This category, therefore, may be understood as the foundation for the other four categories that define experiential concerns in architectural design. In their projects, students at School A addressed the interaction of occupants of the building as well as pedestrians around the building and people approaching the building. Lauren felt that Professor Karen emphasized the understanding of how the spaces they design respond to people. At School B, during Allen's critique Professor Roger talked to him about the edge of the building and explained,

*Something is better about the experience of the building inside and outside if there is a communication between the inside and outside. It is an unpleasant urban experience if there is a wall and you have no idea what is going on inside.*

During another critique at School B, Professor Graham suggested to a student designing a student activity center that relocating the column grid may create gathering spaces for people around the building. He said that the level of activity on the outside of the building will make the passers-by question "If there is so much going on outside, how much more can be going on inside."

#### *Image of the Building*

At School B, Allen described that experiences with a building are rooted in how the building portrays itself. He explained that, "when you approach a building, you automatically get a feeling of what the building is... maybe not the folks in it but how it presents itself." Students talked about the

experience of walking up to a building and the information gathered about the building during the approach. Mike from School A said it was most essential to consider people in the space and ask if they have "a feel for what it was used for." He included cognition and ability to navigate toward and through a building as other important aspects related to how the building presents itself to its occupants. His major concern was whether people can find their way around the building when pointed in a certain direction.

While presenting his design Luther (School B) talked about the context in which the building was located and said, "If you did not know that it was a gym, you would not know from the outside." He was designing a multi-use community recreation center in a historic district and in that context his design concept was to follow the architectural style and proportions of the surrounding buildings. His concept was anchored in masking the true identity of the building such that it would archetypically imitate the contextual functions and architectural style.

#### *Effects on Occupant Behavior*

How spaces affect occupants will define how they behave and behavioral implications of architecture become an important component of addressing experiential concerns in the design process. Some student participants were sensitive to occupant behavior in their designs. Joey and Samuel (School A) talked about the effects of color on behavior. During the interview at School A, Lauren described a video the class saw about New Yorkers in plazas and noticed certain behavioral patterns based on design features that stir occupants' curiosity. She said, "So I think it is good to have an element of surprise in the architecture so that people will want to go in there and explore what is going on in there." Mike (School A) added that the selection of materials can influence "how (people) basically walk through a space." None of the students talked about the behavioral connotations of their design decisions when they presented their projects during critiques.

Professor Karen talked about her thesis which was based on understanding "archetypal actions, human actions, and the way the space helps to choreograph those actions or support those actions." During Lauren's critique, at School A, one of the visiting architects asked her how she would like people to move along or through the

courtyard in her building and explained that she should integrate those ideas in her design. The only references to behavioral concerns in architecture by faculty or critics were made at School A.

#### *Feeling within the Space*

Several students talked about comfortable occupation of the buildings they were designing, especially during the focus group interviews. Lauren (School A) summarized that the most important concern that architects ought to address lies in the details and “small things that happen in your building that make people experience something. The details, like, people will experience something what you want them to experience.” She felt that the feelings that spaces evoke are related to people’s memories of the past; “Maybe a door knob that reminds you of your old house or what you used to do when you were a little kid or something like that. So I think details can impact people.”

Summer’s (School A) design was based on the understanding that, in her design of the business school, it was essential to provide open spaces for the occupants to walk through when they left their classrooms or conference rooms after hours of being indoors. She explained that her main design concept was “relief from inside,” and she had created a series of indoor and outdoor spaces to achieve that.

Professors and critics suggested the implications of students’ designs on occupants’ emotions and indicated elements that may provoke negative emotions like fear, rejection, and dullness. During Stanley’s critique at School B, Professor Roger asked him to reconsider the location and design of the fitness rooms and said, “No one wants to be exercising or swimming in a dungeon area.” Again, during Luther’s critique Professor Roger talked about the feelings that some dull spaces may evoke as “not dingy dungeony kind of spaces where you wonder who might be around the corner.” At School B one of the visiting architects commented on Summer’s design of the parking lot that “it is unfriendly to park cars at the very end. Students and faculty expressed their concern about the feelings of occupants in the spaces they design an equal number of times. Students were concerned about the image that their buildings portrayed but professors and critics did not talk about this concern. During the focus group interviews students talked extensively about

various concerns and showed empathy toward occupants’ interactions with the spaces they design and also toward how spaces emotionally affect their occupants. Lauren (School A) talked about how the selection of finishes in a space and the proportions of the space can make people feel welcome or uncomfortable. All students felt that it is important to ensure a feeling of comfort in the space. Lisa, at School A, elaborated and said that it is essential to design “what it feels like, not what it necessarily looks like.” At School A students continually talked about pedestrian interaction with the building and experiences at the street level. The design project was a community center in the downtown area for the town and they were encouraged by Professor Karen to consider the pedestrian activity.

It is nicer to have activities and functions at the edge of parking.” He suggested that it is better not to make people park next to inanimate objects. The feelings that different design elements and spaces evoke in their occupants was a widely emphasized concern during critiques at both schools.

#### *Other Related Concerns*

Several comments from the participants referred to occupants’ experiences in spaces but were not articulated clearly enough to be placed in one of the defined categories. General references to architects’ responsibility toward occupants’ behavior and emotions were counted toward this category. Students showed concern about the difficulty of empirically defining how people react in certain spaces. Samuel (School B) mentioned that “psychologically a lot of things you have to just use a rule of thumb because everybody is different, their psyches are different. You really can’t help that.” Anna’s (School B) approach was to analyze how she would feel in a space and assume a similar response from other occupants.

Susan (School A) introduced the spiritual component which may be tangentially related to the experiential component. She said that architects are responsible for “the development of themselves whether it be, you know, a spiritual sort of connection with their surroundings or if it is just an area of comfort.” Her definition of architecture was that “it is more than shelter. It is designing spaces that people are happy in.”

The findings from the study led to several significant inferences that can be discussed with

reference to architecture pedagogy and applied to a variety of other fields in family and consumer sciences. A comparison of responses under each category is the first step in the analysis of findings to derive definitions of student and faculty perceptions about occupant responses to architectural design.

*Discussion of Categories*

Table 1 presents the frequency chart for each of the five categories as counted from observation field notes and interview transcripts.

Table1: Frequency Chart for Categories

Category	Students	Faculty	Total
Interaction with building	8	6	14
Image of the building	5	0	5
Effects on occupant behavior	3	3	6
Feeling within the space	9	9	18
Other psychological concerns	5	1	6
<b>TOTAL</b>	<b>30</b>	<b>19</b>	<b>49</b>

Professors and visiting architects presented insights to students about the emotional implications of their design decisions on the occupants of the space. They indicated specific design elements and especially emphasized the negative feelings that occupants may experience in response to those elements. Some critics made suggestions for students to enhance the experience of different spaces in their designs.

During the interview, Professor Karen described the school’s major focus and said that, although it is not the primary focus, students are introduced to “the idea of experience, the personal experience of architecture, and of spaces that one person walks through or something like that.” An important experiential aspect for her was the interaction of people with the designed spaces.

**DISCUSSION**

Based on the findings and frequency charts for the various categories discussed by students and faculty, several insights may be derived about their perceptions of the application of occupant

responses to architectural spaces. This assessment also led to further questions from the perspective of both students and faculty.

**Student Perceptions**

Decision making in architectural design process that addresses occupants’ experience may address concerns related to the way the environment affects occupants’ psyches, emotional reactions, and behaviors in the designed space. These concepts are largely based on the apparent interaction of occupants with the environment/space. Before the focus group interviews at each school the researcher briefly explained this definition to the students but did not talk about the definition in detail to ensure accurate opinions and responses from them.

During the focus group interview at School A students were asked to discuss the most important experiential concerns in architectural design. Several students at both schools were hesitant to talk about important behavioral and psychological concerns that they should address in their designs. They attributed their hesitation to the difficulty in generalizing the psychological associations between buildings and occupants. Students said that, to overcome this hurdle, they rely on “common sense” to assess how spaces designed with certain elements would feel. Stanley explained, “We all know that, you know, that a five-foot roof in a 20-foot-long space does not feel good. And it is not just phenomenological but that’s also in a sense common sense. You know, like dimensions of a space will dictate the psyche to do certain [things].” He gave further specific examples and said, “Red will tell the psyche to do one thing. Fluorescent light will tell the psyche to do one thing or artificial light or natural light. They all, you know, have different affects on the psyche, you know.” Anna (School B) said that she relies on her own impressions and responses to spaces and uses that as an understanding of how projected occupants will feel in similar spaces. Others felt that history serves as a very useful subject by helping them understand previously designed spaces and people’s responses to those spaces. In all the answers from students regarding their qualms about generalizing experiences with the built environment, reading what people write about other buildings was the only reference to getting information from literature. None of the students mentioned any research journals or books they

could reference to get answers, guidance, or clarification.

Students mentioned several interesting concerns which they considered important issues to address in their designs. As discussed earlier, participants' responses were divided in five categories; (1) Interaction with building, (2) Image of the building, (3) Effects on occupant behavior, (4) Feeling within the space, and (5) Other related concerns. Figure 1 presents the percentage distribution of student responses during observations and interviews divided among the five categories. Almost 17% of students' responses in this theme were categorized as *other related concerns*. This may be an indication of an unclear understanding of the concept. However, students talked about other concerns, especially the interaction between occupants and spaces and the feelings and emotions experienced in buildings. The *image of the building* was an aspect of which although not expected during the initial data coding, emerged as an important facet. Lastly participants made some references to influences of the built environment on occupants' behavior.

Despite concerns about students' understanding of the concept based on their certain responses, they showed sensitivity to the relationship between architectural design and various facets of the occupants' experiences in a building. To further clarify students' understanding of these concerns, a comparison of students' responses during the interviews was drawn against the concerns addressed during their design critiques. The observation data was based on students' presentations of their projects to faculty and critics, as well as their answers to questions posed by the panel. Figure 2 presents the comparison between data from observation field notes and interview transcripts for each of the five categories.

There is a large discrepancy between the two subsets of the data. The differences between percentage responses related to each category dropped dramatically for the observation data, except for one category – *image of the building*. Interestingly, this was the category which emerged during the data analysis and was not expected at the initial stages of data coding. There was no mention of occupant behavior or even general references to experiential concerns having been addressed in the designs. Some students

talked about considering the feelings evoked by the spaces they designed. Samuel explained the glass wall around the swimming pool in his building and said that the play of light and water will create a pleasant atmosphere. Presenting her design of the community center on the riverside in Georgia, one student talked about the interaction between pedestrians and the activities in the building which would invite them into the community center. Other students made some comments while introducing their projects to the panel of faculty and critics but not for all the categories and the comments were very limited, as is evident from the percentages.

Based on these findings, one may postulate that students showed sensitivity toward the experience of spaces they design. Their broad understanding of these issues was clear from the different categories that emerged.

#### *Faculty Perceptions*

During interviews with the professors interview questions were geared toward understanding the schools' position on incorporating experiential studies in the curriculum as well as understanding their personal perspective on this issue. Although their answers indicated that the schools make a conscious decision to peripheralize this facet of architectural design several interesting relationships and categories emerged from further analysis of the observation data and interview transcripts. During the interview, Professor Roger (School B) made no references to the experiences in spaces, behavioral affects of design, or the interaction of occupants and the designed spaces. At School A, Professor Karen explained her own thesis work which was based on understanding how spaces help to choreograph different human actions and, therefore, understood how design affects human behavior.

Figure 3 presents the percentage distribution of faculty's comments on the five identified categories as calculated from analysis of observation and interview data.

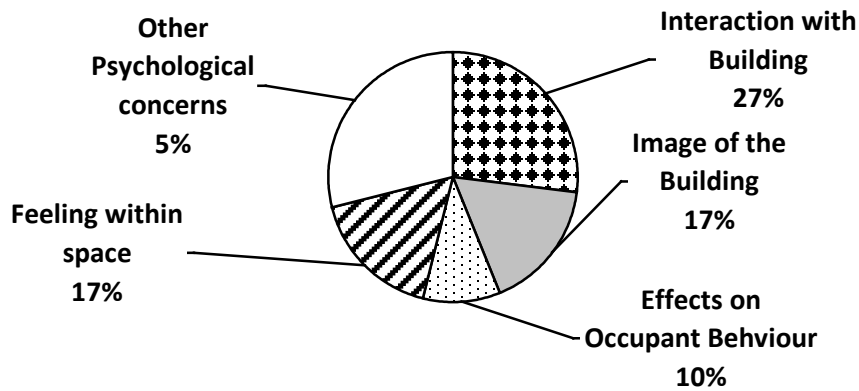
Professors and critics showed immense sensitivity toward certain experiential aspects of architectural design. They addressed the interaction between occupants and spaces and how this interaction affects occupants' emotional state as well as the feelings that spaces generate in people. They made references to human



behavior and its importance in architectural design decisions. Neither professors nor the critics

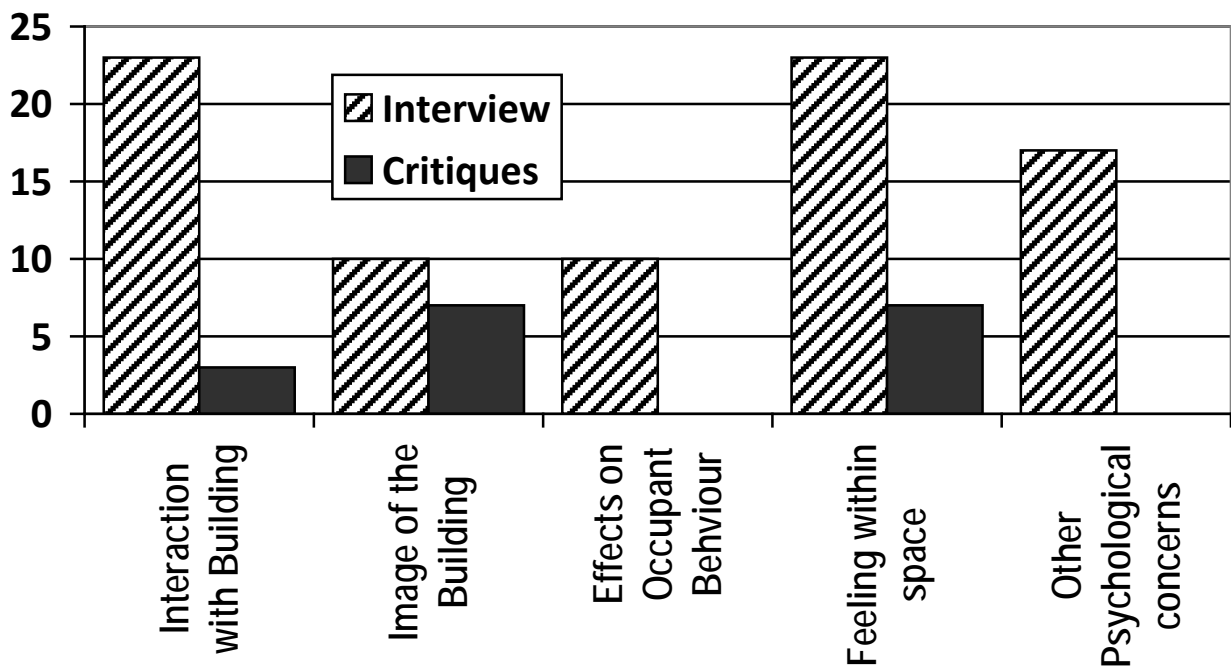
discussing student designs talked about the images that the buildings portray to people.

associated with this theme divided by critiques and interviews.



**Figure 1** Percentage Distribution of Student Responses to Psychological Concerns

Note: The percentages are out of the total number of responses categorized under *psychological concerns* 30 for observation and interview data combined.



**Figure 2** Percentage Distribution of Students' Responses in Focus Group Interviews and Critiques for Psychological Concerns

Note: The percentages are out of the total number of responses categorized under *psychological concerns* 30 for observation and interview data combined

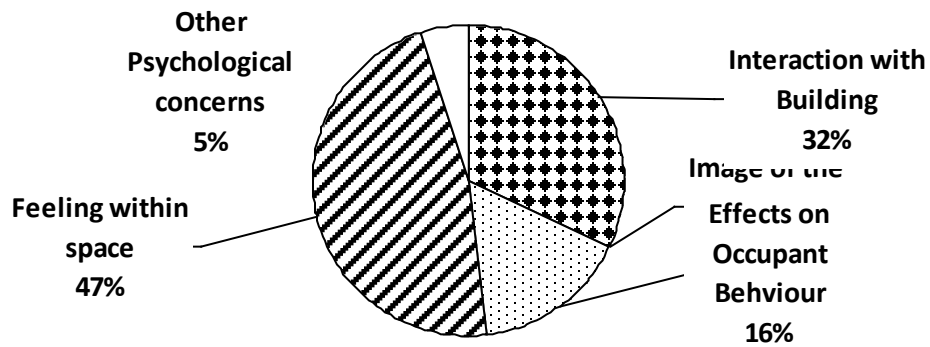


Figure 3 Percentage Distribution of Faculty Responses to Psychological Concerns

Note: The percentages are out of the total number of responses categorized under psychological concerns 19 for observation and interview data combined.

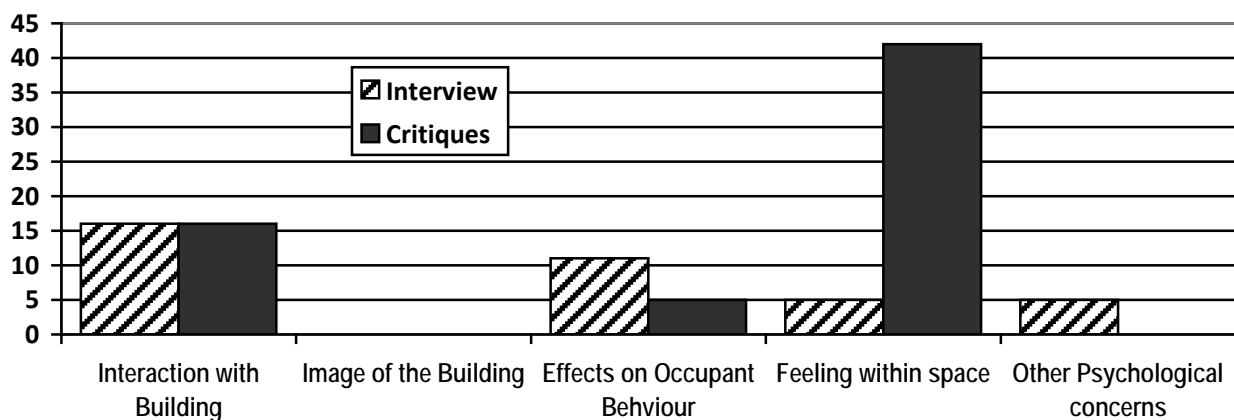


Figure 3 Percentage Distribution of Faculty Responses to Psychological Concerns

Note: The percentages are out of the total number of responses categorized under psychological concerns 19 for observation and interview data combined.

During the interview with the faculty members, they did not express such extensive concern about occupants' experiences and their influences on design decisions. How then did they show such sensitivity to multiple aspects of the experiential connotations of architectural design? To better evaluate the understanding among faculty and critics about psychological concerns the frequencies for observation and interview data were compared. Figure 4 presents the percentage distribution of different categories

the feelings that spaces generate in their occupants. This issue was extensively addressed during the critiques. Professors explained design suggestions to students by asking them to consider the feelings that their designs will generate. One of the critics at School A explained to Summer that she should design her parking such that people do not park near inanimate objects which might be intimidating. At School B critics indicated areas in students' designs which they thought might feel "dungeony." This term was repeated on multiple occasions at School B. They warned students against designing spaces which were dark, gloomy, and cornered, explaining that people are not inclined to go into

Clearly, the important factor in consideration is

such areas. During Luther's critique Professor Roger mentioned, "not dingy, dungeony kind of spaces where you wonder who might be around the corner." Other concerns about how people would feel were brought up by other critics. At School B, Professor Chad pointed to Anna's design of an enclosed swimming pool and explained that the feelings that such areas generated are not pleasant and explained that it is because the "first thing you experience in an indoor pool is the smell." He suggested that Anna rethink that design and find solutions to avoid such feelings. Interestingly, most of the comments by professors during the critiques were about the negative feelings associated with different design elements. This may be attributed to the fact that the data is from critiques where professors and critics are commenting but also making suggestions to students for how the design may be improved. They were probably, therefore, indicating to students all the facets of their designs which were unsatisfactory, needed more thought, or were not substantially resolved. Professors' perceptions of experiential concepts in architectural design may be considered to include an understanding of the interaction between spaces and their occupants with respect to the feelings that these spaces generate and to some extent how they determine how people act in spaces.

Based on the findings of the study, the following definitions may be postulated for experiential concerns in architectural design as perceived by the students and faculty participants of this study.

*Students' definitions of experiential concerns* may be articulated as the interactions that occur between the spaces and their occupants which generate certain emotional reactions from occupants, affect their behavioral patterns, and influence occupants' perceptions of the building.

*Faculty's perceptions of experiential concerns* in architectural design may be considered to include an understanding of the interaction between spaces and their occupants with respect to the feelings that these spaces generate and to some extent how they determine the way people act in spaces.

Several questions were raised in analyzing the data, important among which were the reasons for the discrepancy between the results from the analysis of interview data and data from project

critiques. One reason for this discrepancy may be the presence of visiting professors and architects during the critiques while only the professors teaching the studio were interviewed. The reason for differences in the concerns students emphasized during interview and during critiques may be due to the fact that students are essentially answering questions posed by the panel during the critiques while during interviews they may have been expressing their personal opinions more freely. One may question if the students' sensitivity to experiential aspects of their design decisions although encouraged by their professors still remains overshadowed by other concerns like creativity and technical aspects.

One may question if the increase in faculty and critics' responses to experiential concerns during critiques could be attributed not only to the presence of visiting architects but also to the fact that during interviews the two professors' answers were guided by the schools' objectives whereas during the critiques their questions and comments may be influenced more by their personal sensibilities as architects.

#### Implications for Architecture Education

The inferences derived from the analysis of the data and answers to the questions which drove this study implied certain consequences for architecture pedagogy. It appeared that, although professors and students showed sensitivity toward experiential concerns in architecture, they are probably restrained to some extent by the creative and technical facets. A reevaluation of the objectives set by the schools and clearer definitions of human issues in the goals they set for their students may be an important step in harnessing their intrinsic understanding of the impact of their designs on occupants.

Professor Karen mentioned that, according to her, the reason for the peripheralization of behavioral and experiential concerns in architectural design is because the literature on these topics is inaccessible and unfamiliar to students and architects. There is a need for architecture education to study the means of overcoming this handicap, which restricts students from expressing and incorporating the concerns they appear to consider intrinsic to the profession. Architecture education may incorporate a component in design studios which encourages

students to explore, understand, and reference the available literature on different facets of human issues and the built environment. Students may be encouraged to support their design decisions with concepts from different studies, reports, and discussions. Students mentioned that they derive ideas about how occupants may feel in a space they design by reflecting on the feelings similar spaces evoke in them. This concept may be further developed to encourage extensive reflective inquiry among students (Dewey, 1970; Livingston, 2000).

A greater understanding of aesthetics and the different senses, ideas, and concepts it can encompass will be an important step toward ensuring that student designs respond to the projected users and the community to which they will cater. Architectural theory courses normally revolve around different architectural styles and eras. It may be beneficial to include the philosophies associated with architectural design to introduce discussions such as the extended definition of aesthetics.

In sum, this study further reinforced the need projected by the literature review for an increased emphasis on understanding occupants' experiences in architectural spaces. There is a need is to introduce courses and exercises which will harness students' concepts related to these issues by encouraging professors to incorporate the concerns that they find inherently important to architectural design. Students and professors acknowledged various human issues and one may infer that the need is to provide clarity of definition and implementation to ensure that the designs they produce respond to the greater good of the people and society where their buildings are located.

The relevance of this study in other fields of family and consumer sciences can be explored. The reaction of occupants to architectural spaces can be further extrapolated into the reaction of consumers to apparel, food and other goods, thereby validating the exploration of occupant emotions and psychology in apparel design, nutrition, consumer affairs, family studies and other fields. It will be interesting to duplicate this study in other fields of family and consumer sciences to compare the responses of students from different fields about their ability to understand and apply ideas of aesthetics and behavioral sciences in their respective

professions.

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## EXPLORING THE FOOD BELIEFS AND EATING BEHAVIOR OF SUCCESSFUL AND UNSUCCESSFUL 'WEIGHT LOSERS' BELONGING TO DIFFERENT AREAS OF KARACHI

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### ABSTRACT

The objectives of this study was to explore the food beliefs and eating behavior of successful and unsuccessful 'weight losers'; and to find out the nutritional adequacy of food groups, through a 24 hour food recall. A total of sixty participants were selected from 75 respondents on the basis of their past weight loss, and separated into two groups of thirty each; namely successful and unsuccessful 'weight losers'. Data about their food beliefs and eating behaviors were collected through a questionnaire. A 24 hour food recall was also taken. Results showed that both groups of 'weight losers', differed in their food beliefs, eating behavior and energy intake. 'weight losers' of both groups had an inadequate consumption of vegetables, fruits and milk

*Keywords: Body Weight;, Pakistan; Karachi, weight loss*

### INTRODUCTION

Cognition about food, are important but relatively unexplored determinants of eating behavior. In order to alter nutrient intakes at an individual or population level, an understanding of the way in which food is viewed is essential for anyone working in nutrition (S. F. L Kirk, A.J. Hill, ,1997).

In 1997, the World Health Organization published a landmark document recognizing obesity as a worldwide disease that poses a serious threat to public health (World Health Organization, 1997). Persons who are overweight or obese have substantially increased risk for morbidity from numerous chronic disorders, such as diabetes (Larsson B, Björntorp P, Tibblin G 1981; Kahn HA, Herman JB, Medalie JH, Neufeld HN, Riss E, Goldbourt U,1971) hypertension, (Stamler R, Stamler J, Riedlinger WF, Algera G, Roberts RH 1978; Dyer AR, Elliott P, 1989) and cardiovascular disease (Hubert HB, Feinleib M, McNamara PM, Castelli WP.1983; Rexrode KM, Hennekens CH, Willett WC, Colditz GA, Stampfer MJ, Rich-Edwards JW, 1997). Obesity-related health risk is greater when excess fat is deposited in the abdomen region because this phenotype is a stronger predictor of cardiovascular disease and type 2 diabetes mellitus than general obesity is (Després JP, Moorjani S, Lupien PJ, Tremblay A, Nadeau A, Bouchard C 1990; Goodpaster BH, Thaete FL, Simoneau JA, Kelley DE, 1997). This may be partially explained by excess accumulation

of visceral fat, an independent correlate of insulin resistance (Ross R, Fortier L, Hudson R.1996; Williamson DF, Serdula MK, Anda RF, Levy A, Byers T. 1992) and dyslipidemia (Després JP, Moorjani S, Lupien PJ, Tremblay A, Nadeau A, Bouchard C 1990; Després JP, Lemieux S, Lamarche B, Prud'homme D, Moorjani S, Brun LD, 1995). These observations highlight the need to identify appropriate treatment strategies to prevent and reduce obesity and suggest that the effectiveness of these treatments would be enhanced if abdominal obesity, particularly visceral fat, was substantially reduced.

The National Nutrition Survey (2000) showed prevalence of preobese (body mass index: 25-29.9 kg/m<sup>2</sup>) and obesity (> 30 kg/m<sup>2</sup>) was 24.5% and 2.3%, respectively, in males, and 17.8% and 3.4%, respectively, in females aged 20 years and over (Nobuo Yoshiike MD, Fumi Kaneda MS, Hidemi Takimoto MD, 2002).

Ageing is associated with changes in body composition, including an increase and redistribution of adipose tissue and a decrease in muscle and bone mass, beginning as early as the fourth decade of life. The changes have significant implication for the health and functioning of the individual because of their associations with chronic disease expression and severity, as well as geriatric syndromes such as mobility impairment, falls, frailty and functional decline. There is sufficient evidence currently to suggest that a substantial portion of what have been considered 'age-related' changes in muscle, fat and bone are

in fact related either to excess energy consumption, decreased energy expenditure in physical activity, or both factors in combination. (Maria A Fiatarone S, 2002)

Major environmental and social changes have led to a decrease in physical activity, a rise in sedentary behavior and the consumption of high fat and high- energy foods, all in turn influencing the development of obesity. Effective management involves a multimodal approach with a developmentally aware approach, involvement of the family, a focus on healthy food choices, incorporation of physical activity and a decrease in sedentary behavior all being important (Louise A Baur, 2002) .

Diet restriction remains the most common method of obesity reduction (Williamson DF, Serdula MK, Anda RF, Levy A, Byers T, 1992). Despite the observation that low levels of physical activity are a major cause of obesity, (Schulz LO, Schoeller DA, 1994) increased physical activity alone is not thought to be a useful strategy for obesity reduction.

The conventional dietary approach to weight management, recommended by the leading research and medical societies, (Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults, 1998; Thomas PR, 1995; Position of the American Dietetic Association,1997; Krauss RM, Deckelbaum RJ, Ernst N,1996) is a high-carbohydrate, low-fat, and energy-deficit diet.

According to a study done, at any given time, approximately 45 percent of women and 30 percent of men in the United States are trying to lose weight. (Serdula MK, Mokdad AH, Williamson DF, Galuska DA, Mendlein JM, Heath G, 1999) Despite these efforts, the prevalence of obesity has doubled in the past 20 years (Flegal KM, Carroll MD, Ogden CL, Johnson CL, 2002) and has become a major public health problem (Department of Health and Human Services, 2001).

We therefore performed this study, to explore the food beliefs and eating behavior of successful and unsuccessful 'weight losers' belonging to different areas of Karachi. We also evaluated whether the diet they were consuming, was nutritionally secure or not. This was done by checking the adequacy of the food groups through a 24 - hour food recall.

## METHODOLOGY

Awareness about food is important, but is considered an unexplored factor in relation to eating behavior. In order to change the nutrient intake of a person, it is first important to see how a particular food is viewed by that person. This study was therefore conducted to explore the food beliefs and eating behavior of successful and unsuccessful 'weight losers', belonging to different areas of Karachi, and to examine their 24 hour food intake to find out the nutritional adequacy of their diet. A total of 60 participants were selected from 75 respondents on the basis of their past weight loss and separated into two groups of 30 each, namely successful and unsuccessful 'weight losers' and their food beliefs and eating behavior observed. A 24 hour food recall was also taken to determine the adequacy of the food groups. Criteria for selection included, that all participants attempted dieting in the past, and that they reported no health problems. Subjects were selected from different places to collect data. These included different Universities, Colleges, Slimming Centers, friends and relatives. Respondents were selected on the basis of their statement of their past attempt of dieting, and divided into two groups. Those who have been successful in losing at least 5% of their weight in last three months were categorized as successful. The research tool used was a questionnaire. Participants completed this questionnaire which consisted of 4 parts to obtain relevant detail about their demographic data and general information, food beliefs, eating behavior and 24 hour food recall, to determine the adequacy of food groups. Before starting the final data collection, pre-testing of all the methods used in the collection of data was done. The sample collection was completed from 1st March to 30th March. SPSS version 10.0 was used for data entry and analysis. Data regarding the general information and the food beliefs and eating behaviors of successful and unsuccessful 'weight losers' along with their food recall was entered on SPSS Software. The SPSS Software 10.0 was used for statistical analysis of the data. Then it was compared and results were taken out.

## RESULTS AND DISCUSSION

Results showed that both groups of 'weight losers' differed in their food beliefs, eating behavior and energy intake. The findings are summarized in Table 1, 2 and, 3; and Fig. 1 and 2 .

Proportion of subjects holding inappropriate beliefs were higher among unsuccessful weight losers (table 1). . A higher proportion of unsuccessful weight losers mentioned lack of physical activity as reasons for their being overweight (fig1) and have tried fasting to lose weight (fig2). Frequency of skipping breakfast and that of low fluid intake was also higher among unsuccessful weight losers (table 2). Higher than recommended intake of cereals and lower than

recommended intake of fruits were more common among unsuccessful weight losers (table 3). Dietary inadequacies were very common among both the groups.

The result indicates that there is considerable opportunity for improving the weight loss strategies being followed by weight losers in Karachi.

Others have also found that successful weight losers are more likely to exercise (Kruger J, Blanck HM, Gillespie C 2006) and that weight losers have limited variety in their diets (Raynor HA, Jeffery RW, Phelan S, Hill JO, Wing RR. 2005).

Table 1. Food Beliefs of Successful 'weight losers' & Unsuccessful 'weight losers'

Food Beliefs	Successful 'weight losers'		Unsuccessful 'weight losers'	
	n= 30	%	n= 30	%
Dieting means you cannot eat the things you like*	11	36	13	43
Change eating behavior for the rest of your life	24	80	16	53
CHO should be completely restricted from the diet*	8	26	11	36
Fats should be completely restricted from the diet	13	43	18	60
Dieting means skipping of meals*	4	13	9	30
Walking or exercise is necessary during dieting	30	100	29	96

\*Faulty beliefs

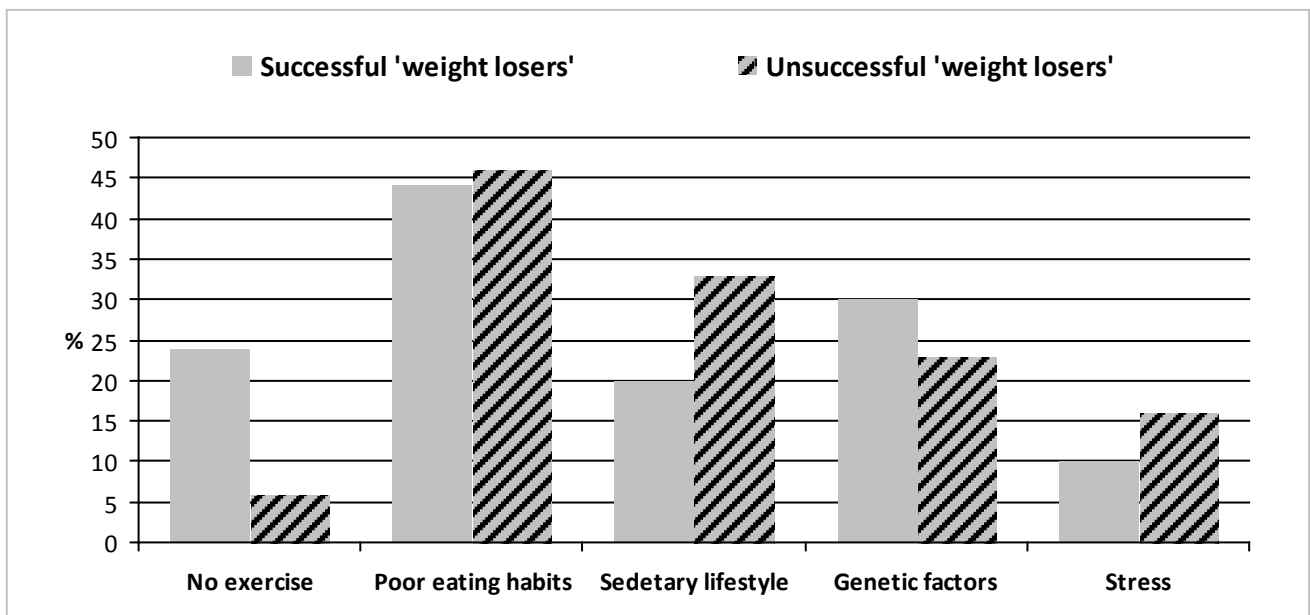


Fig.1. Respondents' views about reasons for their being overweight



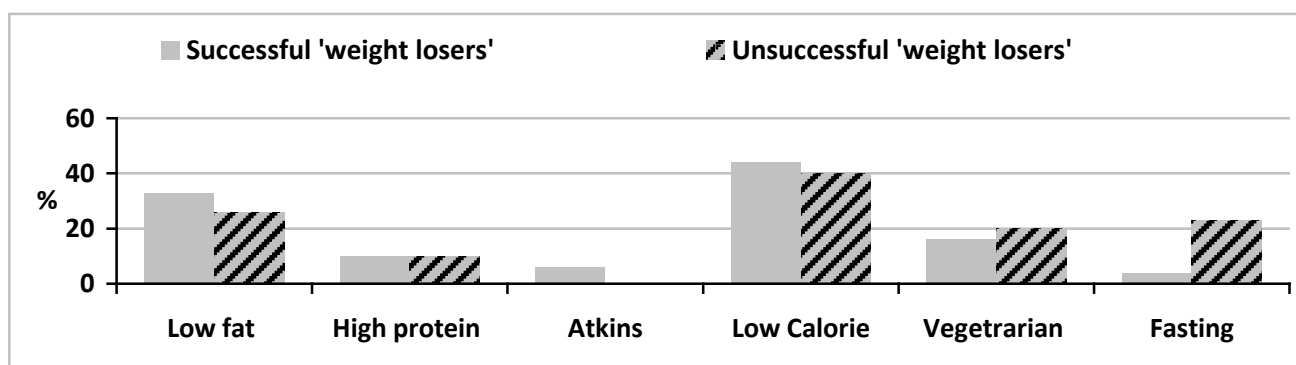


Fig.2. Types of diets that have been tried by weight losers

Table 2. Frequency of skipping meals and level of fluid intake of weight losers

Eating Behavior	Successful 'weight losers'		Unsuccessful 'weight losers'	
	N= 30	%	N= 30	%
Skipping of meals	16	53.3	20	66.7
Specify meals most often skipped				
Breakfast	5	16.7	11	36.7
Mid- morning	11	36.7	9	30.0
Lunch	8	26.7	9	30.0
Tea- time	9	30.0	11	36.7
Dinner	1	3.3	2	6.7
Bed- time	9	30.0	8	26.7
Fluid intake < 1liter	1	3.3	6	20.0
Between 1 & 2 liters	19	63.3	17	56.7
Between 2 & 3 liters	8	26.7	7	23.3
More than 3 liters	2	6.7	0	0

Table 3. Adequacy of dietary intake (in terms of daily servings) of 'weight losers'

Dietary Intake (Servings) Of Successful 'weight losers'									
Food Groups	Recomm. Daily Servings	More than Recommended Daily Servings				Less than Recommended Daily Servings			
		Successful 'weight losers'		Unsuccessful 'weight losers'		Successful 'weight losers'		Unsuccessful 'weight losers'	
		N=30	%	N=30	%	N=30	%	N=30	%
Cereal	6 – 11	1	3.3	4	13.3	20	66.7	16	53.3
Vegetables	3 – 5	0	0	0	0	28	93.3	27	90.0
Fruits	2 – 4	0	0	1	3.3	21	70.0	27	90.0
Milk	2 – 3	0	0	0	0	29	96.7	26	86.7
Meat	2 – 3	0	0	1	3.3	17	56.7	16	53.3

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## Evaluation of Laundry process applied to bed linen in selected hospitals of Karachi

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### ABSTRACT

Hospital laundry is associated with infection control. Adequate linen supply and general health and safety of patients are interrelated. The purpose of this study was to find out the appropriateness of laundry processes applied to bed linen, specifically bed sheets in selected hospitals of Karachi. The sample consisted of 12 hospitals of Karachi. The information was gathered using a questionnaire assisted interview of relevant managers and the evaluations are based on comparison of the respondent's reports with the recommendations of the laundry standards of International Standard Organization (ISO). The findings revealed that most of the hospitals do not follow ISO's laundry standards but apply their self-made standards. When these standards were compared with ISO's laundry standards they were found to be insufficient for example regarding the washing temperature and the use of disinfectants. The reasons to use the own standards instead of those of ISO's were the lack of space, the lack of funds and the lack of the awareness of ISO's standards. It is recommended that government should take measures to make the application of ISO's laundry standards compulsory for bed sheets in the hospitals of Karachi

*KEY WORDS: Infection control, bed linen, standards.*

### INTRODUCTION

The bed linen used in the hospitals requires great care because it affects patients' well-being (Larsson, 1991) and also because of its special nature of utility, in order to provide health and safety to patients and to control the probability of exposing the patients and other people to infection.

Generally laundering means cleaning and ironing but hospital laundry also has to fulfill the purpose of infection control. Textiles sent to hospital laundries contain many types of pathogenic organisms and it is important that laundering not only has an appropriate cleaning effect but also has a satisfactory disinfecting effect. (Fijan, Soaster & Cencic, 2005).

Threats from unhygienic bed linen have been observed. It has been noticed that in some cases after laundry process *Bacillus Cereus* was still found on the hospital's linen. (Barrie, Hoffman, Wilson & Kramer, 1994). Hence, the importance of infection control measures at all stages of the laundering processes from bagging, transporting and sorting to washing, disinfecting, handling and storage are highlighted. (Cullen, 1996)

For this purpose ISO (International Standards Organization) launched laundry standards to

protect the patients and related people from the harmful effects of infected bed sheets. The standard gives means to produce linen free from pathogenic organisms and free from soil and stains and thus to provide high quality care to patients (AKU 2005).

The objectives for this study was to find out the appropriateness of laundry processes applied to bed linen in the selected hospitals of Karachi

### METHODOLOGY

According to the Wikipedia encyclopedia (2008) there are a total of 113 hospitals in Karachi but according to the NED university of Engineering and Technology (2005) only 64 hospitals have been registered by the Government of Pakistan (Pakistan medical center) in Karachi. Among these 64 registered hospitals 4 Federal Government ones, 6 dental surgeries, and 5 Eye hospitals were excluded from the population and so the total population considered for this study was 49 hospitals of Karachi. Therefore the sample size was drawn from a total of 49 hospitals and one fourth of them were included in the sample. The selection of 12 hospitals took place on the basis of the positive response and co-operation of the

management.

The data was collected using a questionnaire. Questions regarding the laundry process were formulated according to the Aga Khan University Manual of ISO standards of laundry process (2005). The questionnaire was filled by the laundry managers or laundry coordinators of the selected hospitals. The questionnaire was based upon the variables which included details of ISO laundry standards, in-built standards for laundry, reasons for not to apply ISO laundry standards, the various processes involved, and to which extent they are applied on bed linen. The data was first entered on Epi data and then it was imported on SPSS for analysis.

## RESULTS

### *Application of ISO Standards*

As given in the figure 1, nine hospitals (75.0%) were following their own laundry standard and only three (25.0%) were following ISO's recommended laundry standards and they are ISO certified. Seven hospitals (58%) performed laundry services inside the hospitals while five (41%) had contracted out their laundry. Reasons given by respondents for non application of ISO's laundry standards were lack of space (22%), lack of funds (44%) and lack of awareness (33%).

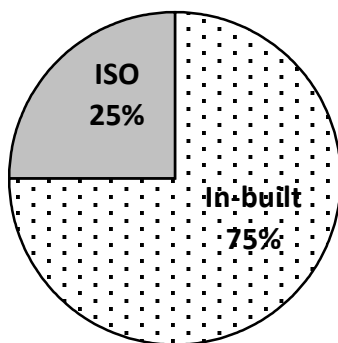


Figure .1 Types of Laundry Standards followed  
*Laundry process in hospitals using their own standards*

Frequency of using selected appropriate or inappropriate practices was assessed among those hospitals that used their own standard (table 2). All the hospitals sorted medium and heavily soiled bed sheets separately and majority of them (55%) were following correct procedure

of taking heavy soiled sheets in plastic hampers to laundry room. Three hospitals used to take it in an open trolley which is not recommended. None of them weigh dirty bed sheet in order to meet the laundry weight range of the washer.

Majority (88%) soak line before washing and all of them soak the linen in hot water for 2 minutes. Though the type of washing machine differs from hospital to hospital most commonly simple washers (77%) are used for washing. All hospitals add detergents in hot water and majority of them (88%) washed bed sheets for 15 minutes or more. However, in most of the hospitals the temperature of washing was lower than that ISO recommends (i.e.75-80°C) (AKU 2005).

Two third of these hospitals (66%) bleach the fabric after washing and most of them use chlorine bleach. Quantity of bleach used was less than 5 grams by 44% of hospitals whereas ISO recommends using 6.25 grams of Chlorine bleach per single bed sheet (AKU 2005).

More than three fourth of these hospitals (77%) did not use any bacteria killer, while according to ISO using bacteria killer after washing is necessary for bed sheets

According to ISO, ironing and folding of bed sheet should be done through machines (AKU 2005). This practice was being followed by only 44% of these hospitals.

## DISCUSSION

According to the results of the surveyed hospitals it is apparent there is need for monitoring and control of laundry procedures being followed by hospitals in Karachi. Observations that many hospitals took heavy soiled linen in an open trolley to the laundry room, used low washing temperature and did not use bacteria killers indicates high level of threats of infection form hospital stays.

Hospitals may know that ISO standards are helpful in infection control, but they would need motivation to assure application of those standards. Government can play a very effective role in this regard by better monitoring and control of laundry processes in hospitals.

**Table 2 Laundry Procedure being followed by Non ISO-Certified hospitals**

Procedure	n	%
Sorting of medium and heavily soiled linen separately*	9	100
Transfer of heavily soiled bed sheet to laundry room in:		
• paper hampers	1	11
• plastic hampers*	5	55
• open trolley	3	33
Weighing of bed sheets <sup>x</sup>	0	0
Soaking technique:		
• in hot water for 2 minutes*	8	88
• in cold water for 2 minutes <sup>x</sup>	1	11
Time of washing		
• 15 minutes	1	11
• 12 minutes*	8	88
Temperature of washing		
• 50-60 OC <sup>x</sup>	2	22
• 60-75 OC <sup>x</sup>	5	55
• 75-80 OC*	2	22
Bleaching*	6	66
• using chlorine bleach*	5	55
• using other bleach <sup>x</sup>	1	11
Amount of chlorine bleach used per bed sheet		
• less than 5 grams <sup>x</sup>	4	44
• 6.25 grams*	1	11
• 7.50 grams <sup>x</sup>	1	11
Use of Disinfectant		
• Yes*	2	22
• No <sup>x</sup>	7	77
Inspection procedure		
• applying*	8	88
• not applying <sup>x</sup>	2	22
Ironing		
• by hand <sup>x</sup>	5	55
• by machine*	4	44
Folding of bed sheets		
• by hand <sup>x</sup>	9	100
• by machine*	2	22

\*=appropriate methods, X=Inappropriate methods

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## YOUNG ADULTS' KNOWLEDGE ABOUT SAVINGS

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### ABSTRACT

A sample of 966 young adults from the province of Quebec (Canada) participated in this study, which aimed to identify the determinants of knowledge about savings and investments and their relative importance. Our findings show that knowledge about savings and investments is rather low. Canadian-born males with high personal annual gross income and education are likely to have a higher level of knowledge in this area than their counterparts. Personal finance education, received outside of high school, attitude towards savings and having met with a personal finance professional, have a significant positive impact on this knowledge. The usefulness of financial education and the need to increase financial independence among young female adults are discussed.

*Keywords: Savings, Knowledge, Youth, Personal Finance*

### INTRODUCTION

From 1992 to 2007, Canada's personal savings rate decreased from 13% to 1.4% (Statistics Canada, 2007). This financial situation is especially worrisome among young adults. Young people today spend more time in school, resulting in a higher student debt load, which requires more time to reimburse and offers less time for putting money aside (Faulcon, et al., 2006). Moreover, the "Y Generation" is expected to receive a greater inheritance than the present adult generation (Godfrey & Streeter, 2002) and will need to know how to adequately manage these assets.

Specific educational programs, which effectively increase knowledge, develop abilities and influence attitudes, are useful for giving people more confidence and an ability to control their financial lives (Faulcon et al., 2006). It is difficult to develop policies and programs because of the

scarcity of data on young adults' personal finances in general and on savings in particular. The educational needs in this area and how to effectively deliver high-quality information and education are not well understood. The study we undertook evaluated young adults' knowledge, attitudes and practices related to savings and investments. This article presents specific data about their knowledge.

### METHOD

In June 2008, an 80-item questionnaire was distributed, via email, to young adults aged 18 to 29 from the province of Quebec in Canada. Although it is increasingly used, this method cannot guarantee representativeness among the targeted population. The process has resulted in a sample of 966 respondents, of which 67.5% are female. The mean age of the subjects is 24.3 (S.D. = 3.1). The group is composed of 21% full-time students and 52.7% full-time workers, while 12% report to be both in different proportions. Others report, for instance, to be on maternity leave or looking for work. The mean personal annual gross income is CAD\$22 700 (S.D. = 16 827).

The scale for knowledge about savings and investments is composed of nine basic questions. Examples are: "Savings include money you put aside to pay bills and debts"; "An investment with an interest rate of 5% is more lucrative with compound interest than simple interest." Respondents could answer "true," "false" or "I don't know." Determinants of young adults' knowledge and their relative importance have been identified by running an OLS regression analysis (SPSS 11.5).

### RESULTS

The mean knowledge score for the entire sample is 4.7 out of 9 (S.D. = 2.2), or 52.2%. The mean score for people who have money aside is 5.1 out of 9 (S.D. = 2.1), or 56.7%; and 4.1 out of 9 (S.D. = 2.1), or 45.5%, for those who do not. Table 1 shows that men who have more education and higher income, who have taken a personal finance course outside of high school, who demonstrate a more positive attitude towards saving, who have met with a personal finance professional, and who were born in Canada are more likely to obtain a higher score in knowledge about savings

and investments.

Table 1. Determinants of knowledge about savings (n=786)

Independent variables	Coefficients	
	Unstandardized beta (Standard error of the coefficients)	Standardized beta
Constant	-1.452 (0.894)	
Age	-0.022 (0.025)	-0.032
Gender (Reference: male)	0.833*** (0.147)	0.184
Education	0.209*** (0.033)	0.215
Personal annual gross income	0.0000129** (0.000004)	0.101
Country of birth (Reference: Canada)	0.461* (0.216)	0.068
Live-in couple (with or without children) (Reference: yes)	0.108 (0.147)	0.025
Have money put aside (Reference: yes)	0.112 (0.154)	0.026
Attitude towards savings	0.064*** (0.014)	0.160
Have taken a personal finance course in high school (Reference: yes)	0.166 (0.141)	0.038
Have taken a personal finance course elsewhere (Reference: yes)	1.033*** (0.169)	0.198
Parents have encouraged children to put money aside	-0.068 (0.071)	-0.039
Parents have been good savings models	-0.018 (0.064)	-0.011
Have met at least once with a personal finance professional (Reference: yes)	0.519*** (0.148)	0.121

\* $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$  Adjusted  $R^2=0.256$ ,  $F(13, 785)=21.820^{***}$ , Standard error of the estimate = 1.85

## DISCUSSION

To echo other researchers, we deplore young people's lack of knowledge about savings and investments. Although they are very active consumers who use credit at a relatively high rate, young adults are rather ignorant of financial matters (e.g., Hogart et al., 2003; Lachance et al., 2006). This could affect their ability to make the best financial decisions and to benefit from the future potential of savings and investments. They do not possess the basic knowledge to understand how savings and investments function and, a fortiori, to be critical when confronted with a range of information and offers. Some of the following determinants may help find ways to improve young people's cognitive skills in this area.

The positive relationships between knowledge and income, general education and attitude towards savings and investments are similar to a prior study about the same population of Canadian young adults and credit, and they have been discussed in a previous article (Lachance et al., 2006).

A more surprising finding is that young women have a lower level of knowledge about savings than young men. While this is in line with an earlier study by Chen and Volpe (2002), such a result is rather peculiar in 2008, especially for young women with the same level of education as their male counterparts.

Although men are more confident in their knowledge about finance (Goldsmith & Goldsmith, 2006), they save less than women (Erskine et al., 2003; Hayhoe et al., 2000). This suggests that women may be less capable and/or less self-confident when it comes to managing money and choosing the best savings or investment products. Moreover, they may be vulnerable to inaccurate information and fraud. As employees, heads of households and citizens, women should acquire the financial skills necessary to boost their financial autonomy and, ultimately, to attain financial independence. Customized education programs should be developed, taking into account time limitations for women who are balancing work and family responsibilities. Short seminars could be offered at work, in their communities or online to motivate them to improve their knowledge about

savings and financial matters in general.

Although young people report that parents are their main source of personal finance information (Chen & Volpe, 2002; Lachance et al., 2006), our results do not support any relationship between parents as models or parental encouragement and their children's knowledge about savings and investments. Rather than developing knowledge, parents may simply be more effective at developing attitudes and practices, aspects of savings which are also very important.

In line with previous research (e.g., Peng et al., 2007), it is interesting to note that courses in personal finance taken in high school have no impact on the knowledge score but, if taken elsewhere, they do have a positive influence. It is possible that voluntary courses, which imply strong personal interest and motivation, are more effective. These findings also highlight the importance of relevant, timely and adapted education and information for young adult learners.

From another perspective, this situation leads us to a potential divide between citizens. On one hand, there are those who have the opportunity and can afford to take high-quality specialized courses or seminars in personal finance. On the other hand, there are those who do not have this opportunity or who cannot afford the courses. This situation underpins the need for relevant, high-quality education in high schools. Financial counselors and budget advisers from consumer organizations should play a more dynamic role in educating young adults. For working people, customized savings and investment information may be more convenient when it is available outside of high schools.

Being born in Canada contributes to greater knowledge about savings and investments than being born elsewhere. Immigrants need time to adapt to their new financial environment, to understand how it functions and to adapt to its economic methods and tools (e.g., Johnson, 1999). We presume that this is the case for our respondents. Because it could make a difference, in a future study, subjects should be asked how many years they have resided in Canada.

The adjusted R<sup>2</sup> (Table 1) suggests that knowledge about savings and investments can be influenced by other variables. It may be affected by discussions with relatives or by psychological

factors such as the desire for immediate gratification. The present goal is to identify factors that would help develop strategies for improving financial literacy among young people. As the financial market evolves, consumers' financial decisions are becoming increasingly complex. It is crucial that they begin their independent financial lives with confidence and with an ability to build their knowledge over time, in accordance with their life objectives.

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## A STUDY ON THE MEAT AND VEGETARIANISM BELIEFS AMONG SWAZIS

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### ABSTRACT

Inappropriate diet is increasingly accepted as a cause of ill-health and morbidity. All recent information stresses the desirability of reduced consumption of animal products and increased intake of fiber-rich carbohydrates, fresh fruit and vegetables. With all these arguments the main purpose of the study was to get some knowledge on the meat and vegetarianism beliefs from Swazi's that eventually lead to the reasons for the different dietary practices. A case study conducted on students of Ngwane Teacher's Training College found that 7.5% respondents identified themselves as vegetarian and 6.6% as semi-vegetarian. The majority of the sample agreed that the aroma stimulates the sense of smell, and it enhances the meal (mean 4.76) and a majority disagreed that eating meat is no different from cannibalism (mean 2.34). The consumption of meat among Swazi's is higher than that of vegetables

*Keywords: Meat, Vegetarianism, Beliefs, Swazis*

### INTRODUCTION

Meat is defined as those animal tissues which are suitable as food. All processed or manufactured products which might be prepared from these tissues are in this definition (Potter, 2000). In Swaziland, meat has been an intricate part of their diet and a part of traditional meals for centuries in ceremonies such as weddings, funerals and thanksgiving (Hildreth, 2005). Meat plays a significant role in the diet. Generally, it is one of the best sources of high nutritional proteins essential for life and optimum physiological performance (Levie, 1979). In contrast they are the major source of fat. Not all meat has the same fat content. Poultry eaten without the skin is relatively low in fat. In the developed world, the types of meat consumed have altered significantly in the last twenty years, with falls in beef and veal

balanced by rapid increases in chicken, turkey, ready meals and frozen convenience products (Lea et al, 2002).

Vegetarians on the other hand differ according to the beliefs or needs of individuals following these food patterns. Generally, there are three basic types described by Fretz (2005) as follows:

Lacto-ovo vegetarians- follow a food pattern that allows dairy products and eggs besides plant products. Some may even accept fish and occasionally poultry.

Lacto-vegetarians - accept only dairy products from animal sources to compliment their basic diet.

Vegans- follow a strict vegetarian diet. Their food pattern is composed entirely of plant foods.

In Swaziland, many people are vegetarians because of their religious beliefs. Others are vegetarians because they believe a vegetarian diet is good for health. The cultural attitudes and beliefs towards meat and vegetarianism lead into recent changes in attitudes and then into the reasons for vegetarianism and semi vegetarianism (Bureau of Labour Statistics 2001). According to Lea and Worsely (2002), significantly more vegetarians agreed 'meat is unhealthy' as it causes heart disease, various cancers, fattening, in comparison to semi-vegetarians and non-vegetarians. Some diseases like breast cancer, diabetes, heart disease, obesity, kidney disease, stroke and ulcers that can be prevented, improved, or even cured by observing a diet free from animal products. (Lindeman et al, 2001).

It is of great concern that how vegetarians get required proteins? For instance, Melanie (2006), revealed that the amount of protein needed daily is easily consumed by vegetables and grain products. The American Dietetic Association, 2005 have shown that it is possible to obtain all of the necessary nutrients from a vegetarian diet. Vegetarian diets can provide adequate amounts of essential amino acids, iron, vitamin B12, calcium vitamin D and zinc at all stages of the life cycle, but must be well planned. They should include sufficient quantities of fruits and vegetables, legumes, nuts, seeds and grains. Poorly planned vegetarian diets may entail the risk of not meeting the needs for some nutrients,

particularly iron, zinc and vitamin B12 (Krebs, 2001).

Reasons for being a vegetarian or non-Vegetarian

**Vegetarianism is becoming increasingly popular. Vegetarianism may be adopted for a number of reasons:**

#### **Ethics:**

All religions have their beliefs, a set of rituals shared by all the faithful followers, and some rules, or principles, which sometimes apply even to the sphere of nutrition. Some precepts are authentic prohibitions regarding the consumption of certain products, others are strict prescriptions or indications that the faithful follower must follow in order to avoid going against what is written in the sacred texts (Yasmin. H, 2007).

#### **Health Aspects**

Some diseases that can be prevented, improved, or even cured by observing a diet free from animal products are: breast / colon cancer, diabetes, heart disease, obesity, kidney disease, stroke and ulcers. There is also an increased risk of breast cancer for women who eat meat – their risk is three times higher than vegetarian women. Also, the amount of chemicals and pesticides found in the breast milk of a woman who eats meat is significantly higher than the breast milk of a vegetarian. (Lea et al, 2002)

#### **Food Safety**

One issue that many people never consider about becoming a vegetarian is that of food safety. Magagula (2000) revealed in her study that 1 out of every 3 chickens is infected with salmonella. It is reported that if one little part of that chicken is not cooked well, the person eating it will get very ill (Ridgewell, 1996).

#### **Aesthetic**

Meat has an eye appeal, its aroma stimulates the sense of smell, and it generally enhances the meal, makes for satiety, staves of hunger. However, the mere sight or smell and taste of meat are repulsive to some people. (Pollard et al, 2001).

#### **Economy**

A vegetarian diet may be adopted because meat is expensive. Differences in retail price between

beef and poultry may explain some of the decline in the consumption of red meat. For example, per pound prices of retail beef and poultry have remained at an average of \$3.70 and \$1.50, respectively (Bureau of Labour Statistics, 2001).

#### **Family**

Children may be born of non-vegetarian parents and an adult may change to a vegetarian diet as a result of marriage.

#### **Cultural Influences**

A cultural group provides guidelines regarding acceptable foods, food combinations, eating patterns, and eating behaviors. Compliance with these guidelines creates a sense of identity and belonging for the individual. For example, pap and tripe are considered a typical traditional meal. Vegetarians in the Swaziland, however, eat relishes and stews made from pulses and vegetables, sometimes soy (Lindman et al, 2001).

#### **Problems encountered by vegetarians**

**Scarcity-** food particularly for vegetarians is available in small and inadequate amounts.

**Cost-** vegetarian diets are expensive in the sense that there has to be a variety in the preparation of the food. Eating one and the same kind of vegetable would mean a repetitive diet.

**Nutrition-** without proper knowledge on balanced diets, amateur vegetarians may not be able to prepare food that is well balanced and that leads to a poor supply of nutrients.

**Seasonality-** fruits and vegetables are dependent on a particular season meaning that their availability is determined by the time of the year. This means they will be unavailable at certain times of the year (Whitney 2007).

With all these arguments the main purpose of the study was to get some knowledge on the meat and vegetarianism beliefs from Swazis that eventually lead to the reasons for the different dietary practices. Thus the objectives of study were: To determine the level of consumption of meat and vegetables by Swazis; to find out people's perceptions on meat and vegetarianism

## MATERIALS AND METHODS

This study is a descriptive research. The study was done on students from Ngwane Teachers' Training College in Nhlngano, Swaziland. In total there were 161 students. The snowball sampling procedure was used to select the vegetarian sample (7 vegetarians and 8 semi-vegetarians). Random sampling was used to select the non-vegetarian sample (98 non-vegetarians). The Statistical Package for Social Sciences (SPSS version 10) was used to compute data.

## RESULTS AND DISCUSSION

Among the non-vegetarians (N=91), 51.6% were females and 48.4% were males. The trend for females to dominate was also seen among semi-vegetarians (N=7), (57.1%) and in vegetarians (N=8), (75%). This data concurs to findings by Jabs *et al* (1998) that vegetarians tend to be female. Among non-vegetarians, 41.5% were aged 31-45 years. Among vegetarians, most respondents (62.5%) were aged between 26-30 years and the majorities (57.1%) of semi-vegetarians were between 20-25 years of age. Among the groups, non-vegetarians are regularly dispersed in all the residential areas with most of them (41.8%) coming from semi-urban areas, followed by those who come from urban areas with 33% and lastly individuals who come from the rural areas (25.3%). Amongst vegetarians, 62.5% reside in urban areas, 25% in semi-urban areas and only 12.5% in the rural areas and with semi-vegetarian, respondents who reside in the semi-urban areas are 42.9% compared to rural and urban areas who had 28.6% residents each.

### General beliefs about meat

The highest ranked item was the aroma stimulates the sense of smell and it enhances the meal. The mean score for this item was 4.76, compared to 4.52, 4.35, and 4.32 for the items: meat is expensive; meat plays a significant role in the diet and meat is more a food that man is likely to eat respectively. The items: meat production is cruel to animals; meat is unhealthy and eating meat is no different from cannibalism were rated low with mean ratings of 3.21, 2.77, and 2.34

respectively.

### General beliefs about a vegetarian diet

Fruit and vegetable intake reduces the risk of coronary artery diseases was rated high by respondents. Its mean score was 5.01, compared to 4.65 and 4.53 mean ratings for the items: a vegetarian diet is good for health and reduces the risk of cancer and protects the heart which ranked number two and three respectively. The other items which were rated low by respondents were: helps animal welfare rights (mean 3.10), a vegetarian diet is protein deficient (3.01) and vegetarians are weak skinny and anemic (2.23).

### Important reasons for being a vegetarian /semi-vegetarian and non-vegetarian

The Table 1 shows the reasons for being a vegetarian/ semi vegetarian. Items were ranked in downward order of importance by respondents showed that health and dietary reasons was rated high by respondents with 80%. Responses that were ranked low included a vegetarian diet is less expensive (40%) and meat is expensive (46.7%). Information in Table 2 showed that being raised in a non-vegetarian family was ranked the highest as a reason for being non-vegetarian compared to my family eats meat, man is non-vegetarian by nature and there is a limited choice in a vegetarian diet which also ranked near high with 87.9%, 79.1%, and 75.8% respectively. These reasons align with the study done in America (James *et al*, 2001).

## CONCLUSIONS

Results from the research show conclusively that vegetarianism in Swaziland is represented by a small section of the community though they are a useful part of a well-balanced and nutrient rich diet. The results indicate that diets of Swazi people are comprised of meat on a daily basis.

The most important reasons for the dietary choices were: being non-vegetarian because of being raised in a non-vegetarian family.

**Table 1: The most important reasons for being a vegetarian /semi-vegetarian**

Rank	Category	n	f	Percent-%
1	Health and dietary reasons	15	12	80.0
2	Religion.	15	11	73.3
3	Meat intolerance and allergies	15	10	66.7
4	Family	15	8	53.3
5	Meat is expensive	15	7	46.7
6	Vegetarian diet is less expensive	15	6	40.0

Key: n= number of respondents; f= frequencies

**Table2: The most important reasons for being non-vegetarian**

Rank	Category	n	f	Percent-%
1	I was raised in a non- vegetarian family	91	86	94.5
2	My family eats meat	91	80	87.9
3	Man is non-vegetarian by nature.	91	72	79.1
4	There is a limited choice in a vegetarian diet.	91	69	75.8
5	It is an inconvenience to follow a vegetarian diet	91	59	64.8
6	I would miss eating meat	91	56	61.5
7	Animals were created to be eaten.	91	26	28.6
8	I don't like vegetables.	91	19	20.9
9	My friends eat meat.	91	17	18.7

Key: n=number of respondents; f= frequency

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# Mother Tongue Literacy as a Tool for Promoting Economic Justice among Women in Marginalized Societies: A Focus on Sabaot Women in Mt. Elgon District, Western Kenya

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## ABSTRACT

The paper explores how the Sabaot women in Mt. Elgon District, Western Province of Kenya, perceive the effect of mother-tongue literacy that is facilitated by the organization, Bible Translation and Literacy (BTL), Kenya, upon their economic livelihood. The study was qualitative in nature. Data from face to face semi-structured interviews, video-taking, field observations and literary reviews were triangulated to determine the link between literacy, be it in ones indigenous language or a foreign one and the economic empowerment in the livelihoods of marginalized women. The economic impact among Sabaot women was discussed in relation to mother tongue literacy. Female literacy positively affects the livelihoods of women, specifically their economic well being. The findings also revealed that there is a link between spirituality and economic well being. Implications are also drawn for the literary organizations in Kenya in relation to mother tongue literacy and economic empowerment of women.

*Key words: poverty, economic justice, gender equality, empowerment, women, society, mother-tongue literacy, illiteracy.*

## INTRODUCTION

In modern times, literacy is used as a yardstick by which personal and national development is measured (Mulira, 1975). Currently, organizations such as Bible Translation and Literacy, (BTL) are involved in development of literacy among the marginalized societies in Kenya in an effort to improve individual and societal lives in a holistic manner. BTL is focused on language development and the provision of functional literacy programs

within the Sabaot community of Western Kenya. These groups of people are isolated with harsh climatic conditions and rough terrain and have remained underdeveloped since the colonial era.

The Sabaot people number over 300,000. They live on the slopes of Mount Elgon in Western Kenya. While other areas in Kenya have benefited from mission schools and the development projects of non-governmental organizations, this area has often gone without, due to its isolation and treacherous roads. Nevertheless, the children's literacy pilot project began in five schools in Mount Elgon District in February 1998. Teachers from the pilot schools have been given literacy training and have assisted with material development (BTL, 2005).

Women generally play a vital role in society. They are the pillars of their households and their families depend on them for food and for maintaining a healthy environment (Barngetuny, 1999). The family as the basic unit must be preserved and nurtured and, the burden to do this often falls upon the women. Since the women play an important role in bringing up their children, it implies that they have been given the task of developing citizens for the future nation. (Kabaji, 1997).The economic impact of BTL's literacy project on the female community of Mt. Elgon District is therefore important to review along with its effect and implications on gender equity and economic justice in indigenous Kenyan settings.

## METHODS

The study essentially employed a descriptive qualitative approach. The study took place in the natural setting and used multiple methods that were interactive and humanistic. The setting of the study was, Mount Elgon District, Western Kenya, Sabaot community. The methods of inquiry were varied depending on the cultural norms that were found among the Sabaot community.

Permission was sought and granted from the director of BTL Kenya at their headquarters in Nairobi, Kenya to enable the researcher to gain entry into the study area. A letter of introduction from Nairobi Evangelical Graduate School of Theology, the research institution, was used for this purpose.

The target population constituted of Sabao women who have come into contact with the BTL literacy program, and, were purposefully selected and interviewed. In an effort to gather data from a variety of stakeholders, female learners currently in the BTL adult literacy school, those influenced by BTL literacy teachers' training, and female villagers influenced by the BTL mother tongue literacy program were included in the selection.

Three types of data collection procedures which included interviews based on an interview schedule, observations, and audio visual material were utilized. The process of data analysis involved making sense out of written and visual data. This included preparing the data for analysis, conducting different analyses, moving deeper and deeper into understanding the data, and making an interpretation of the larger meaning of the data (Creswell, 2003). An analysis of the data for themes or issues then followed (Creswell, 2003). Bearing in mind the specific ways of interpreting data in a case study, some generic steps for qualitative research that included data organization, reading through the data, creating categories, themes and patterns (coding), analyzing and interpreting the information and finally, writing the report were utilized.

## RESULTS

### Demographic Information

Most participants had gone through primary school, three were able to go to secondary school, one completed her college education while two others had just gone back to school for a diploma certificate. Of the six participants, only one dropped out of school after primary school and only one never went to school. Not many women reach tertiary levels of education in their lives because of lack of space in secondary schools, lack of secondary and tertiary schools in the district, lack of finances for education, and cultural biases.

Although some participants were not literate in the sense of reading and writing in English or Swahili, they were educated in the culture of their community. Therefore, women in indigenous communities can economically impact their societies when they understand the economic culture and traditions of their people. Whether or not a woman is formally trained, they can still

impact their community since empowerment implies a state of mind and the attitude of a person.

### *Economic Impact*

#### Economic Dependency Ratio

A common phenomenon with the women that were interviewed was that the more literate or educated they were, the more dependents they had to cater for. Many of the women need help from their spouses to be able to meet the financial demands of the home. Otherwise the home would be economically fragmented once the wife or the female person in the family who earns an income loses her source of livelihood.

#### Farming as an Economic Activity

A number of women innovated financial activities that helped them to sustain their families. Those who did not have the opportunity to go through formal education faced limitations including not being able to fit in white-collar jobs. Some of the women learnt to farm through educative opportunities from mother tongue oral traditions and customs. Since Mount Elgon District is a fertile area, farming is a favorable economic venture for most women to pursue because it yields good returns for them.

#### Impact of Literacy on the Economic Atmosphere in the Homes

The literacy levels of the women often gave an indication of the kind of economic atmosphere that their homes had. The homes that had literate women in the household had an air of liberation and hope. There was some fertile indication of economic well-being either from domestic animals running around the homestead, well-tilled gardens or even tidy homes. On the other hand, the economic situation of those that were not formally educated also revealed itself in the atmosphere of the home.

#### Merry-Go- Round (Revolving Loan Fund)

Many of the women participated in "Merry-go-round's" other-wise known as "Revolving Loan Fund", to help them meet their financial obligations. The Revolving Loan Funds included one established by the government of Kenya, commonly called, Maendeleo Ya Wanawake (Women's Development). When women grouped themselves to help one another, they were able to go an extra financial mile in helping

themselves, their families and community.

## CONCLUSION

Literacy is a way of building an indigenous community especially if emphasis is placed on mother-tongue literacy as the premise for all literacy. Consequently, such education would lead to social and individual change, equality of opportunity and global understanding. Furthermore, mother-tongue literacy can become a means of acquiring the understanding and ability necessary to improve living and working conditions in people groups that mostly speak an indigenous language instead of forcing them to learn in a different language, then relegating them to disseminate this knowledge into their situations which often takes time. Justice demands that the problem of illiteracy in indigenous parts of Kenya be attacked in a world that possesses all the means and resources to do so, especially if it means changing tactics by contextualizing the literacy. Mother- tongue

literacy is therefore a powerful tool of economic empowerment in indigenous communities as those who never got the opportunity to go to formal training until tertiary levels, can still enjoy the enlightenment of being educated.

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**EXPECTATIONS OF POTENTIAL USERS  
REGARDING A PAKISTANI DIET ANALYSIS  
SOFTWARE**

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**ABSTRACT**

The purpose of this study was to identify the need for a food analysis software that will aid the professionals in their work. The study also aimed to assess the needs, and expectations of the people (dietitians, researchers, teachers and students) regarding the food analysis software.

The study was conducted in Karachi. The subjects were Dietitians, Researchers, Teachers and Students. The data was collected through interviews conducted with the help of a questionnaire.

The results showed that a very small percentage of respondents use software for Diet Analysis but all the respondents (100%) considered the need of Pakistani Diet Analysis Software. The respondents wanted it to be user friendly and preferred the software to work using both food composition tables (FCT) and food exchange list. They prefer to see comprehensive results that include values for calories, fuel nutrients, vitamins and minerals.

It can be concluded from the responses that Pakistani Diet Analysis Software is a much needed tool for the Dietitians, Students, Teachers and Researchers

**Key words:** Software, Diet analysis.

**INTRODUCTION**

Diet has been recognized as a primary determinant of health and disease at all ages as dietary analysis alongside other factors indicates the health status. (Johnson,2003) Now there are so many techniques for this, computerized analysis by the help of food analysis software being one of these methods. Many advanced software with extensive features are available worldwide. The use of various nutrition software have become frequent now (Miles,1994). Both commercial software and dedicated software that are created by researchers for specific purposes are available.

(Miles and Weitzman, 1996) the advantage of a Nutrition Software is that it saves time thus more time can be given to conceptual work. Experimenting with coding schemes and sharing the data with other members of a research team is made easier with the software (Miles,1994). It also facilitates file management. Moreover, data displayed in different desirable ways and forms can be achieved by the virtue of a good and intellectually designed nutrition software (Shepherd,2003). However, with such a great variety available, choosing Nutrition Software becomes a problem. The database in a software must be complete in terms of nutrients and foods.(Buzzard & Warren,1991) easy to use, up to date(Williams,1993).

These software are beneficial in a lot of areas. Like for dietitians, use of computer software in their tasks has been proved to be fruitful in making them more productive and visible in their profession.(Krabeck,1985; Sharp & Ahmed,1983) Intervention of Nutrition Software in the field of health care offer great advantages and it has been proven by various research studies conducted in various regions of the world.(Yasmin & Linda,2005; Bell,1985; Danford,1981) Teachers or academic nutrition also benefit from software in educating students in nutrition, food science and health courses. The software have been proved to be a valuable tool in education and research (Vanderveen & Groves, 1986). It helps the researchers getting the work done in much easier way. Students may also benefit from them in their tasks of Diet analysis.

Unfortunately there is no such software which is designed for use in Pakistan. This evolves a need to develop Pakistani Diet Analysis Software. So the purpose of my study is to identify the need of Pakistani Diet Analysis Software and people's expectations about such a product.

**METHODS**

The study was conducted in Karachi. Data was collected from the Dietitians (working and non-working but with previous experience), Students (studying Food and Nutrition, Teachers (teaching Food and Nutrition subjects), and Researchers (whose research work involved Diet Analysis) considering them as potential users of Diet



**Analysis Software.** The total sample size consisted of 107 subjects including 41 Dieticians, 47 Students, 11 Researchers and 8 Teachers. The data was collected through a specially designed Pretested Questionnaire. The subjects were approached at their workplaces for data collection. Data regarding the nature of Diet Analysis in their work, need of a Pakistani Diet Analysis Software, and preference in various factors about the software like language, form of results, working, features and price was collected through the questionnaire.

The data collected was then coded entered in SPSS (Statistical Package for Social Science) version 12.0. The data was then analyzed and the results were interpreted using simple percentage and frequency method.

## RESULTS

The results revealed the various demands and expectations of the different people regarding the Pakistani Diet Analysis Software. Most of the respondents (81.3%) never used any Food Analysis Software, however a small percentage of them used it (18.7) . Percentage of use of Software among respondents is given in Table 1.

Those respondents who used software used it usually when they had lesser workload but found it very helpful in their work. All of the respondents (100%) considered that there is a need to develop a Pakistani Diet Analysis Software for use in Pakistan. Figure 1 illustrates the preferences of the respondents regarding the working of software.

Most of the respondents (65.4%) preferred English for the language of the Software. A great majority of respondents (86%) prioritized to see a detailed

display of results including calories, fuel nutrients, vitamins and minerals.

Percentages of preferred features among the respondents is given in Table 2. The respondents were greatly willing (80.4%) to buy the software themselves, partially willing (59.8%) to buy the software for their institutions. The feasible price range according to most of the respondents was 1000-2000 Pakistani Rupees (PKR).

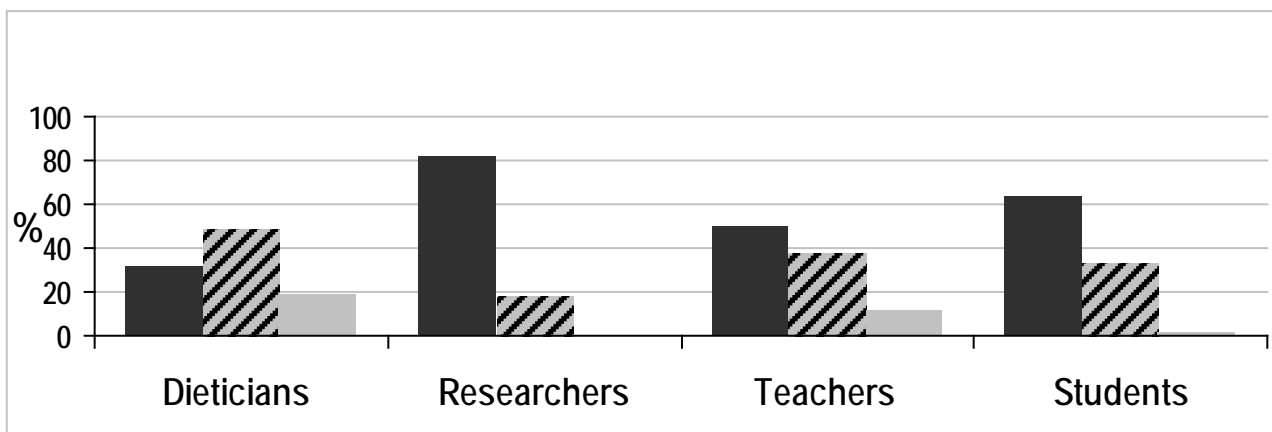
SUGGESTIONS LIKE USER FRIENDLINESS, ACCURACY AND PRECISION, EASY AND COMPLETE RECORD OF ALL FOODS AND RECIPES ACCORDING TO PAKISTAN WERE ALSO GIVEN BY THE RESPONDENTS.

## DISCUSSION

The major purpose of this study was to identify the need of a Pakistani diet analysis software and people's expectations regarding that. In the field of nutrition people are now climbing the ladders of modernization and are looking for techniques of work simplification. This is seen from the interpretation of the data collected indicates that there's a great need for a Pakistani Diet Analysis Software. All the Dieticians, Researchers, Students and Teachers are interested in such a product, however not much of them have used them previously.

The respondents expect the working of the software through both FCT and Food Exchange Lists and give a detailed display of result including all the major and minor nutrients. Further studies exploring the expectations of the people of other cities will further widen the horizon. More work needs to be done in this area and a user-friendly and economic software with accurate information and all the features preferred by the respondents

Figure 1. Subjects preferences about preferred mode of working of software



must be made available soon so that more and more people and professionals may benefit from it and improve their performance in their respective tasks. The information gathered by this

study will help and facilitate in designing any such product in the future.

**Table 1. Percentage of respondents whoever used Food Analysis Software**

Use of software in work	Dieticians n=41		Researchers n=11		Teachers n=8		Students n=47		Total n=107	
	n	%	n	%	n	%	n	%	n	%
<b>Yes</b>	5	12	6	54	1	87	8	17	20	18
<b>No</b>	36	87	5	45	7	12	39	83	87	81

**Table 2. Percentages of most preferred particulars to be included in the software.**

Features Preferred in the Software	Dieticians n=41		Researchers n=11		Teachers n=8		Students n=47		Total n=107	
	n	%	n	%	n	%	n	%	n	%
<b>In terms of Analysis</b>										
Adequacy of Food group's intake	19	46	6	55	5	63	18	38	48	45
Adequacy of nutrients intake	24	59	9	82	6	75	29	62	68	64
Adequacy of nutrients intake	6	15	7	64	2	25	6	13	21	20
<b>In terms of diet planning</b>										
Focusing energy nutrient needs	19	46	3	27	3	38	20	43	45	43
Focusing food Preferences	16	39	1	9	1	13	3	6	21	20
Focusing clinical conditions	27	66	7	64	5	63	27	57	66	63
Focusing cost level	18	44	2	18	1	13	7	15	28	26
<b>In terms of estimation</b>										
Health status of subjects	16	39	5	46	4	50	11	23	36	34
Weight status of subjects	17	42	3	27	2	25	5	11	27	25
Nutritional deficiency for clinical signs	19	46	3	27	1	13	11	23	34	32
Nutritional deficiency for food intake	18	44	5	46	3	38	26	55	52	49

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## Views of teenage girls regarding readymade garments available in the market.

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### ABSTRACT

The result obtained showed that majority of the respondents were not fully satisfied with the fitting, fabric, color and stitching of readymade garments. Some of the common complaints emerging through the study were that the fabric used in ready-made garments generally produced pilling after a some washing, used uneven or loose stitching, and displayed poor choice of color combinations. Insofar as the selection criteria for readymade garments was concerned, the results showed that majority of the respondents considered their personality, design and style as well as physical appearance of the garment while selecting and buying readymade garments.

### INTRODUCTION

Readymade garments are outfits created by designers and manufactured for sales. These are made in standard shapes and sizes to suit the many types of persons. Before cutting clothes, patterns are made. Locally, readymade garments are available in large, medium and small sizes. The use of readymade garments is getting more and more popular. The need of stylish outfits makes the customers go to the market.(pubcd1, 2008) . Pakistan produces readymade garments of all patterns and styles of the latest fashion and quality.(Ahmed, M.N, 2008) . Teenage is the most crucial and self conscious age, it is the transitional stage of adulthood. Teenagers are more concerned about what they want and what they are wearing and buying . According to a study [Punke, Harold H. , 1943], the buying practices of teenagers are similar, irrespective of the family's income or location. Teenagers usually like their clothing and consider themselves as well dressed as their friends. The clothing of teenagers is, on the whole, purchased readymade. Teenagers are more concerned about the fashion aspect of a garment than its durability or quality. Teenagers prefer readymade garments due to the advantage

that they can see how a garment looks on them before investing any money. (Tate,M,T 1967) The present research is unique in that it focuses on understanding teenagers' preferences related to garments' satisfactory fit, fabric, color and stitching. The process of assessing fit appears to be straightforward but consumers list it as one of their major dissatisfaction. This research will generate interest among retailers and manufacturers as well as consumers.

### METHODOLOGY

The study was based on a survey, in which questionnaires were used as a research tool. The purpose of the study was to find out the views of teenage girls with regards to fit, fabric, colors and stitching as well as common complaints about readymade garments available in different markets of Karachi Information was collected from XI and XII Grade students of Rana Liaquat Ali Khan Government College of Home Economics, Stadium Road, Karachi. The sample consisted of 100 subjects. A questionnaire was used to collect the data. A pilot study was done before starting the final data collection to sort out any mistake in the questionnaire and also to improve its quality. A sample of 6 students was taken for pre-testing. Completed questionnaires were checked to make sure that the information had been filled in accurately. Data Entry and analysis was done with Epidata version3.1 and Statistical Package for Social Science [SPSS version 11.5] respectively. The data was then transferred to Microsoft Word.

### RESULT

Majority of the respondents (79%) were only sometimes satisfied with readymade garments. (figure 1). One third of the respondents (33%) have complaints about poor fitting, whereas other respondents (30%) complained that they need alteration, while some of the respondents complained about improper size and a few (9%) complained about poor stitching. more than half of the respondents (62%) said that the fitting problem is related to both tightness and looseness of garment, while others (30%) said that the problem is related to the looseness of garment, and a few respondents (4%) said that the problem is related to the tightness of garment. Details of problems regarding fitting are given in table 1.

Only 10% of respondents were completely satisfied with the fabric of readymade garments. Reasons for dissatisfaction with fabric were poor pilling (39%) poor quality (24%) and lack of comfort (22%).

Only 23% of respondents were satisfied with the colors of readymade garments. Reasons for dissatisfaction with colors were 'color combination not according to taste' (43%) 'available colors did not suit their personality. (20%) said that

More than half of the respondents (56%) were not always satisfied with stitching. Reasons for dissatisfaction with stitching were uneven or loose stitching (37%) poor quality thread (22%), accessories not properly stitched (16%) and seams not finished properly (11%). Main factor considered by respondents while buying clothes was personality (43%) fashion. (39%) budget (16%) and peer group's opinion (2%) .

Table 1. Percentage of subjects reporting problems with fitting of readymade garments

Areas	Too tight %	Too loose %
at armhole	23%	25%
at bust	17%	17%
at waist	12%	30%
at hip	5%	5%
Any other	10%	16%
<b>Total</b>	<b>67%</b>	<b>93%</b>

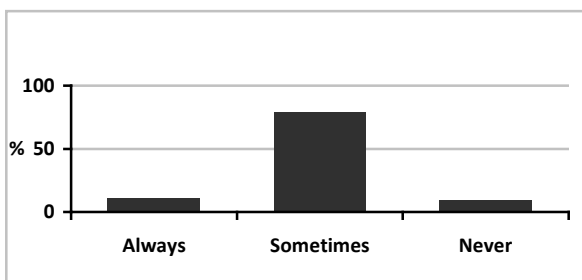


Figure 1. Satisfaction regarding readymade garments

## DISCUSSION

The research study shows that many of the respondents were not fully satisfied with readymade garments. As regards fitting, the

common complaint was about the looseness of the garment at waist and armhole and the improper size of the garment. Majority of the respondents were not satisfied with the fabric used in readymade garments. According to the respondents the fabric produced pilling after some washing. There was another complaint about the color combination of readymade garments that was usually not according to their taste. Answers regarding the stitching quality of readymade garments show that many of the teenagers were not satisfied with it due to the uneven or loose stitching and loose hooks and buttons. It was observed that the selection criteria of the teenage girls was that they considered their personality more than fashion. Secondly they preferred design and style rather than comfort and most of the respondents bought readymade garments after checking its physical appearance in order to get a quality garment.

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## Identification of Problems, Encountered By Researchers in Using the Existing Food Composition Table and Development of New Food Composition Table.

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### ABSTRACT

The purpose of the research study was to identify the problems faced by researchers in using existing Food Composition Table and their expectations from an upcoming Food Composition Table of Pakistan. The research was conducted through a sample of 25 researchers of different Professions and Organizations. The results revealed that researchers facing major problems while using current Food Composition Table of Pakistan and they expected that upcoming Food Composition Table of Pakistan will be authentic, completed and as proper as Food Composition Table of Developed Countries.

Keywords: Food, Researcher, Epidemiologist

### INTRODUCTION

Availability of food composition is crucial both for public health and for nutritional care of patients. (Holden, M.J., Bhagwat, A.S. and Patterson, Y.K. 2002) Development of food composition data requires assessment of needs (Seven, H.G., (1994) Food Composition tables are used in "epidemiological research disease patterns, governments regulations and enforcement; but most importantly, health assessment of individuals, populations national and international trade in foods". (More, P., Wood, E.A., 1986). Food compositor tables should be able to fulfill the needs of the users. There is need to update and enhance Pakistani Food Composition Table. The current study was planned with the terms of reference being the determination of views of researchers about the currently Food Composition Table and their expectations in relation to the upcoming Food Composition Table.

### METHODOLOGY

In this study a list of raw and cooked cereal food items (which has to be included in upcoming Food Composition Table) were identified and compiled from USDA and INDIAN Food Composition Tables, with their reference codes and all compiled data fed on Microsoft Excel. The study was conducted through 25 research-workers from different Organizations for example (Aga Khan University, Baqai, National Institute Of Cardio-Vascular Diseases, Ra'ana Liaquat Ali Khan Govt. College Of Home-Economics, University Of California etc) and Professions for example (Dietitians, Dental Surgeons, Epidemiologist, Food Technologist, Professors, Students etc).The data collected through Questionnaire specially designed for this research study and analysis of data is carried through Software SPSS 11.0 Version.

### RESULTS

According to the results respondents (researchers) most frequently referred USDA NDB (96%) followed by PAK FCT (72%) on daily, weekly, monthly and yearly basis.

Most of the respondents (52%) viewed that current Food Composition Table contains commonly consumed dishes. Most of them (68%) also viewed that nutritive value not reported according to portion size. Nutritive value of infants foods is not present viewed by (52%) respondents. Some of the (48%) also viewed that it has inaccurate nutritive values and more raw foods are given than cooked. Only (8%) respondents preferred PAK FCT in aspects of easily understand, use and market availability. Other (8%) preferred PAK FCT as it contains more number of nutrients and presents authentic data.

Overall most of the respondents viewed that existing Food Composition Table of Pakistan is available with so, many shortcomings.

The respondents also viewed their expectations from an upcoming Food Composition Table as (44%) respondents expected that it will available with scientific names and with Urdu names viewed by (17%) Majority of the respondents (88%) viewed their expectations that upcoming Food Composition Table will available with online access and (72%) expected that nutritive values will be accurate with inclusion of ethnic and regional dishes. (15%) respondents expected that

in upcoming PAK FCT nutritive values will available in portion sizes and average serving.

Expectations about specifications of forms of food items as chopped, blanched and roasted, expected by(76%).(60%)respondents expected that upcoming Pakistani Food Composition Table will available in hard copy form .

(44%)respondents expected that upcoming Pakistani Food Composition Table contains the calculation of fatty acid content of food and other(28%)expected that calculation of amino acid content of food in food will also available in upcoming Pakistani Food Composition Table.

They are of views that nutrients to be included in upcoming Food Composition Table1. Percentages of respondents who expected that all macro-nutrients (protein, fats, carbohydrates), micro-nutrients (minerals) for example (sodium, chloride, potassium, iodine) and micro-nutrients (vitamins) for example (Vitamin K,D,A,E,B 1,B9) with these particular nutrients (oxalate(4%), phytic acid (4%), soluble and insoluble fiber (8%), should be included in upcoming Food Composition Table.

## DISCUSSION

Availability of food composition is crucial both for public health and for nutritional care of patients. (Holden, M.J., Bhagwat, A.S. and Patterson, Y.K. 2002) Development of food composition data requires assessment of needs (Seven, H.G., (1994) The research study determined the problems of research-workers while using the existing Food Composition Table in their Research work. Need to develop authentic; updated and complete Pakistani Food Composition Table is identified. The results also give idea about limitations of the research studies conducted in Pakistan and problems faced by dietitians in assessing subjects dietary intakes. Private and public support in updating food composition tables can make great contributions in food and nutrition situation in Pakistan.

Table 1. Percentage of respondents who expected about Nutrients to be included in upcoming Food Composition table.

Nutrients In Upcoming Food Composition Table	Percentages Of Respondents
Carbohydrates	100%
Fats	100%
Sodium	100%
Iron	100%
Vitamin K	100%
Protein	96%
Vitamin C	96%
Vitamin A	92%
Vitamin D	92%
Vitamin E	92%
Potassium	92%
Calcium	92%
Iodine	88%
Vitamin B 1	88%
Vitamin B 9	76%
Chloride	72%
Vitamin B 2	72%
Vitamin B 6	68%
Phosphorous	68%
Copper	64%
Biotin	56%
Lipoic acid	40%
Inositol	40%

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# GUIDELINES FOR AUTHORS

## **Philosophy, Objectives & Scope**

NURTURE is planned to be an international and trans-disciplinary research journal. Research papers and other articles from any field of physical or social sciences social having direct or indirect relevance to the betterment of individual, family or community are welcome. Nurture provides an international forum for academia for publishing their research work having implications for individual, family or community as consumers and social units. It aims at supporting the creation and accumulation of knowledge that can be used for empowering individual, family or community so that they can optimize their quality of their life. Thus the spectrum of variety of professionals who may send articles for this journal is very wide. However when any article fulfills the criteria of having implications for individual, family or community as consumers and social units it would ultimately fall within any of the following domains of Home Economics. A brief description of each area is given though a much wider variety of topics could be included in each area.

### *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;

### *Housing and Interior Designing:*

**Particular theories and issues regarding designing house and interiors constructing household furniture, furnishing and equipment;**

### *Textile and Clothing:*

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

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Authors wishing to be considered for publication in NURTURE should send a covering letter and the manuscript by email to: nurture2007@gmail.com or by post to

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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.

The cover letter should state that the submitted manuscript is original and that no part has been published, simultaneously submitted, or already accepted for publication elsewhere, other than in abstract form. Contributions of various authors and conflict of interests and funding sources if any should also be mentioned. Sender's full address and email must also be given.

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## **Manuscript Checklist**

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**Case Report: Abstract; Introduction; Case Report; Discussion and Conclusion.**

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4. Use past tense when describing and discussing the experimental work on which the paper is based.
5. Reserve present tense for reference to existing knowledge or prevailing concepts and for stating conclusions from the experimental work; use past tense for reporting results of the present study.
6. Clearly differentiate previous knowledge and new contributions.
7. Explain what an abbreviation means the first time it occurs.
8. In general, avoid anything that causes offense. Be sensitive to labels. Avoid equating people with their conditions, for example, do not say "schizophrenics," say "people diagnosed with schizophrenia."
9. Use the following styles for within text headings.

- Level A Headings are Centered and Set in Heading Caps
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#### **Pages format:**

Type the manuscript on A4 size white bond paper, 8-1/2x11 inches (21.6x27 cm) with margins of at least 1.5 inches (4 cm). Type on one side of the paper only double spacing every page. Begin each of the following section on separate page and in the following order: title page, abstract, introduction, materials / subjects / patients and methods, results, discussion, acknowledgements, references, tables and figures (each on a separate page) and legends. Number pages consecutively, beginning with the title page. Type the page number in the upper right-hand corner of each page.

Each manuscript component should begin on a new page in the following sequence:

#### **Title page**

- Abstract and Keywords
- Text

- Acknowledgments
- References

Tables: Each table on a separate page, complete with titles and footnotes  
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Figures: Figures must be good-quality, unmounted glossy prints or high-quality laser-printed copies, usually 127 by 173 mm but no larger than 203 by 254 mm. Lettering should be large enough to be readable when reduced to 1 column width (<85 mm) or, in rare cases, to 2 column widths. If color illustrations are included, a statement that the author(s) is (are) willing to bear the cost of color separation and reproduction is requested.

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Provide on a separate page a structured abstract of not more than 250 words for original article and an unstructured abstract of no more than 150 words for other submission types. The structured abstract should consist of four paragraphs, labeled Objective, Methods,

Results and Conclusion. They should briefly describe, respectively, the problem being addressed in the study, how the study was performed, the salient result and what the authors conclude from the results. The unstructured abstract is in the form of one paragraph covering these headings.

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Describe your selection of the observational or experimental subjects (patients or laboratory animals, including controls) clearly identify the age, sex and other important characteristics of the subjects. The definition and relevance of race and ethnicity are ambiguous. Authors should be particularly careful about using these categories.

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References for study design and statistical methods should be to standard works when possible rather than to articles in which designs or methods were originally reported.

Indicate whether variables were transformed for analysis. Provide details about hypothesis were tested, what statistical tests were used, and what are the outcome were. Indicate the level of significance used in test.

Reports of randomized clinical trials should present information on all major study elements including the protocol (study population, interventions or exposures, outcomes and the rationale for statistical analysis), assignment of interventions (methods of randomization, concealment of allocation to treatment groups) and the method of masking (blinding).

Authors submitting review manuscripts should include a section describing the methods used for locating, selecting, extracting and synthesizing data. These methods should also be summarized in the abstract.

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Describe statistical methods with enough detail to enable a knowledgeable reader with access to the original data to verify the reported results. When possible, quantify findings and present them with appropriate indicators of measurements error or uncertainty (such as standard deviation when mentioning mean values of quantitative variables, or confidence intervals where odds ratio is mentioned, etc.). Mention the statistical test used for analysis to obtain the P values. Discuss the eligibility of experimental subjects. Give details about randomization. Describe the method for and success of any blinding of observations. Report complications of treatment. Give numbers of observations. Report losses to observation (such as dropouts from a clinical trial). References (if necessary) for the design of the study and statistical methods should be to standard works when possible (with pages stated) rather than to papers in which the designs or methods were originally reported. Specify any general use computer programs used.

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Persons who have contributed intellectually to the paper but whose contributions do not justify authorship may be named and the function or contribution is described - for example, "scientific advisor critical review of study proposal," "data collection," or "participation clinical trial". Such persons must have given their permission to be named. Authors are responsible for obtaining written permission from person acknowledged by name, because readers may infer their endorsement the data and conclusions. Technical help should be acknowledged in a paragraph separate from those acknowledging other contributions.

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Reference Citations (In-Text)

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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.

Waheed, A., Hameed, K., Khan, A. M., Syed, J. A., & Mirza, A. I. (2006). The burden of anxiety and depression among patients with chronic rheumatologic disorders at a tertiary care hospital clinic in Karachi, Pakistan. *J Pak Med Assoc*, 56, 243-247.

Books (Group author, 3-5 authors, reprint/translation, edition other than first):

Booth, W. C., Colomb, G. G., & Williams, J. M. (1995). *The craft of research*. Chicago: University of Chicago Press.

Web page:

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

[www.chek.edu.pk/indexnurture.htm](http://www.chek.edu.pk/indexnurture.htm)



# Pakistan Home Economics Association

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

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I agree to abide by the code of ethics of the profession and the PHEA by-laws & regulations.

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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:

- President.
- Vice President

- General Secretary
- Treasurer
- 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

**Associate Members.** Anyone with a graduate degree and an interest in Home Economics.

**Privileges and rights of associate members:**

- 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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