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

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## NURTURE

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## Guidelines for Authors

# NURTURE

## Editorial

Dr. Rubina Hakeem

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We are living in an era where we are availing the benefits of numerous state of the art technologies and incredible communication facilities but still level of personal satisfaction, prospects of pleasant communal living and hopes for global peace and prosperity are diminishing. Perhaps a few of the reasons for the scenario are: a grave imbalances in delivery of the benefits of science and technology to the consumer as compared to the producer; disproportionate focus on promoting developments in areas of natural sciences as compared to social sciences, and excessive focus on augmentation of financial and material resources at the cost of jeopardizing the quality of human life.

What humanity needs today is rethinking the determinants, modulators and indicators of human development and exploring of not only economic and technical but also social and psychological mediators of human development. This would ultimately call for evidence based information and research in relevant areas that could provide guidelines for concomitant conditions required for exploiting science and technology for human development. e.g. it may emerge, that advancements in economic resources and technology might be having negative impact on human civilization by augmenting the gap between advantaged and disadvantaged. In other word we need scientific enquiries in relation to a) understanding of individuals, families and communities in today's changing world; b) exploring ways of channeling the benefits of technologies to the consumer e.g. by identifying strategies for increasing consumers understanding of relevant issues and empowering the consumer to influence producers choices for production of consumer goods. c) Understanding individual, family and community in specific regions and cultures so as to utilize both social and technical understandings and skills to bridge the gaps between the societies and develop tolerance, peace and prosperity.

The task mentioned above is colossal and unending. Home Economics Education has always been cognizant of this need and aims to contribute to the betterment of humanity through the understanding and strengthening of individuals, families and communities. Home economists have been contributing to this goal for more than hundred years. This journal is a humble contribution towards promotion of research for the purpose of human development. It also aims to disclose the trans disciplinary nature of Home Economics and to identify, develop and strengthen links between home economics and relevant natural and social sciences. The excellent response that we already have received from professionals around the globe, local Government and our colleagues from Pakistan Home Economics Association creates high hopes that together we would be able to make this journal an advocate for important role of understanding NURTURE along with NATURE in promoting human development.

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# Intellectual Showcasing: Articulating the Thinking Behind our Practice

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## Abstract

The tangible products and services provided by our profession benefit society, and involve intellectual activity, especially moral judgements. If we present ourselves to the public in such a way that people are clear about *why* we are doing what we do, then fewer misunderstandings would abound and more valued practice would result. This paper asks us to examine the merits of clearly articulating the assumptions, values, principles, ideologies, paradigms and valued ends that inform our practice. An approach for intellectual showcasing is offered that may serve as an accountability identifier for the public and us.

Keywords: systems of action, professional philosophy, practice, accountability, leadership

## Introduction

The profession must present itself to the public in such a way that society is clear about what it offers, and why (Brown & Paolucci, 1979; McGregor, 2005). Many people<sup>1</sup> in the profession believe that *if* the work of home economists can be made more visible and can be quantified, it will be more legitimate, valued, and respected. There is no doubt that this visibility is important. The profession provides a set of services that are beneficial to society as a whole. In addition to offering tangible products and services however, members of the profession also engage in intellectual activity, especially moral judgments. This paper is about the benefits to us and society if we showcase the *invisible thinking* behind the formation, delivery and evaluation of home economics practice.

It is challenging to showcase *thinking*. But, it is imperative that we try because thinking most assuredly shapes what gets done, how, and why and how this work is judged by others. Practitioners have to ask themselves, "What counts as an outcome and what criteria will we and others use to judge the merit and worth of the work?" Is an outcome taken to mean learning a new skill to cope with the status quo? Is it learning about oneself and relationships so one can change inside? Is it learning

about power relationships so society can be changed? Or, is it some combination of all three? The core message of this paper is that practitioners' thinking - their ideologies, world views (paradigms), belief systems, values, principles, and assumptions - plays a central role in determining which initiatives are undertaken, in defining what counts or is viewed as an acceptable and desired outcome of this work, and in how the public comes to view and value our practice (McGregor, Pendergast, Eghan, Seniuk & Engberg, 2007).

For example, why would practitioners choose to prepare, deliver and evaluate: (a) a "how to develop a household budget" program instead of (b) a program that helps participants investigate what money and debt mean to them, or (c) a program that facilitates the exploration of what it means to live in a consumer society (or some combination of these three approaches)? In the first instance, if practitioners believe that consumers have a key role to play in the economy, and that they fail in this role if they become indebted because they cannot manage their money, then it makes sense to give them a quick-fix so they can better manage their money and contribute to the economy. Practitioners could do a pre and post test, and show that their program *made a difference*.

If practitioners believe that it is not one's ability to manage money that is at issue, but the meaning that money has in one's life and one's relationships, then it makes sense to design a program that helps people gain an understanding of this aspect of their behavior so they do not continue to be indebted. Again, empirical evidence can be collected to prove if the program *made a difference*.

However, if practitioners are convinced that the problem is not just consumers' ability to manage money or deal with money attitudes and behavioral habits, but that the problem also concerns the way society is organized around the ideology of consumerism, then it would make sense to deliver a program that helps people explore their consumer role, and the role the family institution plays within a market society. In this case, it is much harder to get proof that this program *made a difference*, because such proof entails examining power relationships, ideologies, world views, and issues of freedom, justice,

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<sup>1</sup> The author is comfortable with framing this particular discussion in the form of general statements about the state of the field of study, informed by philosophical musings and deep professional reflections more so than empirical evidence (see McGregor et al. (2004); McGregor and MacCleave (2007); Pendergast and McGregor (2007)). The process of verification is necessary to determine whether a generalization holds true for any given situation, and this verification can stem from empirical or interpretative scholarship. The latter refers to a focus on the meanings and understandings held by people, on participant involvement in the research, and on researcher self-reflexivity. The result is trustworthy data and insights (rather than valid and reliable data, the empirical standard of rigour). Both have their place in home economics scholarship. One hope is that this call for members of the profession to showcase the intellectual underpinnings of their practice will lead to richer studies about our practice.

peace, security, inclusion, equity and diversity. These are very hard to quantify.

Furthermore, what criteria are being applied by the others as they judge whether or not a difference was made by our work? Consider the following logic. If someone judging our work believes strongly that quick fixes are the best way to solve family issues, then any initiative that provides technical information about *how to do* something would be seen to have the potential to make a difference. Someone, on the other hand, who believes strongly that consumers are victims of the violence of consumerism, would not be convinced that the former program made any difference at all. In fact, this person may judge it as maintaining the undesirable status quo.

Consider these four examples. An educator employs a critical pedagogy. A policy analyst views an issue through a critical (power relationship) lens. An extension worker designs a program in full consultation with those who will benefit from the program. A manager strives to become a transformative leader. If the person making the judgement about the merit of the outcomes of our work is a technocrat (focused on information and facts), the *efficacy* of these programs will not be an issue for them because values of *efficiency* will be applied to judge whether the programs achieved an outcome.

Conversely, different judgments about outcomes may be formed when evaluating work tendered by: (a) an educator who employs a *sage-on-the-stage*, expert pedagogy; (b) a policy analyst who assumes that competition, profits and wealth are desirable social ends; (c) an extension worker who imposes the program on the *clients*; or, (d) a manager who insists on performance appraisals, accountability measures and outcome-based evaluations to determine success. If people judging whether our initiatives made a difference base their decisions on evidence of more inclusion and fewer instances of oppression, marginalization and discrimination, they would judge our initiatives as less than successful because efficacy and self-autonomy would be their guiding criteria.

The power of clarifying the thinking behind our intentions is further illustrated in these three examples. By explicitly stating that the intent of writing a cookbook is to provide information to families about how to cope with declining incomes, the practitioner is less likely to raise the ire of others in the profession who see cookbooks as the bane of the profession. By explicitly stating that a program about textiles and crafts was designed to contribute to the preservation of a skill that generates income for women living in rural areas, or to preserve part of a valued culture, the practitioner lessens the likelihood of people concluding that the result perpetuated the sewing image. By explicitly stating that the intent of a money management course was not to change the world nor to discuss what it means to live in a consumer society, but to help families live within an income, the practitioner has mitigated any chance of people misconstruing their intent. In this case, technical information best served the needs of the families.

### Conceptualizing an Intellectual Showcase Approach

Because of our moral obligations to society, members of the profession are compelled to consider the merits of showcasing and highlighting the thinking behind their research, programs, services, and initiatives. This effort would yield transparency leading to accountability to ourselves and the public. As a case study to illustrate this idea, the rest of the paper is anchored in the profession's conventional use of the central concept of system of actions. Brown & Paolucci, (1979). noted that the founders of the profession recognized that families engage in three kinds of actions (citing Hunt, Richards and Talbot's musings set out in the Lake Placid Conference Proceedings, especially those from 1901) and drew on the then leading edge ideas of Habermas (1970, 1973) and the notion of three metascientific<sup>2</sup> views (analytical/empirical, interpretative and critical), to further augment the founders' idea of three system of actions (pp. 40-50). Since then, many other home economists<sup>3</sup> have drawn on their work (and also on Habermas (1984)) to the point that systems of actions is now a standard in our field (Hultgren & Coomer, 1989; Johnson & Fedje, 1999; McGregor & MacCleave, 2007). To facilitate the development of this case study about how to showcase and highlight the thinking behind our research, programs, services, and initiatives, Table 1 was developed. It juxtaposes the three system of actions approach against attendant theories, knowledge, interests, and resultant approaches to practice, all of which determine what is accepted (expected) as valued outcomes from our work (Brown & Paolucci, 1979). The basic premise of this approach to practice is that practitioners will approach each situation, in consultation with those impacted by the final decisions and decide, together, which combination of actions is relevant to address the issue. The practitioner works to create a *system* of actions, with a reasoned rationale for the specific combination of actions in that particular context. *System* refers to the interconnectedness of the three actions and Brown and Paolucci understood *actions* to mean the Greek concept of contemplative thought leading to a future act governed by intention (p.24). Drawing on Arendt's (1958) theory of the human condition, they suggested that *action* is different from behaviour (which can be predictable) because the act arises out of innovative, freely reasoned thought (pp.21-22). Action, in this context, can never be, nor should it be, predictable. Home economists eventually began to use the Venn diagram to illustrate this concept (three equally sized concentric circles). The next section weaves together a discussion of the elements in Table 1 to illustrate how

<sup>2</sup> Metascientific means a discussion of different kinds of science relative to each other.

<sup>3</sup> Leading thinkers in our field who espouse this idea are Virginia Vincenti, Edith Baldwin, Yvonne Gentzler, Kaija Turkki, Margaret Henry, Donna Pendergast, Francine Hultgren, Linda Peterat, Patricia Thompson, Rosemarie von Schweitzer, Eleanor Vaines, Francis Smith, to name a few.

practitioners can think about arriving at a system of actions for a given problem or situation, thereby better illuminating the thinking behind their practice.

#### **Four Kinds of Theories**

Brown and Paolucci (1979) discussed four kinds of theories that can inform the work of the profession. Empirical theories seek to explain why or how something is true. Analytic theories seek to clarify what concepts mean to people, and to clarify the language used to communicate this meaning to others. Interpretative theories move into the realm of human interactions, and seek to understand the motives, reasons or intentions of someone's behaviour. Finally, normative theories devise and use reason to justify a specific explanation of why people should conduct themselves in a certain way. The latter three approaches are related to meanings associated with living day-to-day in our social-cultural context, and how these meanings shape actions. The empirical approach is related to positivism (the only way to be *positive* that data and knowledge are valid is to generate it using the scientific method) (Brown & Baldwin, 1995).

Brown and Baldwin (1995) proposed that members of the profession must be very aware of which theoretical perspective(s) is at play in their work. They noted that "our concept of theory contains certain presuppositions that influence the way we see the world and organize it, what we consider explanation to be, and whether and how we would change the world... We make certain assumptions about human agency and human capacities [when we choose certain theories]" (p.7).

#### **Three Kinds of Knowledge (or Perspectives)**

From a metascientific stance, Brown and Paolucci (1979) identified three different perspectives that home economists can bring to bear on their practice: empirical, interpretative and critical science. These perspectives inform what people can accept as valid knowledge.

**Empirical knowledge.** First, they can adopt the empirical perspective wherein they interpret the world as it is, but make no attempt to change it. They do not let their values guide the selection of research to be done, or concern for how the results will be used. This approach is often referred to as *value free* research. From this perspective, home economists would focus on helping families consume technological products to meet unexamined needs and goals. Work around the home would be very efficient, but not necessarily what families need to be happy, or to enhance their quality of life. Feelings, emotions, and relationships would be ignored, and not examined. From this perspective, home economists would be blind to the dominant interests of industry, economic systems, and political agendas that affect social conditions, the human psyche, and any notions of moral integrity. The profession would shy away from self-criticism and self-reflection. Changes made within the profession would be based on trends, no matter where the trends may lead.

**Interpretative knowledge.** Second, practitioners can assume an interpretative perspective whereby they seek to

reveal the underlying intentions of people's actions with others. Their intent would be to understand the inner *life-world* of the individual, and of social groups in cultural settings. This understanding would come from a deep exploration of the words and concepts people use on a daily basis to live and describe their lives. Ordinary language impoverishes or enriches people's lives, depending on whether it is clarified and spelt out clearly. This perspective is also called communicative practice because it relates to communication - the exchange of ideas and messages. From this stance, home economists would seek to grasp what underlies people's changes, or their failure to change. They would achieve this by working with people in their daily context, their home, work place, their culture. Practitioners would explore intentions, motives, and purposes of people's daily actions so they can understand the daily realities of human action. Their role would not be to judge, but to seek clarification and consensus of meanings. Through this process, individuals and families are expected to gain enough insights to change themselves when they are ready (Brown & Paolucci, 1979).

**Critical science knowledge.** Finally, from the critical science perspective, practitioners would strive to help others free themselves from inner compulsions, biases, stereotypes and prejudices, and free themselves from external constraints (e.g., ideologies, institutions, power relations). Critical science is not a data-gathering science. It does use the results of the other two data-gathering sciences (empirical and interpretative) to interpret the contemporary human situation or condition in order to determine what actions are *possible*, and the consequences of those possibilities. Scholarship in the field would consist of critiques (looking for power in relationships), rather than just data gathering using quantitative and qualitative empirical approaches. Those practitioners employing the critical science approach would be deeply conscious of ideologies (e.g., neoliberalism, patriarchy, consumerism, capitalism, top-down globalization, political conservatism, Social Darwinism).

They would be vigilant in their scrutiny of forces shaping society (economic, political, technological, cultural, and scientific), always unveiling the hidden values, belief systems and assumptions behind others' actions that impinge on the human condition. They would believe that the family, a major social institution, needs to be freed from the domination of outside social forces. This freedom, this emancipation from oppression, marginalization and exploitation, would give people a sense of control over their environments (Brown & Paolucci, 1979). Home economists would rally around issues of justice, security, freedom, peace, equity, equality, sustainability, rights, solidarity and nonviolence (Brown, 1993).

#### **Three Kinds of Interests**

*Interests*, or why someone wants to know something, are central to the formulation of new knowledge and

perspectives (Habermas, 1973). He proposed that there are three guiding interests that shape people's work. Those who have a *technical* interest, so named for their concern for specialized or specific techniques, want the ability to obtain control of their environment for survival and self-preservation. People with a *practical* interest, stemming from the Greek connotation of practice - to think before one acts - are concerned with the formation of ethical character, moral development, personal self-formation, and relationships with others. Those who have an *emancipatory* interest want to know things related to freeing people from inner and outer constraints, leading to

their full autonomy, responsibility, and liberation from oppressive ideologies and paradigms (Habermas, 1970). Respectively, these three types of interest generate: (a) *information* that expands one's power of technical control, (b) *interpretations* that reveal why one acts as one does in the respective context; and, (c) *analyses* that free one's consciousness from its dependence on inner or outer power constraints and from ignorance and distorted views of reality and relationships that result from such things as prejudice, trauma, repression, oppression and useless conventions (Vincenti, 2002).

**Table 1** Three systems of action juxtaposed against theories, perspectives, knowledge, interests and approaches to practice

	Types of theories	Types of perspectives or knowledge	Types of interests	Approaches to practice
Technical COPE <i>meeting basic needs and wants</i>	analytical/empirical - explain why or how something is true	want to know how to interpret the world as is, but don't change it causal explanations technical information and procedures	predictions and control (allegedly for self-preservation, survival, and progress) focus on techniques and procedures, often linear in nature	help people buy goods and services to meet unexamined needs and wants
Interpretative ADAPT <i>human social interaction</i>	seek to reveal motives, reasons, intentions, values, beliefs, attitudes, meanings and expectations	want to understand the inner 'life-world' of people, the daily realities of human action. Also referred to as communicative because it deals with words and their meaning, rather than causes. There is a concern for expectations about behaviour between people.	interpretation and understanding leading to the formation of ethical character and moral development	help people understand why they behave the way they do so they can have better relationships
Critical INNER AND SOCIAL CHANGE <i>freedom from inner and outer constraints</i>	normative - justify what <i>should</i> be done to improve the human condition	want to reflect on forces shaping the human condition ethical and moral reasoning critical and creative thinking transformative learning and practice	critique of, and liberation from, inner and outer constraints on autonomy and freedom a focus on power and ideologies leads to an analysis that frees people's consciousness	help people critique and formulate goals for society, and how to accomplish these goals. Strive for enlightenment and empowerment.

**System of Three Actions**

Brown and Paolucci (1979) parlayed the notions of theories, knowledge and interests into a construct labeled "three systems of action" (p. 41). (a) *Three* refers to the three ways of thinking, knowing, and interests, as well as to the attendant theories; (b) *system* refers to the interconnectedness of these factors (home economists must rely on all of these, p.39); and, (c) *actions* is the Greek concept of contemplative thought leading to a future act that is governed by intention. As noted earlier, a Venn diagram (intersecting circles) is the conventional way to represent the notion of a system of three actions. From a system of actions perspective, Brown and Paolucci would have practitioners approach each problem situation by engaging in all three ways of thinking, theorizing, and assuming an interest. Instead of presuming that what was done in the past would work again, people would *think* about each situation from all three

perspectives, and determine which combination of *actions* is most appropriate for each situation. An example of this approach is illustrated in the following discussion. Showcasing the Thinking Behind this Paper: Thinking Behind this Home Economics' Initiative  
Imagine the impact that each research report, journal article, policy analysis, newspaper article, course or outreach program would have if it contained a Venn diagram showcasing the thinking behind the initiative. Readers would know which type of outcome the practitioner intended, and thus would be less likely to come to incorrect or pejorative conclusions about the work. If the public saw this *accountability identifier* on all work generated by the profession, they could begin to gain a dependable perception of the depth of our thinking, and the far reaching implications of our work (the human condition). A variety of different outcomes would become valuable and valued, partly because practitioners had

taken the time to clarify their intellectual and ideological underpinnings, in the face of opposition, critique and resistance.

As an example, Figure One illustrates the thinking behind this article. Whereas most home economists employ the idea of a Venn diagram with equal sized circles to illustrate systems of action, in this paper, it is proposed that the size of each circle in the Venn diagram (each action: technical, interpretative and emancipatory) can reflect the weight the practitioner places on which type of action is most appropriate for a given situation.

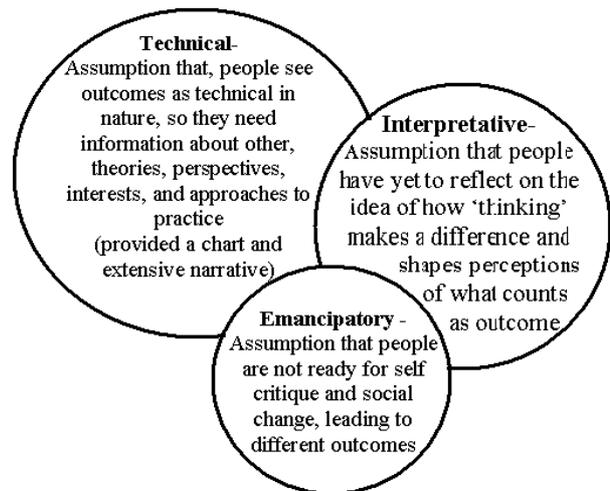
Figure 1 reflects this author's assessment of the readiness of people to receive the idea of showcasing the intellectual and ideological underpinnings of their work. The expected *outcome* is future dialogue about this approach to practice, and ultimately changes in practice. The largest circle is indicative of the author's assumption that, in order to engage in this future dialogue, practitioners need technical information about ways of knowing, theorizing, and stating interests, and about the concept of a system of three actions. To that end, the paper focused on providing this technical information in the form of a chart, and an accompanying narrative. The size of the technical action circle, at first glance, tells anyone reading this paper that the author's main intent is to provide a short term technical fix for the profession in hopes that future, richer work will emerge. Indeed, the presence of the other two differently sized circles tells a deeper story. Read on.

The second largest circle reflects the author's assumption about the readers' readiness to embrace the idea that 'showcasing the thinking behind their initiatives can make a difference.' It is smaller than the technical circle because of the author's belief that most members of the profession are not engaged in reflective practice to the extent that they can articulate their feelings, beliefs and attitudes about what counts as a valued outcome from their work. When pressed, most home economics practitioners are not able to fluently, persuasively and forcefully put into words their ideas about what counts as a valued end of their practice. They are so deeply trained in the technical approach to practice (see Table 1) that any other sort of outcome is not entertained, or even valued (McGregor et al., 2004; Pendergast & McGregor, 2007). The result is that the public does not hear a cohesive message from the profession about which ideologies, values or principles are behind our work. They see us as *cookers and sewers*, and do not value the work. Until people in the profession engage in personal and collective reflection about the significance of the impact of the thinking that shapes their work, they perpetuate a public image with which no one is happy and they do a disservice to society (McGregor, 2005, 2006a).

The smallest circle reflects the author's assumption that members of the profession are not yet ready to articulate what they should do to improve the human condition. They are not yet prepared to reflect on the forces shaping the human condition, are not posed to undertake ethical and moral reasoning, and are not strongly versed in the

skills of critical and creative thinking. The smaller size of this circle also reflects the assumption that readers are not ready for transformative practice, not comfortable with focusing on issues of power and ideology, forces that contribute to the degree of a person's autonomy, freedom and consciousness. Its diminutive size also implies that readers are not yet able to help people critique and formulate the moral goals of society, or how to accomplish these social ends. Members of the profession are not yet able to take a strong stance for enlightenment, empowerment, emancipation and transformation, and reflect this stance in their work.

**Fig.1: Showcasing the thinking shaping this article**



### Some Parting Words

Not everyone will agree with the thinking that shaped this article. But, at least the thinking *is* showcased. It is now visible for all to see, evaluate and judge. Because the thinking behind the ideas shared in this paper has been made explicit for those reading it, people are in a much more powerful position to critique the work, and take an informed stance with the author about the ideas in the paper, and judge whether this initiative *made a difference*. Assumptions are revealed, inferences are clarified, ambiguity is reduced, and a powerful venue for communication is opened. If the thinking behind our actions was made transparent, then degrees of difference, perceptions of what constitutes an outcome, and the intended impact would become much more apparent. Fewer misunderstandings would abound, more inclusive practice would emerge, and we would deliver morally defensible services to society.

The profession owes it to society to become cognizant of the powerful impact of its unexamined and unarticulated thinking (Brown, 1993; Brown & Paolucci, 1979; McGregor, 2005, 2006b; McGregor et al., 2007; Pendergast & McGregor, 2007). Even the best intentions can go awry or be misunderstood if viewpoints and worldviews are not clarified, and anticipated consequences are not articulated. If Brown and Paolucci (1979) and East (1979) were right, even 30 years ago, that home economics is a *focus on the home in order to*

*Oimprove humanity*, then members of the profession face a pressing, moral obligation to begin to elucidate and communicate the thinking behind their work, else others will not appreciate the magnitude of what the profession is about - the betterment of humanity through the strengthening of individuals and families as a social institution. Brown (1993), McGregor (2007) and McGregor et al. (2007) make a case for moving the profession toward a focus on the human condition, to augment our conventional focus on well-being and quality of life (McGregor & Goldsmith, 1998). Indeed, recent thinking from Japanese home economists also positions

the profession within the context of bettering and protecting humanity with a focus on the home (Fusa, 2004).

Improving humanity is the most honorable professional commitment imaginable. With this commitment comes a responsibility for transparency and accountability about the intellectual and ideological underpinnings of the work generated by the profession. This visibility further enables us to practice from a position of professional and personal integrity and ethical and moral responsibility. Showcasing our thinking can make a difference!

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# Making a Place for Pragmatics in Art and Aesthetics in Architecture

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## Abstract

Long standing views about art and architecture have differentiated the basic premise for their existence as aesthetics and pragmatics respectively. This paper is based on the premise that architecture must learn its aesthetic aspects from pragmatism in art to fulfill its pragmatic purposes and art must adopt the purposefulness inherent in architecture to assign meaning to aesthetic experience. Questions are raised and an attempt is made to answer the same through identification, and redefinition of certain theories to apply them to architecture and to today's social, cultural, and political scenario. Suggestions are made for architecture classrooms to exploit the wealth of scholastic insight available on pragmatism and neo-pragmatism in art education.

Key Words: Art, Architecture, Aesthetic experience, Home Economics Education

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## Introduction

Making a Place for Pragmatics in Art and Aesthetics in Architecture Kant separated architecture from fine art and labeled it as an impure art because it is purposeful while beautiful artworks only give the impression of having a purpose but actually have none (Bearn, 1997). This is a notion held by many in architecture and has echoed in the world of architecture as 3 words by Louis Sullivan (1947) - "form follows function". While architecture's intent, in its pure modernistic era, was labeled as fulfillment of a particular function, the intent of art was its aesthetic quality labeled as "art for art's sake". This paper is the result of my belief that, maybe despite the fact that we have come beyond the modernist era, art and architecture are still considered to have the same intents, functional and aesthetic respectively, by people (including artists and architects who may not clearly understand their fields and work).

These concepts (or misconceptions) defined the underlying purpose of this paper and led to its title: "making a place for pragmatics in art and aesthetics in architecture". Can the visual arts (architecture included) achieve pragmatic or aesthetic qualities without considering both qualities together? Isn't the fulfillment of pragmatic qualities dependent on considerations of aesthetic sensibilities and vice versa? This paper attempts to answer these questions through identification, application, and redefinition of certain theories in order to apply them to architecture and to today's social, cultural, and political scenario.

### Defining Pragmatism in Art

The pragmatic thought that influences this paper the most is that the purposes that art strives to fulfill are defined by the effect it will have on the audience (Spiegel, 1998). The fulfillment of this purpose is the reason for the existence of works of art. The pragmatic method would steer away from assumed necessities and first impressions, and look at consequences and facts (James, 1907). According to neo-pragmatic art educators

pragmatic methods of instruction encourage students to reorient their beliefs towards themselves and the events they experience (White, 1998). Anderson (1990) defined the underlying assumption behind pragmatic theories of art as paving the way for the social, political, and spiritual betterment of the world through works of art.

### Defining Aesthetics in Architecture

Aesthetics is not just beauty but includes qualities that please the mind and that exalt the senses (Spiegel, 1998). Ziff (2000) stated that aesthetics is related to the conception and appreciation of beauty, and to the notion of taste and pleasure. Aesthetic critique of a work of art involves observing the work, thinking about it, experiencing it, and finally appreciating it in terms of its aesthetic character. Ziff elaborated that the purpose and reason for the existence of a work of architecture is an important aspect of the process of aesthetic analysis. Cherry Holmes (1993) listed beauty, harmony, pleasure, joy, success, and well-being as criteria that are significant in assessing the aesthetic implications of elements derived from a pragmatic thought process.

Aesthetics in architecture goes beyond beauty and is a tool towards the fulfillment of its pragmatic purpose. Architectural space and human psyche share a relationship that is tied together by concepts of society, culture, and emotions. Architectural aesthetics encompass the sense of place, emotions attached to the interaction of people's psyches with the space, and behavioral responses to the ambient environment. The question that this paper strives to answer is if this definition of architectural aesthetics does not parallel the definition of pragmatism in art? Although this paper focuses on architecture this question may further extend into various fields in consumer sciences as an attempt to identify consumers' immediate as well as long-term behavioral and psychological responses to products they encounter.

### From Nature to Environment

As House (1994) pointed out, philosophy changes with the world around it and although some of Dewey's ideas are still relevant, some changes need to be incorporated. I

believe that in the concrete jungle that the environment is becoming, an important change that needs to be brought to Dewey's ideas is redefining the idea of 'nature'. To quote Dewey (1925/1981), "Experience is of as well as in nature. It is not experience which is experienced, but nature – stones, plants, animals, diseases..." (p. 12). Dewey's definition will need some reconstruction and elaboration in order to make it applicable for the current structure of the overall physical and metaphysical environment. Nature plays an important role in all of Dewey's ideas and this term needs to be replaced by "environment" a large part of which is the built environment. This concept was stated by Lippard (1997) as, "In the last twenty years or so, the word "environment" has replaced and demythologized a great part of what was once considered Mother Nature." (p. 12). Garrison (1994) summarized that for Dewey experience is all about the way human beings interact with their environment. Many of the experiences that Dewey related to nature are now located in concrete confines that only allow nature a small peek. Consequently, the definition presented by Dewey would read as: "Experience is of as well as in the environment." This would be a more holistic explanation of experience, as it will include the built environment that surrounds all human activity and, to a great extent, governs people's behavior and actions. I remember a friend on his way to his first skydiving experience. He explained his feelings as, "What amazes me is that there will be so much empty space around me. That never happens." The absence of open space in today's physical setting is often overlooked, and presence of built structures and other man-made products is an inherent part of any environment. Most people will be at a loss for an answer when questioned about the last time they were in a completely natural environment, one which had no human influence either in terms of structures erected by human beings or natural elements groomed by them to satisfy their comfort and aesthetic preferences.

### **Initiating Reflective Inquiry**

Dewey (1916/1980) questioned if a large part of the epistemological difficulties people face are not a result of the fact that their ideas of reality are formed without any reflective inquiry, which, if undertaken, would lead to beliefs that would be stable and permanent. Applying the same to architecture, one may imply that a large part of the problems in architectural designs are a result of architects' finding shelter in previously "successful" designs without questioning the relevance to a specific project, success being often defined by personal satisfaction, as against post-occupancy evaluation. Dewey rejected the idea of fixed, eternal structures, laws that are considered in advance to be continuous occurrences (Garrison, 1994). This notion applies to design elements that are assumed universally viable for fulfillment of aesthetic as well as functional requirements. Functional criteria that work for one project are considered universal for all similar projects and similarity in projects is largely related to buildings serving the same function, for

example, two office buildings, two restaurants, or two shopping malls. In doing so architects may fail to consider specific needs of the society where the proposed project is located and its beliefs, psychology, and behavior or interaction with the built environment. Globalization and the propagation of the "one size fits all" philosophy in design is also a concept that may be related to Dewey's idea of a widely prevalent epistemological problem.

Von Eckardt (1982) stated that, "If you are in love you don't need a sex manual. If you are only fooling around you have no business working for the arts." (proverb). Von Eckardt's statement was in reference to the guidelines and rules that architects and planners seek during the design process. One may extrude this to relate to Dewey's (1958) idea of art making as an act of love in which the artist is not just solving a problem but is attracted to the ideas, emotions, and actions involved in the process of art making and viewing. Rorty's (1989) concept of recontextualization of contingent wholes is also along the lines of exploration of the emotions and discovering reality during the process of art making (process of design as applied to architecture). Architectural design ought to be a process of discovering realities through experience and interaction with the built environment. Architecture can only be experienced in terms of its influence on people's emotional state and behavior. Anthropometric data and corporation guidelines do not independently make architecture. What makes architecture is space that speaks to its consumers and a design process that was based on "recontextualization" of the pre-specified data and guidelines to apply to the specific project, its socio-cultural context and its projected users. Like architectural spaces, all products may be evaluated in terms of their effect on consumers in terms of individual consumers' psyche as well as projected influence on the social scenario they penetrate.

### **Form (still) Follows Function**

The supremacy of functional consideration in architectural design was summarized by Sullivan (1947) in the dictum 'form follows function' (Michl, 1995). In the age of Renaissance and Baroque, technicalities were considered subservient to formalist objectives and function was the most important quality for a building to be considered delightful (Holgate, 1992). The belief was that good architecture and beauty are automatically achieved if the design process is strictly geared toward logic, functionality, and economic efficiency. Functionalists believed that the form of all objects is a derivative of the intended purpose and designers can find forms relevant to their intended function in previous examples (Michl, 1995).

Proponents of functionalist theories in architecture avoided the term architecture because it references art, which was associated with aesthetic qualities (Norberg-Schulz, 1988). They adopted the term building which, according to them, was a true depiction of what the field meant. Norberg-Schulz further mentioned that aesthetics were replaced by the idea of creating clear and functional

construction which did not, in any way, express or symbolize. This form of architecture was essentially neutral and homogenous providing few possibilities for variations in life. Some proponents of modernism like Walter Gropius and Mies Van der Rohe stated that function or rationalism is only the basic premise for the modern movement but the intent was aesthetic satisfaction (Norberg-Schulz, 1988). The consensus however remains that even though the underlying agenda for modernism may have included an aesthetic component it was function that predominantly guided architectural design.

### **Going Beyond Functionalism**

Eisenman (1976/1996) introduced the concept of post-functionalism which essentially negates functionalism while proposing certain theoretical alternatives. He argued that function is only worthy as a representative of the meaning that architecture is intended to symbolize. Post-modernism, which is used as a synonym with post-functionalism in architecture, was largely a demand for meaningful architecture while rejecting the formalist belief in the definition of architecture as being a mere translation of practical and socio-economic conditions into the form of buildings (Norberg-Schulz, 1988). Postmodernists like Tschumi (1980/1996a) discarded modernist concepts and propagated the basic difference between building and architecture as the idea that buildings are based entirely on usefulness whereas architecture goes beyond that limitation.

Tschumi (1977/1996b) identified the problem with previous definitions of architecture stating that typically architecture is considered as “a thing of the mind” rather than an experiential art, an empirical event based on the senses (p. 534). He further mentioned that geometry and the pleasure of the senses come together to define the pleasure of architecture. Architecture is an appreciation of both sensory spatial experience and rational concepts, and a work of architecture is defined not by pleasure or functionality, but by the fact that it sets the unconscious in motion.

Tschumi (1981/1996c) adopted the idea of post-structuralism which identifies architecture as a human activity and space as related not to function but to events. He claimed that both modernism and post-modernism were tangled in the web of formalism although the definition differed, one is autonomous and self-reflecting while the other echoes historical and cultural precedents. There is a need to include the human body, and all its experiences in any discourse about architecture.

Schumacher (1997) discussed the concept of datascares defining an approach to architecture that rejects aesthetic sensibility, style, and taste in favor of selected functional parameters that define form. He mentioned that aesthetics, if granted more importance than is due, would lead to illusions that quality of design is ascertained aesthetically without the consideration of historic periods. The suggestion, therefore, was to start with functional form and find beauty within logics of modernism and social

relations instead of starting with ideas of beauty. Hicks (1999) mentioned that today function has become a “given” and is not a concern any more. According to Hicks, the phrase “form follows function” should read as “function follows form” (p. 44) since functionality of a product can be taken for granted and having assured that aspect, attention may be directed to the aesthetic. One may say that although functionality has always been a prime concern in architecture, the need is to redefine function in architecture. Form can still follow function and Sullivan’s (1947) statement will hold true if the definitions are blended to contemporary needs and beliefs. The definition of function needs to be stretched to include aesthetic sensibility of the designer, as well as the consumers. It needs to include meaning making with reference to societal and cultural beliefs. It needs to encompass behavioral and psychological relationships between the built environment and human beings.

Hicks (1999) mentioned with reference to the importance of the ambience of restaurants that dining out has become an art where the quality of food is no longer the most important factor. The function of a restaurant building has gone beyond a space that provides seating for a certain number of people to dine. Likewise, the function of an office building is not just to accommodate 20 cubicles each 10 feet wide by 10 feet long, restrooms, a pantry, and lighting and air-conditioning. The function of an office building is to provide 20 people the environment to work together, interact, and to encourage these people to feel motivated to complete the tasks assigned to them. The function of this building is to represent the company’s image in a way that makes the employees feel connected and dedicated to the company’s purpose. And the building’s function is to relate to the people that spend 8 hours a day inside it, to respond to their lifestyle, beliefs and needs. The designer therefore starts not with column capitals and furniture templates, but with a study of the company’s philosophy, the beliefs of the people working in the establishment, their needs, and the environment they return to when they leave the building, or the environment they leave when they enter this workplace.

Datascares as defined by Schumacher (1997) include performance criteria like density, light conditioning, ventilation, visual penetration, structural limits, and so forth. According to Dewey the essence of a thing depends on human interaction with them in terms of its purpose as well as their preferences (House, 1994). Therefore, human preferences are a part of providing meaning to things aside from the purpose it fulfills, and human preferences constitute a large part of their aesthetic sensibility and response to the work. Consequently, datascares should also include research about psychological and behavioral reactions, preferences, and relationships of human beings to spaces, colors, texture, and other products in the space. These datascares cannot be universal since there are culture specific requirements. It is culture that defines art, its relevance, and structure. The importance of culture in the arts has been emphasized by several scholars (Anderson, 1990; West, 1991). Anderson (1990) defined

art as “culturally significant meaning, skillfully encoded in an affecting, sensuous medium.” (p. 238). Art in societies relates to subjects in the socio-cultural framework that produced the work.

Architecture and design need an approach that responds to the consumers and to the society they cater. Designers need to consider a broader range of datascares during the design process so that the designed product is part of the social structure of the culture it serves. Design needs to go beyond fulfilling a function and get involved in socio-cultural meaning making, and behavioral psychological research.

#### **The Pragmatic Aesthetic of Architectural Space**

White (1998) defined three stages in Dewey’s vision of art experience: 1) contingent wholes, which correspond to the beliefs that viewers bring to the artwork, 2) demystification of the viewers’ beliefs as they focus upon alternative accounts of the world presented by the work, and 3) recontextualization or holistic change that occurs in the viewers’ beliefs as a result of their encounters in the world and with the work. Rorty (1989) maintained that truth is based on the cultural field and emerges from our interactions and recontextualization of contingent wholes. Design may be said to work in similar stages with consumers’ emotions by transforming their emotional states in the process of the interaction between the consumer and the space or product.

As discussed earlier, the purpose of a design is to mold the consumers’ emotions to what the space or the functions being performed require, or to the moods that the space was supposed to set. It is a transformation of emotional states from those that were brought to the room, the feelings that the space elicited, and the emotions that the space provoked as a result of their interaction. It is at this last step that the space fulfills its pragmatic purpose by setting the mood for the activity to be performed. In this process it fulfills its aesthetic purpose by initiating the senses by being conducive to what the consumer brought to it in terms of emotional states. It may be said that this is how far functionalism in architecture needs to extend. It needs to embrace aesthetics and emotions by acknowledging the interaction of man and space. Architecture should be based on “pragmatically aesthetic” or “aesthetically pragmatic” criteria in order to be truly functional. Neither aesthetic nor pragmatic needs can be fulfilled without the consideration of both these needs simultaneously. Fulfillment of the pragmatic (functional) requirement in its holistic sense will automatically fulfill aesthetic requirements, and fulfillment of aesthetic requirements is a step in the realization of designs that are holistically pragmatic. Parallels may be drawn into home economics and consumer sciences to follow a similar process in evaluating consumers’ responses to various products to identify if functional criteria are fulfilled through meaningful interaction between consumer and product.

#### **Pragmatism in Classrooms**

White (1998) mentioned that a good curriculum as well as

a good work of art depends upon the values of the communities that produce them and the values of the persons that interpret them. It is essential to explore stories from students’ lives and experiences, and to explore the relationships between art and the lives of people through the use of contingent wholes, demystification, and recontextualization. Taking the example of Picasso’s *Guernica*, White mentioned that although such works of art are used as part of the curriculum, educators seldom use the practices associated with the formulation of the artwork, or the artist’s emotions and ideas during the creation of the work. White summarized that art education driven by pragmatism would encourage inquiry into the ideas that students bring with them, a healthy interpretive exchange between art works and students’ beliefs, and wider expectations of learning outcomes. White also mentioned that these outcomes depend a lot on the extent and method of using the pragmatic agenda to develop relationships between the “issues raised by images and important aspects of students’ lives” (p. 228).

As discussed earlier in this paper, concepts of pragmatism in art are relevant to ideas of aesthetics in architecture. Architecture education has to encompass concepts of aesthetic sensibilities in order to achieve an education that provides a more holistic definition and understanding of achieving pragmatism in architecture. It becomes essential to apply ideas of pragmatism in art education to architecture education in order to encompass aesthetic aspects as well as socio-cultural and political references, and relate them to students’ lives and experiences. Encouraging students to explore experiences from their lives, their interaction with various spaces, and their opinions about architectural structures would be a step towards a complete architecture education, education that produces architects geared towards socially responsible designs that respond to more than the consumers’ requirements in terms of anthropometric data and guidelines from building corporations. Students will learn to distinguish between a living, breathing human being in a space as against the outline figures in books that provide architectural data. Architecture education should encourage reflective inquiry and encourage students to analyze spaces from the consumers’ perspective. Similar approaches may be identified for different segments of home economics and consumer sciences. Education in every consumer-related field can approach student learning as a process of defining and/or redefining their beliefs based on conclusions derived from an inquiry into their interactions with various products. This process would provide insights into the relevance of a product from the consumers’ perspective and justify the product based on functionality, aesthetics, and socio-psychological implications.

West (1991) pointed out the problem with studies in architectural history by stating that architects rely on the history presented by art historians or archeologists. These people do not look at history from an architectural point of view. Architectural education ought to emphasize the

need for students to look at history and analyze it from their personal perspectives in terms of social histories of technology and architectural practices. These histories depend on the cultural issues and present cultural crisis becomes the center of architectural history. Dewey (1925/1981) emphasized “truth” as being a product of social practices.

Classrooms need to incorporate studies of history from the cultural and social perspective; analysis of current social-political scenarios, multiculturalism, and globalization, as well as analysis of the design of structures and products with respect to societal beliefs and lifestyles. This approach to history will open students’ minds to analysis of spaces and products they encounter based on such socio-cultural and global criteria, and will initiate productive thought and discussion about available products based on their impact on individuals and society. It will also initiate inquiry into their designs from these perspectives and evolve a more holistic and socio-culturally oriented critique.

This would be the first step in encouraging students to involve themselves in reflective inquiry when making design decisions. The realization about the influence of designed spaces and products on human behavior and lifestyle will come from discussions in class and analysis of students’ personal experiences or observations. This realization will lead to concepts that are stable and will lay the foundations of designs that reflect the designer’s as well as the society’s beliefs.

### Conclusion

Architecture and art differ in the basic premises set for their existence according to long-standing views. However, if architecture has to learn its aesthetic aspects from pragmatism in art in order to fulfill its pragmatic purposes and art has to adopt the purposefulness inherent in architecture, this could be the beginning of aesthetically pragmatic art and architecture. Aesthetics and pragmatics, although defined as two separate concepts, are not separable and neither can be achieved without considering the other. If these considerations become part of conscious decisions made by designers and artists, they would lead to artwork, consumer products and architectural structures that respond to the viewers/consumers, relate to them, and elicit the desired responses from them.

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# Establishment of Average Body Measurements and Development of Block Patterns for Adolescent Boys in Nigeria.

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## Abstract

The purpose of this study was to establish average body measurements and develop block patterns for shirts and trousers for adolescent Boys in Nigeria. The survey research design and quasi-experimental design were used for the study. A sample of 399 adolescent boys were measured and arranged in three categories of small, medium and large. The measurements were standardized to obtain average body measurement for the boys. Data obtained were used to draft block patterns for the three categories of adolescents. The patterns were, front shirt, back shirt, sleeve, trouser front and back. Three shirts and three pair of trousers were constructed on calico from the pattern pieces drafted. The shirts and trousers were fitted on three adolescent boys, small, medium and large who also acted as models. Judges and the models assessed the shirts and trousers for fit and comfort using a five point scale. Mean was used for data analysis. A mean score of less than or more than 3.00 showed that the garment was either bigger or smaller than the size considered comfortable, and needs to be altered, while a mean of 3 indicated that the patterns fitted and were comfortable. Minor alterations were made on certain areas of the patterns and final patterns traced out. Recommendations were made based on the established average body measurements and the block patterns produced.

Key words: Block Patterns, Apparel Designing, Sizing, Adolescent

## Introduction

Adolescence is a transitional period in the human life span, linking childhood and adulthood (Santrock, 2005). This period according to Santrock (2005) involves biological, cognitive and socio emotional changes. An adolescent is a young male or female between the ages 12-18 years. The period of adolescence vary with cultural and historical circumstances. In Nigeria, as in many cultures, adolescence starts from age 10 to 12 and may end between ages of about 18 and 22. The adolescent period is divided into early adolescence and late adolescence. This period of adolescence begins with the onset of puberty and ends with the entrance into the world of adults. During this period, adolescents undergo several mental, biological, social, psychological and physical changes. According to Myrick (2002), physical changes occur in height, weight and body shape.

These changes are as a result of generations of genes, the individual's mother's pre-natal diet, adolescent nutrition, exercise habits and current life style (Keith, 1981). During the period of adolescence, clothing becomes very important to adolescents because adolescents use clothes to identify and belong to peer group. They also use clothing to make statements about the fact that they have come of age (Igbo and Anikweze, 2005). Adolescents also use clothing to protect, adorn and modify the body (Iloeje, 1995).

Clothing is anything placed on the body in order to protect, adorn and modify it. Clothing includes dresses, dressing accessories, make-ups, hairdos etc (Anyakoha and Eluwa, 1999). Adolescents feel that their acceptance, group membership and popularity are determined by the appropriateness and attractiveness of the clothes they

wear. Clothing also reflects a feeling of self worth of adolescents or a means of coping with the environment (Cox and Dietz, 1998). Hurlock in Iloeje (1995) also stated that clothes give adolescents an impression of growing up, becoming independent, self identification and identification with other people. Clothing gives cues to others about age, sex, race, social status, roles, intelligence, popularity, potential success and competence to individuals and these include adolescents (Marshall, Jackson, Stanley, Kefgen and Touchie-Speght, 2000). Also, clothing helps camouflage physical defects and disabilities.

Adolescents according to United Nations Department of Public Information (UNDPI) (1997) constitute the largest number of individuals in any nation or state. Hence they are the largest consumer of clothing items. In Nigeria, they constitute the largest customers to dress and apparel makers. The major method of providing clothing by dress and apparel makers in Nigeria is by the use of free hand cutting which does not involve the use of patterns. The dressmakers, tailors or apparel makers take body measurements and do free hand cutting out of fabric. Most tailors in Nigeria do not possess knowledge of pattern making and cutting out (Anikweze, 2003). This however has obvious disadvantages during construction as free hand cutting does not lend itself to mass production. Free hand cutting constitutes delays and may bring about poor fit.

Fit according to Marshall et al (2000) is the correspondence in the form of a piece of clothing to one's body. Properly fitting garments give feeling of physical comfort and self confidence.

Clothing items which do not fit well can never appear attractive or give the look of quality. Fit has been described as the most difficult area of sewing (Nastuk, 1975). She noted that the body fluctuates many pounds in a matter of one or two days, thus directly affecting fit. Apart from lack of skills in the use of patterns; commercial patterns which could be used in mass production are not available in Nigeria owing to its inclusion in the list of items the Nigerian government banned in order to save scarce foreign resources. The few available are so expensive that they are beyond reach of many dress makers and tailors.

Presently in Nigeria, there is no standardized average body sizing or standard block patterns developed from the body measurement of Nigerian youths. What is available right now is sizing and patterns from Europe and America. Kaka (1990) observed that this is a problem because the patterns are produced from body measurement of individuals from Europe and America. Body alignment and figure type of these Europeans and Americans are however different from what is obtainable in Nigeria.

The Nigerian adolescent especially the late adolescent is thicker at the hip-line than her European counterpart (Iloje, 1995). Hence occasionally, their patterns do not fit. These commercial patterns even when they could be adjusted are not readily available. It takes a lot of money, time and other resources to make a survey of body measurement, hence measurement surveys are not frequently done. According to Aldrich (2002). The last comprehensive British survey of body measurement publicly was in 2005. Many clothing construction companies still use them without modification. With this unavailability of commercial patterns, it has become necessary that basic patterns (blocks) which could be adapted to different designs and styles be produced. This thus calls for skill in pattern development.

As a first step towards the mass-produce ready-to-wear clothes for adolescents, there is need to establish average body parts measurement for producing patterns for mass production of clothes for adolescents in Nigeria. Body measurements needed for the drafting of patterns for adolescent boys include measurement of the chest, waist, hip, sleeve length, sleeve circumference, trouser length, crotch etc. Producing well fitted clothes for these adolescent boys is a function of accurate body measurement. This in turn depends upon the availability of accurate measuring instruments and appropriate skills in measurement (Igbo and Iloje, 2003). For measurements to be accurate, a number of guidelines which include measuring over non-bulky overdresses must be observed. Bray (1994) stated that there are two methods of taking body measurements namely; the direct measurement and the measurement obtained by the calculation of the proportion of one or two basic measurements. The direct method has been considered as difficult and patterns produced from such are unreliable. Its unreliability stems from the fact that it is not possible for instance to establish exact points or levels on the

figure being measured. Moreover, the figure of an individual fluctuates from day to day; the physical state and mood of a person may affect some measurements. For example a tired person usually stoops more and so will have a wider back. Haggard (2006) also advocated that during measurement a careful look at the personal characteristics of the individual figure, shape and stance whether ideal or not, upright posture, sloping or rounded shoulders, hollow back should be carried out as this will help in producing appropriate and good patterns. Taking a body measurement for a few people is not enough to produce patterns to be used for large scale production of clothes hence there is a need to obtain a set of standardized body measurements from a large number of adolescent boys which can be used to produce patterns for manufacturers of clothing to meet the needs of the teeming number of adolescents in Nigeria.

This study will be very useful to many groups of individuals. These include clothing and textile students as it will help them to learn how to develop block patterns which can be adapted to various styles. It will also help the teachers as it will provide information on how to draft and prepare patterns for boys. As more boys are gradually enrolling in clothing and textile classes, the study will be useful to them. Large scale clothing construction companies will find the block patterns useful as the block patterns produced could be used to mass produce shirts and trousers for boys. This is more so because as stated by Weber (1990) sewing for men is not as challenging as men's dresses do not experience change in styles very often. So patterns produced by this study will stay a long time in the market. Patterns produced can be of help to novices in clothing construction and home sewers in the area of producing garments for adolescents. This study was limited to adolescent boys in secondary school out of school adolescents were not part of the study.

## Objectives

The major objective of this study was to establish average body measurements and develop block patterns for adolescent boys in Nigeria. Specifically the study involved:

Taking body measurements of adolescent boys

Standardizing the measurements obtained

Using the measurements to draft shirt and trouser pattern pieces

Standardizing the patterns obtained

The following research questions guided the study:

- 1) What are the average body measurements of the adolescent boys of small, medium and large size in Nigeria?
- 2) How can the block patterns for adolescent boys in Nigeria be drafted?
- 3) How can the drafted block patterns be tried on the adolescent boys?
- 4) How can the block patterns drafted be validated for the adolescent boys in Nigeria?

## Method

This describes the design of the study, area of the study, plan for the study, population, sample, instrument for data collection, procedure and data analysis technique

Design of the Study: This study was carried out using both survey and quasi-experimental designs. The procedures involved were:

- 1) Developing body measurement chart that was used to collect the data.
- 2) Taking actual body measurements of the adolescent boys in their different sizes i.e. small, medium and large.
- 3) Establishing average body measurement for the different sizes of boys i.e. small, medium and large.
- 4) Drafting three shirts and three pairs of trousers from the block patterns using flat pattern method.
- 5) Constructing three shirts and three pairs of trousers.
- 6) Judging for fit and comfort of the block patterns drafted.
- 7) Correcting and transferring corrected patterns unto fresh papers.

Area of Study: The study was carried out in North central Nigeria that is Benue State. Benue state is strategically located as it has the characteristics of individuals from north and southern Nigeria. It is bound in the East by Taraba state which is a state in Northern Nigeria, Kogi and Nasarawa state. Kogi state also has people of Yoruba origin there too. By the South, Benue is bounded by Cross River and Akwa Ibom which are Niger Delta states. The vintage position of this state therefore made it possible for it to be chosen since almost all the regions and tribes in Nigeria have geographical influence on her. The state has twenty three local government areas and three educational zones with 254 secondary schools.

Population for the Study: The population for the study constituted all adolescent boys from all the government approved secondary schools in Benue state. The total population of adolescent boys as at 2004/2005 session was 108695 (Teaching Service Board Makurdi, 2004).

Sample: Two sampling techniques were used in this study:

1) To select secondary schools from the sample of schools the convenience sampling technique was utilized. Convenience sampling is the type of sample selected according to the researcher's convenience without necessarily referring to the representatives of the sample to the population (Uzoagulu, 1995). Thus the researchers selected five schools. The boys in these schools had the same features with all other adolescents in the state, besides the schools' population comprised all the ethnic groups in Nigeria.

2) To obtain the sample size of the adolescent boys, the Yaro Yammer formula in Uzoagulu (1998) for a finite population was used. The formula is  $n = \frac{N}{1 + N(e)^2}$  where

n = the sample size

N = the finite population

e = level of significance

1 = unity (constant)

After the computation, a total number of 399 adolescent boys were randomly sampled. The criteria for sampling the adolescent boys were their class at school which in effect represents their age. Nigerian secondary schools operate a six year programme. The researchers grouped the secondary school adolescent boys into three, that is Junior, Secondary one, and Secondary two with ages ranging from 12-13 years, Junior secondary 3 and Senior secondary 1 age ranging from 14-15 years and Secondary 2 and 3 age ranging from 16-17 years. They were called, small, medium and large sized and each group had 133 subjects.

Four types of instruments were developed for Data Collection: Body measurements chart (BMC), Toiles/shells for Testing (three shirts and three pairs of trousers), and Assessment charts for judges and for models

The body measurement chart (BMC) was divided into two sections. Section A dealt with personal information like age, state of origin, while section B was concerned with the body measurement. The measurements used were for the shirt: - neck size, chest, nape to waist, half back, shirt length, syce depth, arm circumference and wrist. For the pair of trousers measurement carried out were for waist, hip/seat, trouser length, crotch, knee length and ankle measurements were carried out from instructions in Aldrich (2006).

The Toiles/shells of three shirts and three pairs of trousers were assembled based on instructions from Igbo and Iloeje (2003) and Cock (2003). The toiles were for small, medium and large size adolescent boys.

Assessment criteria charts: two assessment charts were developed. The assessment charts were modeled from Anikweze (2003). The charts comprised eighteen items. These charts were rating scales based on a 5 point scale of 5,4,3,2 and 1 with variables like too wide, slightly too wide, satisfactory, slightly too narrow and too narrow respectively. A mean of 3.00 was considered appropriate and comfortable while any mean less than or above 3 was considered not fitted or comfortable.

Validation of Instruments

The four instruments used were face validated by two experts of clothing and textiles. One from the University of Nigeria, Nsukka and the other from the Dept. of Home Economics, University of agriculture, Makurdi. The experts scored the instruments on a three point scale of 1, 2 and 3 representing not relevant, relevant and very relevant respectively. Any instrument with a mean of 2.5 and above was regarded as relevant while any with a mean less than 2.5 is seen as not relevant.

The BMC had a mean of 2.9 while the assessment criteria charts for shirt and trouser fit and comfort has a mean of 2.8. This showed the instruments were very relevant for data collection. The instruments were therefore used to collect data for the study.

Reliability of the Instrument

To ascertain the reliability of the assessment criteria charts, a trial test was carried out. The researchers made three shirts and three pairs of trousers for the three

different sizes of the adolescent boys. These were modeled by three boys who were not part of the sample. The fit for the shirts and trousers were assessed using the five point scale. These score were organized and subjected to Cronbach Alpha reliability test. The coefficient of reliability was 0.86 which showed that the instrument were reliable.

#### Data Collection Technique

Data were collected using the survey and quasi-experiment methods. Data was collected following these phases:

- 1) Training of research assistants on how to measure the adolescents
- 2) Taking of body measurement
- 3) Establishing average body measurements
- 4) Drafting of the patterns of three shirts and three pairs of trousers using flat pattern method as outlined by Aldrich (2006)
- 5) Constructing/Assembling of the shirt and trouser pieces.
- 6) Fitting and judging for comfort of the shirts and trousers and comfort. The judgment was carried out by 20 judges for fit. The judges were chosen from one hundred and twenty male registered garment makers in Makurdi. The tailors list was obtained from their association's headquarters in Makurdi. The judges were randomly selected using the simple balloting method on the day of their general meeting. The judges and the models were then brought together and given the two sets of criteria for assessment of fit and comfort respectively. (See tables 2 and 3)
- 7) Producing the final pattern pieces.

Means was used to answer all the research questions. For research question which sought to take and find the average body measurement of the adolescent boys for small, medium and large size in Nigeria, the mean was used (see tables 1-6). For the research question that sought to find out how the patterns can be drafted, this was done following Aldrich (2006). For the research question on fit and comfort of the patterns, the mean of the judges' scores were used. The assessment charts had five options with the following ratings: Too large = 5, Slightly large = 4, Satisfactory =3, Slightly small = 2 and Too small = 1

Options 1 and 5 and options 4 and 2 showed degrees of dissatisfaction with fitness for the shirts and trousers while option 3 showed that shirts and trousers were satisfactory.

## Results

The following findings were made from the study:

- A) Average measurement of the various parts of the body for drafting of patterns for adolescent boys in the categories of small, medium and large were established (see tables 1-3)
- B) Three shirt patterns and three pairs of trouser patterns were drafted for the three categories of adolescents using flat pattern method (see figs 1-4).

C) The three shirts and three pairs of trousers were judged to have proper fit (see tables 4-5).

D) The models (adolescent boys) judged the shirts comfortable (small, medium and large) (see tables 6-7)

E) The three shirts and three pairs of trousers were ripped apart and their patterns traced out. (see figs 5-19).

Table 1 above shows that apart from the front neck depth and sleeve length which were slightly too wide and too long respectively, all the rest of the criteria had mean scores of 3.

**Table 1: Average Measurement of Adolescents Boys**

Measurement	Small N=133		Medium N=133		Large N=133	
	Mean	SD	Mean	SD	Av	SD
Neck	31.65	1.85	35.25	2.80	37.05	2.46
Chest	79.80	5.75	86.90	6.00	91.11	6.62
Scye Depth	19.59	1.25	22.05	1.51	24.43	1.97
Nape to waist	39.98	2.72	44.11	3.70	46.86	3.31
Half Back	15.81	0.98	18.19	1.49	20.52	0.88
Shirt length	64.59	3.58	69.50	4.74	79.92	4.92
Sleeve length	53.56	3.58	56.84	4.38	61.76	9.12
Arm Circumference	33.82	1.08	36.09	1.20	38.82	6.40
Wrist	18.99	1.36	21.15	1.60	22.78	1.95
Under arm	41.98	3.53	45.06	4.07	48.08	3.83
Hip/Seat	81.81	4.74	87.89	6.71	93.00	7.44
Waist	67.46	3.93	75.17	6.91	79.05	3.88
Body rise	18.77	1.32	21.51	2.18	24.04	1.29
Inside leg	69.66	5.46	72.31	4.88	74.32	4.85
Ankle	35.40	1.76	39.16	1.59	43.51	1.84
Knee length	46.26	3.66	50.56	4.16	53.35	6.34
Trough length	88.79	5.74	92.91	4.92	99.02	4.80
Thigh	48.74	4.76	61.93	4.60	64.04	7.51

**Table 2. Assessment of Shirts by Models and Judges**

Measurement	Models			Judges		
	S	M	L	S	M	L
Neck size ease	4.7	4.3	4.4	3	3	3
Chest ease	3	3	3	3	4	4
Scye depth ease	3	3	3	3	3	3
Nape to waist	3	3	3	3	3	3
Shirt length	3	3	3	3	3	3
Half back length	3	3	3	3	3	3
Sleeve length	3	3	3	3	3	3
Arm circumference	3	3	3	3	3	3
Wrist ease	3	3	3	3	3	3
Under Arm ease	3	3	3	4	4	4
Overall comfort	3	3	3	3	3	3

This showed that the fit for the shirts on all the three categories of boys was satisfactory. For the front neck depth, the mean showed that it was slightly loose. These neck lines and sleeves lengths were thus adjusted following pattern adjustment methods. These were again modeled by the boys and then assessed to be satisfactory. The inside legs of trousers (table 2) was slightly too short with a score of 1.67. The trouser toile met the other

criteria with a satisfactory mean of 3.00. The inside leg which rated as being short was then adjusted using methods of pattern adjustment. These were worn again by the models for fit and comfort. They were then regarded as fitted and comfortable. The above table showed that the models found the shirt comfortable in all areas except for the neck size ease which were loose. The necks were thus adjusted using methods of pattern

Table 3 showed that the models found the trousers comfortable except for the inside leg which they did not find comfortable because it was slightly too high. This inside leg was then adjusted and the models were asked to wear the trousers and they returned the verdict of satisfactory.

adjusted and the models were made to remodel the shirt and found necklines comfortable.

### Discussion

Many of the measurements obtained from the present study did not seem to tally with measurements from Aldrich (2006), Bray (1994) and Hagggar (2006). This might be as a result of the fact that the figures of the subjects in this study were different from those of Europe and America. The adolescents from Europe and America may be slimmer and taller. The difference may also be as a result of the type of food eaten in Nigeria. Nigeria's staple food is more of carbohydrate and energy giving foods. The adolescents in this study might be stockier than their counterparts in Europe when considering the measurements in Aldrich (2006).

Table 3. Assessment of Trousers by Models and Judges

Measurement	Models			Judges		
	S	M	L	S	M	L
Hip / Seat	3	3	3	3	3	3
Waist	3	3	3	3	3	3
Body rise/Crotch	3	3	3	3	3	3
Inside leg	4	4	4	3	3	3
Trouser bottom/ Ankle width	3	3	3	3	3	3
Knee length	3	3	3	3	3	3
Trouser length	3	3	3	2	1	2
Thigh	3	3	3	3	3	3

Their counterparts from Europe and America seem to be taller. Poverty might be the contributing factor to this effect since protein foods like meat and poultry are not easily within reach of many of the inhabitants especially in the rural areas.

The findings of this study have implications for tailors/dress makers for they can adopt and adapt the block patterns produced by this study into various styles and use them in mass production of adolescent boys' clothes.

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The study also has implication for clothing teachers for they can use the block patterns drafted to teach the students how to adapt the blocks into various styles. The study has implication for home sewers. These home sewers can adopt and adapt the block patterns into various styles of shirts and trousers for adolescent boys at home.

It also has implication for the adolescent boys who are studying clothing and textiles as the pattern can help them in making their own clothing items.

The study has implication for entrepreneurs who could mass produce the patterns and thus fill the gap of the dearth of commercial patterns in Nigeria. This study also has implication for Nutrition Society of Nigeria and researchers in Nutrition as the body measurements could serve as anthropometric data which could be used for nutritional assessment.

It has implication for the Nigeria government as the findings could help in job creation in Nigeria as some entrepreneurs could get into the business of pattern making thereby providing employment for youths. Some researchers could be encouraged by the government to get into mass production of patterns which in turn will be of great use to clothing manufacturers and uniformed organizations like the army, the police, the navy, the air force and other uniformed groups.

### Conclusion

Based on the findings of the study, the following conclusions have been reached;

Since no body sizing system or patterns have been developed from the body measurement of Nigerians, particularly adolescent boys, measuring and establishing average body measurement is essential in constructing well fitted garments for the male adolescents.

Tailors/Seamstresses take a long time doing free hand cutting; this at times end up in waste of fabric or distortion of the design. Drafted patterns are therefore important to save time and fabric and provide good fit and comfort.

Many dressmakers who were used to commercial patterns do not sew again because of lack of commercial patterns. The development of blocks will make patterns readily available to them.

Block patterns can be adapted to various styles. As pattern drafting encourage creativity, these blocks could lead to further creativity on the part of pattern developers.

Based on the findings, the following recommendations have been made:

- 1) Data obtained from the average body measurements can be used by pattern makers for the mass production of patterns for adolescent boys. This will also provide employment for the many unemployed youths in Nigeria.
- 2) The data could be used for the adaptation of styles for adolescent boys.
- 3) The fashion and clothing industry, the military, the uniformed services like the police and air force and fire services could use the patterns for mass production of garments and uniforms.
- 4) The Nutrition industry could use the anthropometric data obtained for nutritional assessment.

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# Influences on Adolescent Girls' Decisions Not to Smoke Cigarettes: A Qualitative Study

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## Abstract

While many studies exist on adolescent smoking, few studies have been conducted to examine what influences adolescent girls say impact their decision-making about smoking cigarettes. We purposively sampled 13 teenage girls from a rural, tobacco-producing region in Southwestern Virginia for this qualitative study. All participants reported they were current non-smokers, and they mentioned parents, peers, and the media as the most common and powerful influences on their decision-making. Girls reported receiving strong, clear messages from multiple sources about not smoking, health risks, and morality-based warnings about harm to the body. Also influential to them were grandparents, other family members, churches/spirituality, and their own sense of self. While the results of this study cannot be generalized to the larger population, they do indicate that multiple people and entities have an important role in helping some girls decide not to smoke, even when the tobacco-producing industry has been present in their community for generations.

Keywords: smoking, females, adolescents, decision-making

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## Introduction

It is widely agreed that smoking is a serious health concern in the U.S. The majority (80%) of adults who smoke began smoking as teenagers, and a startling number of those teens continue to smoke well into adulthood (Department of Health and Human Services, 1994). The prevalence rate of females who begin smoking as teens has increased to the point where it has equaled that of boys (Girls Incorporated, 1997). While national surveys on adolescent behavior and health in the U.S. conducted in the last few years indicate a promising decrease in prevalence rates for both male and female adolescents, it is too early to speculate whether this trend will continue long term.

Recent surveys indicate that girls in the U.S. are using some substances, such as cigarettes, at a rate equal to boys and that boys and girls report different reasons for smoking. Females are also at risk for smoking-related diseases, reproductive disorders, pregnancy related problems, higher rates of osteoporosis, earlier menopause, and fertility problems due to smoking (Berman & Gritz, 1991). These differences in smoking behaviors and outcomes among females are evidence of the mounting need to study females in their own right in order to develop effective ways to prevent and treat this form of substance abuse [National Center on Addiction and Substance Abuse (NCASA), 2003].

Besides many of the health problems young women risk as a consequence of smoking, research exists on the risk and protective factors such as personality, family, peers, community, and culture that impact adolescent decision making and behaviors (NCASA, 2003). A recent report by the National Center on Addictions and Substance Abuse (NCASA) (2005) indicates that "Family, friends, and the community have much to do with whether a child

decides to use or experiment with substances" (p. 13). All of these can be important influences on girls' decision whether to smoke or not and can either protect girls or put them at greater risk for smoking. Reports from one national survey of adolescent behavior in the U.S. reveals that, regardless of gender or grade, risk factors for smoking included: use of alcohol, marijuana, and other illicit drugs; involvement in violence; having had sexual intercourse, having friends who smoke; and having learning problems (Scal, Ireland, & Borowsky, 2003). On the other hand, higher grade point average and family connectedness were protective factors among all cohorts. In addition, the more protective factors present, the lower the estimated probability of initiating smoking, regardless of whether the teen had high or low risk factors. The authors concluded that prevention efforts that have the best chance of reducing likelihood of smoking initiation among teens are ones that reduce risk factors and enhance protective factors at the individual, family, peer group, and community levels. Others indicate that teens with smoking parents are more likely to engage in smoking, especially when the parents do things such as ask their child to light a cigarette in the parents' mouth (Laniado-Laborin, Woodruff, Candelaria, & Sallis, 2002; NCASA, 2005; Sallis, Deosaransingh, Woodruff, Vargas, Laniado-Laborin, et al., 1994).

While there are risk and protective factors related to the smoking prevalence for all young people, some research has focused on those for teen girls specifically. One study by Unger and Rohrbach (2002) found a number of factors correlated very highly with smoking prevalence such as being female, smoking in the school, perceptions of smoking on TV, and cigarette offers. Other studies suggest the biggest influence on girls' initiation of smoking is for weight control (NCASA, 1996a).

Self-esteem has also been linked to prevalence of teen girls' reports of smoking (NCASA, 2001) in that those who report less confident and more negative views of themselves may be at higher risk for unhealthy, self-destructive behaviors such as smoking (Gilligan & Brown, 1992; Gilligan, Lyons, & Hanmer, 1990; Gilligan, Ward, & Taylor, 1988). In another self-esteem-related study, girls were more concerned than boys with aesthetics such as bad breath and discolored teeth as a reason not to smoke or quit smoking (Taylor, Ayars, Gladney, Peters, Roy, et al., 1999). Some studies point to stress relief, being around others who smoke, curiosity, considering it fun, and depression as reasons why adolescent girls say they smoke (NCASA, 2001; Commonwealth Fund, 1997). Still others have found that girls say they smoke because they want to feel more mature, appear autonomous, and fit in with friends (French & Perry, 1996; Seguire & Chalmers, 2000). Swan, Creeser, and Murray (1990) found that girls who were active in sports or individual leisure activities were less likely to begin smoking. Others indicate that educational aspirations and plans to go to college are strong negative correlates of smoking (Johnston, 2001). Clearly there are a number of important protective factors that can influence girls' decisions about smoking.

Recently, researchers have begun to point to families and parents as potentially the most important factor of whether or not girls decide to smoke (Brook, Brook, Gordon, Whiteman, & Cohen, 1990; NCASA, 2003; Johnson & Johnson, 2000). The National Center on Addiction and Substance Abuse (NCASA) (2003) researchers found that the majority of girls surveyed in the U.S. who talked about substance use with their parents said the conversations made them feel less likely to use, and taught them things about smoking and drugs that they did not know. Religion was also found to be an important protective factor for girls and substance use. Finally, the researchers found that girls who participated in three or more extra-curricular activities were half as likely to report smoking as compared to those who did not participate in any activities (12.4% vs. 25.5 % respectively). The researchers recommend that parents be alert to early warning signs of substance use including depression, anxiety, and excessive concern about weight and appearance. They also recommend parents set a good example by not smoking, conveying firm and consistent messages against smoking, monitor their daughters' activities, and engage in their lives with them.

Another study by Rotheram-Borus and colleagues (1996) found that parents and other family members were perceived by girls as more influential in their identity development than were the media, church, or teachers. According to a report by Phillips (1998), parents and other family members need to provide certain things for the healthy development of adolescent girls. Those include positive role modeling, identity acceptance, involvement in school; encouragement, advocacy, and support for girls' involvement in extra-curricular activities that help them develop self-esteem and leadership skills.

Seguire and Chalmers (2000) conducted a qualitative study and found that parental and sibling modeling of smoking made smoking normal and almost expected for girls, and allowed for easier access to cigarettes. These factors may increase the risk that girls will choose to smoke.

While there has been recent interest in studying adolescent girls and smoking, the focus has typically been on the risks that lead to smoking. Girls in regions of the U.S. that have historically been tobacco producing areas may be at risk for learning that the use of tobacco is not prohibited, even encouraged. What is largely missing from the published literature is an account of what adolescent girls from historically tobacco-growing areas of the U.S., such as Southwestern Virginia, say influence their decisions about whether or not to smoke.

Southwestern, Virginia's economy has been supported by tobacco as a cash crop for nearly four centuries (Borio, 2001), though production has steadily declined in the last 20 years. With the decreasing demand for tobacco in recent years, farmers and communities in this region are adjusting by finding other crops to farm or developing strategies in other industries to remain viable. This part of Virginia is a mountainous region closely associated with Appalachia and the Baptist and other Christian religions are well-represented here (Grymes, 1998). The area is mostly rural with towns spread out across the region. The largest city in this region is Bristol, Virginia, with an estimated population of just over 17,000 people (U.S. Bureau of the Census, 2000).

Today, Virginia is ranked fifth in the world for tobacco production, and 21% of Virginia's high school students report that they smoke, similar to the U.S. national average (Campaign for Tobacco Free Kids, 2007).

Social learning theory guided our study. This theory states that people can learn to behave by observing others (Ormrod, 1999). The outcomes of the behaviors people see in others helps reinforce their modeling of what they see others do. Behaviors that are reinforced by others and society are more likely to be modeled. Much of the previously published research suggests that the social context in which girls grow up becomes the model for much of their learned behavior such as smoking. This current study examined how girls who are living in areas where tobacco farming is a tradition make decisions about whether or not to smoke cigarettes. The main research questions for this study include: a) Who or what are the major influences on girls' smoking decision making? b) What messages do girls receive regarding smoking? c) What conversations do girls have with their parents regarding smoking?

## Methods

In this qualitative study, we used in-depth telephone interviews to gather data about smoking decision-making from a sample of teenage girls in grades 7-12 living in one of four contiguous, rural regions of Southwestern Virginia, a historically tobacco-producing area of the U.S. We chose phone interviews as the appropriate method

because it allowed for more participants to be interviewed in a shorter period of time, and removed the need for travel by either the interviewers or the participants and their parents. Prior to recruitment, we gained approval from our university's internal review board to conduct the study. In order to gain consent from participants, we began by sending a letter to each girl and her parents providing information about the study and to provide full disclosure about confidentiality and the purpose and use of the data collection. We informed them that their daughters could refuse to participate or end their participation at any point with no consequences. Two weeks after we sent the letter, we contacted the parents of the girls by phone, reviewed the consent form, and asked for their verbal consent to allow their daughters to be interviewed. After a parent gave their consent for their daughter to participate they either put their daughter on the phone or told the interviewer when would be a good time to call back to speak to their daughter. Once we contacted the daughter, we asked her for assent to participate.

We purposively sampled participants from a group of over 100 girls who participated in a previous and related study of ours the year before (see Meszaros et al., 2005). We anticipated interviewing between 10 and 15 girls for the current study, a number that is often adequate for exploratory qualitative studies of this type. To account for refusals, we selected 22 females from the original study based on the high quality of their data. We determined the quality of their prior interview responses by reading their previous interviews and selecting girls who gave thoughtful responses as opposed to one- or two-word answers to most questions. The rationale for this selection process is that we wanted to interview females who had engaged sufficiently in a simple survey so that they would be likely to articulate themselves in a phone interview about their own smoking decision-making.

We sent an introductory letter to each of the girls, requesting their participation in our research along with the approval of their parent or guardian. To encourage participation, we offered a raffle at the end of the study where all participants' names would be entered to win a \$100 gift certificate to a local department store. We contacted each girl by phone two-to-four weeks after the letters were sent to set up telephone interviews. Interviews were conducted between July, 2003 and April, 2004.

At the scheduled day and time, one of two trained interviewers called the participant on the phone to conduct the interview. Interviews lasted between 20 minutes and an hour and fifteen minutes, depending on how talkative was the participant. Participants gave verbal consent to participate and to be audiotaped, having the confidentiality of their interviews assured. We used a semi-structured interview in that each interviewer had a list of questions but were trained to probe and inquire about related topics in order to get a fuller understanding of the experiences of each participant. We have included a list of the basic interview questions in Appendix A.

After each interview, trained research assistants transcribed each tape for analysis. We provided a list of guidelines to each transcriber to ensure transcripts were of similar quality and format. Transcribers deleted names and other identifiers from the transcripts. We imported the transcripts into the qualitative analysis software package Atlas.ti (Scientific Software Development, 2002) to manage the data during analysis. We used open and axial coding (Strauss & Corbin, 1998) to uncover key themes across all interviews. Two researchers cross-coded all interviews to maximize the consistency and accuracy of coding themes. Both coders kept journals of their theories, biases, and assumptions of the data as analysis progressed, discussing their journal entries periodically. We met weekly to discuss developing hypotheses and check each other's codes until we came to agreement about the core set of codes for all interviews. Once the coding was complete, we used Atlas.ti to produce reports containing quotes from the interviewees based on key themes.

## Results

Of the 22 girls we contacted, four declined to participate, five were not able to be contacted after numerous attempts, and 13 were ultimately interviewed. All were U.S. citizens, never married, had no children, and reported that they were "very likely to continue their education after high school." Ten were Caucasian, one was Black, and two did not report their race/ethnicity. All reported living with at least one parent, all had parents who were born in the U.S. and nine reported their parents were currently married. Three fathers had bachelor's degrees, and another three had a high school diploma or GED. Two of the mothers had bachelor's degrees, while five mothers had a high school diploma or equivalent. Our analysis of their demographic information determined that sample of participants were not significantly different from the larger sample of girls on all demographic variables.

Unexpectedly, all of the 13 girls interviewed for this study reported that they were currently non-smokers. Most had chosen to never smoke in their life while three had tried smoking or had smoked earlier in their life, but now considered themselves non-smokers. Most of the girls knew someone who smoked, though only four said they had someone close to them (a parent, aunt/uncle, grandparent, sibling, friend) who was a smoker. Only one girl said she had never had an encounter with someone who tried to influence her to smoke, and never felt tempted to try. Overall, the girls interviewed had negative attitudes about smoking cigarettes and felt strongly that it was a bad habit and one that they would not engage in. Considering that all participants lived in a part of the U.S. where tobacco growing has historically been common, the fact that all were currently non-smoking and all had negative attitudes toward smoking is somewhat surprising.

As expected based on social learning theory, the adolescent girls we interviewed reported a number of

influences that they thought had impacted their decision making about not smoking. Not one person or thing influenced girls exclusively, instead many factors from multiple areas of their lives helped influence their decision-making. The themes that emerged from the data were of the influences parents, peers, the media, church or religion, or their own convictions had on their smoking decision-making. The following sections provide details about the reported messages girls received from each of these influences.

#### Parents

In response to an open-ended question about people who have influenced their decision-making about smoking, the most common influence mentioned by participants we interviewed was one or both parents. While mothers were mentioned more than fathers or both parents, it is clear that parental influence was important to these young women in their choices not to smoke cigarettes. All of the interviewees revealed that both of their parents were important influences in their decision making, even if their parents were divorced (all participants had contact with both parents regardless of their parents' relationship status).

Participants reported a variety of ways in which their parents influenced their decision not to smoke; most common was a strong and consistent message that smoking was bad. This message was reported most frequently. Not only did parents tell their daughters that smoking was bad, but they found other ways to reinforce this message. This included messages about the harm smoking does to a person's health, the short and long term health effects, and the effects to the health of others gave a strong message about not smoking. This was always combined with a similar message from the other parent about the negative aspects of smoking. One non-smoking young woman had a smoking father (though not in the house) and a mother who did not smoke. When asked about the message she got from her mother, it was clear that her mother disliked smoking and told her daughter not to smoke. The verbal message she got from her father was the same. She said:

*...he had always told me that it was bad to do and that you get addicted and it's hard to stop and that I should never start. But he also knew how I felt about it too. He always told me he was proud of me for being the way I was.*

For this young woman, having one smoking parent who still provided a consistent "don't smoke" verbal message had an influence on her decision not to smoke. On the other hand, one of the young women with whom we spoke said she smoked when she was a younger teen, influenced by the fact that both of her parents smoked at that time. Her parents continued to smoke while at the same time giving her the message that she should not smoke, and she eventually decided to quit and never smoke again. One reason she gave for this decision was that she saw how much smoking negatively impacts the daily lives of her parents, and she decided she did not want that for her own life.

around smokers. One young woman put it simply when she said, "And my mom always tells me that it's bad for you. That it's bad for your health and she talks to me about those kinds of things." Along with the message that smoking is bad, a related message came through clearly from parents for nearly all the girls in our study. That message was simply, "don't smoke." A few participants said they feared the repercussions of smoking after their parents repeatedly warned them not to smoke, but most said it was not fear acting on their decision so much as having a clear and unwavering message that they heeded. This message of "don't smoke" was often coupled with additional messages about the health problems and unpleasant side effects of smoking. This message was one that girls clearly remembered getting from their parents from a very young age, and they felt it had a strong positive influence on their decision-making. The messages tend to be coupled, tend to come from reliable and trustworthy sources that are constants in their life, and tend to have been the same recurring messages sent over a long period of time.

Based on reports from the participants, it appears that parents reinforced their verbal messages with one very important non-verbal message. A majority of the girls we spoke to identified the most important non-verbal message from their parents as the absence of smoking in the home. More than any other non-verbal, girls recognized the strong influence of not being raised around smoking as a deterrent from smoking themselves. Other girls we spoke to had at least one parent who currently or previously smoked but who

Some girls described observing the way their smoking parent (most often their father) dealt with his or her own nicotine addiction. A few girls remarked that watching their parents cope with not being able to quit, the rising price of cigarettes, and having to find restaurants or spaces that allowed smoking after many smoking bans were enacted was too much of a hassle to consider smoking themselves. These factors had a strong influence on these girls. One girl whose parents were divorced went to visit her smoking father frequently and said she was highly offended by the smell of him and his house, a situation that confirmed her decision that she would never smoke. Other parents who used to smoke but quit would relay stories about their own smoking and quitting histories to their daughter. Some girls said this information helped them decide not to smoke either because the stories demystified smoking or because the stories of addiction were a deterrent.

Perhaps equally as important as the messages parents gave to their daughter about smoking and the influence girls said their parents had on them, a number of girls said they did not recall any messages from their parents about smoking, nor any conversations specifically on the topic. For example, when asked about how her parents influenced her decision-making about smoking, one girl said, "...we really don't have that kind of discussion because I don't feel pressured or anything so I don't do it

or whatever.” When pressed by the interviewer to try to identify a recent conversation she had with a parent about smoking, she reconfirmed her assertion that she did not have specific tobacco-related conversations with them when she said, “Well they tell me right or wrong for everything, make your own decisions, be your own person.” Similarly, another participant said of her parents, “...they’ve never had a discussion with me about anything like that. Like about drinking or smoking or drugs. We’ve never talked about it.” It appears that participants did not need overt messages not to smoke, nor did their parents have to sit them down and talk to them about smoking, but simply being an influence on them to make healthy choices was enough to influence their smoking decision-making.

#### Peers

While not the most commonly cited influence on a girl’s decision not to smoke, some girls said friends or other people their age had some influence on their decision-making. In some cases it was a smoking friend or sibling who influenced the girl not to smoke because of how unattractive she thought it was. When a peer was cited as an influence it was as a positive influence not to smoke. Some girls said that none of their friends smoked and, because of that, they had never felt tempted to smoke. They pointed out that it is not difficult to decide not to smoke when you have never been offered a cigarette by a peer. One girl, when asked about the most recent time she decided whether to smoke, said:

*...no one’s ever even asked me... and none of my friends smoke. I just don’t hang out with kids that do... I’m sure there’s people that I’m in classes with that do, but I’m not that close with them or anything.*

Other girls described a similar scenario where they have never smoked and never intend to smoke, partly because no one they spend significant time with smokes. Some girls went one step further to say that they thought their friends had no interest in smoking nor will they ever smoke. This appeared to serve as a protective function for the girls with whom we spoke. Many of them said they have never had an opportunity to smoke and had no desire to smoke, so they did not perceive themselves as ever having had to make that decision. There were a number of girls who never smoked and had no intention of smoking but who were around peers who smoke quite often. One participant said, “Actually, to be quite honest, I’ve never been offered one...I’ve never had one, you know, put in front of my face, and someone’s asked me, do you want to? That’s a good thing (laughs).” Clearly this is a significant protective factor in that never having a clear and present opportunity to smoke makes the decision not to smoke simpler.

Sometimes peers were influential by being part of an environment where girls could talk openly about smoking. This usually took the form of talking negatively about smoking, discussing the reasons why they did not like smoking, and disliking some people who smoke. These participants had a strong sense of solidarity with the people around them who did not smoke, and some said

that the people they know who smoke are not that strong an influence on their decision making. In most cases those peers served as further evidence to them that they did not want to smoke.

There were a few girls with whom we spoke who had smoked at some point in their young lives, and had subsequently decided to quit or not smoke again. Only one reported she had quit after becoming addicted to cigarettes. Those same girls reported encountering other smoking peers who offered them cigarettes, but they reported it was easy for them to say they were not smokers and to refuse the offers. They all said they never felt pressured to smoke, only that they had gotten offers to smoke. One young woman said during her quitting period she would have brief thoughts that a cigarette would have a beneficial, calming effect on her, but that thought dissipated within three seconds when she became aware of her resolve to quit. She said the chance of getting re-addicted kept her making the decision not to smoke again. Therefore, starting to smoke, becoming dependent on nicotine, going through the process of quitting smoking, and reminding herself of how difficult quitting was is one process that worked for one participant who currently reports that she is a non-smoker. Becoming addicted to cigarettes and then quitting, therefore, may be one influential process that helps teen girls decide whether or not to smoke again.

#### Media

Besides parents and peers, the media was cited often as an important influence against smoking. While this is contrary to much of what is assumed in popular culture today, a recent wave of anti-smoking advertisements and campaigns appear to have had a positive impact on the girls we interviewed. Girls we spoke to said they had been influenced by some of the advertising campaigns on television against smoking and against tobacco companies. They were often able to provide details about the ads and were able to articulate the reasons why the ads influenced them. Participants were often able to quote from these campaigns or describe exactly what was happening in the ad and what they thought and felt about the messages. Some were able to specifically name the campaign from which some of these ads came. For example, one girl told us that some of the influences on her decision not to smoke have changed over time to include new influences such as the recent “Truth Campaign” in Virginia. Other girls were more vague about what they recall seeing on TV, but the take-away message seemed to be similar and have a lasting impact. Many of the messages they said they got from the TV ads were similar to those they had described getting from others, such as the health risks, risk of death, that smoking is stupid, and that it was not cool. But the way in which the message was delivered was dramatic to the participants who mentioned it.

Another form of advertising that was mentioned a couple times as an influence on participants’ decision not to smoke were the warning labels on packages of cigarettes.

One said that it was the only non-verbal message she recalls getting about not smoking and added, "...the cigarette package tells you, it warns you...that's what I heard basically." Other girls concurred and said that the advertising and public service messages about smoking had had an impact on their early decisions not to smoke.

### **Self**

While only a few girls mentioned themselves as an important influence on their decision-making not to smoke, it occurred enough to warrant inclusion in our results. A few girls stated that their own values and morals influenced them, and that they had a sense that one of the biggest influences on their decision-making was themselves. They described this self-directed influence as part of an internal process that told them what was right and wrong, and that not wanting to do something was a strong influence against doing it. One young woman described how her own conviction allowed her to rationalize her decision not to smoke when she said:

*...because I don't see any use in it if [cigarettes are] going to give you cancer then...I want to live a long life. I want to see my kids' grandkids and stuff like that. So I'm not trying to die fast by smoking cigarettes.*

Clearly some of her self-direction came from the influence of media and others in that she understood the health consequences of smoking, but she had absorbed those anti-smoking messages so completely that they became part of her internal, guiding voice.

Another girl we spoke to described how she has influenced herself about smoking. She told us, "...I don't know what stops me. I guess because I don't have time to go out and do it, and I don't feel the desire to go out and do something like that." Knowing she was now legally able to buy cigarettes, she said she had tried them a few times and liked them. Reaching the legal age to smoke had an influence on her decision to try to smoke, but this was combined with a stronger internal and external message not to. She added that her brother smokes and she thinks her brother is ignorant for smoking and did not want to do what he does. It is clear from her account that her process of deciding not to smoke has been influenced by a number of factors including her age, legal restrictions in the U.S., observing a smoker who she is close to, and internalized messages.

### **Religion/Spirituality**

Some of the girls we spoke to described their religion or spirituality as an influence of on their decision making about smoking. The ways in which church influenced girls was similar, as well. We did not specifically ask the girls what religion they were or what church they attended, but a few volunteered this information. One was a member of the Church of Jesus Christ of Latter Day Saints, another grew up in a Pentecostal Holiness church, and others simply described themselves as Christian. Those who talked about religion or church as an influence said they had gotten strong messages that smoking was not good, that it was against the Bible's teachings, or that

they never saw other church members smoking. The messages they got were both moral and ones about health and wellness. From a moral standpoint, one participant said that her religion taught her:

*...it's about being impure, and about doing things intentionally to destroy yourself, and that's just not something that, you know, being a Christian is about. You know, you just don't go out and intentionally destroy yourself like that. It's just like committing suicide but slowly. And suicide is a sin, so, I mean, you are just going to take something away that you've been given and it's not your right to do that.*

Another young woman echoed this sentiment when she said, "I guess the main thing would probably be the religious aspect that it would be disappointing to my God as well as disrespectful to him that I was using my life in a worthless way." Other messages from church were more about health. They were focused on the ways in which smoking can harm a person and how it is not good for the body.

Besides getting a strong message from church or religion, some girls said religion indirectly influenced them through the strong messages they received from other family members who were religious. It was not uncommon for girls to say that they had parents or grandparents who were very religious and taught their beliefs about smoking within the context of their religious beliefs. As an example, one young woman talked about the way in which her parents influenced her by way of their religious beliefs. She said, "And we have a very Christian-faithed family so it's really against our beliefs to do that [smoke]. And so my parents probably have impacted me a little--a lot--especially my father."

### **Other Influences**

In addition to the influences of parents, peers, media, self, and religion on smoking decision-making, some participants said there were other influences that impacted them. Other people were sometimes mentioned as having had a significant impact on their decisions about smoking. One girl remarked that she had an adult woman who was her babysitter when she was a child. She described this woman as "a good Christian woman" who taught her that smoking was wrong. She said she had been strongly influenced by her babysitter's faith and spirituality which led her to listen to her advice.

While parents were often cited as major influences on smoking decision making, so too were other family members. Almost universally when another family member was mentioned as an influence, it was in a positive way. Grandparents, aunts, uncles or cousins who smoked were cited as reasons girls chose not to smoke. A number of girls said visiting family who smoked made them not want to smoke due to the smell on their clothing when they left or noticing the stains on their walls and curtains in their homes. One girl said, "Well my dad when I was little he did smoke and I remember how awful it smelled and how it...when my grandmother was smoking

how she would just cough on purpose...., that's gross." Clearly, some people had a positive influence on girls like this one even though their smoking behaviors demonstrated unhealthy choices. In addition, some girls said their feelings toward their smoking extended family members were reinforced by the verbal messages they got from their parents. Some girls reported having conversations with their parents about how "nasty" it was that other family members smoked. It was not uncommon for girls to report that most of the conversations they had with one or both parents surrounded the washing of odorous clothes after a visit to a smoking family member's home. Some girls report that this was a strong disincentive to smoke, and this was reinforced by the messages they got from their parents about smoking being a negative behavior.

### **Discussion**

All the girls in this study reported that they were current non-smokers, a finding we had not anticipated. We believe that it is possible that girls who were current smokers may have opted not to participate either because of feelings of guilt or fear that an adult might find out. While another thought might be that the girls interviewed were not telling the truth about their smoking behavior, it is unlikely in an in-depth, semi-structured telephone interview where the only incentive was a chance at a gift certificate. Interviewers could have detected dishonest responses through the course of the interview since they were thorough and examined issues from many angles. This study, therefore, does not represent the thoughts and feelings of current smokers, nor those that would be considered high risk of future smoking since they were well above the age where smoking behaviors nearly always begin. We had assumed that growing up in a historically tobacco-growing region of the U.S. would have some negative influence on the participants' smoking decision, though we did not find this to be true. While we never specifically asked whether growing up in that area of Virginia impacted their decision not to smoke, neither did any of them mention it during the interview. It appears as though the agricultural status and history of that region has not had a direct negative impact on the smoking decision-making of the participants with whom we spoke.

Most of the participants had parents and friends who were non-smokers, all had aspirations to enter higher education, and the majority had parents with a level of education at or above a high school diploma. This study, therefore, provides some insight into how a small group of low-risk teen girls in Southwestern Virginia make the decision whether or not to smoke, regardless of whether they have ever tried smoking.

The non-smoking girls we spoke with acknowledged a number of influences on their current decision not to smoke cigarettes, a finding we anticipated based on social learning theory. The strongest of these influences appears to be parents. As some previously published articles indicated, parents were strong influences on these girls,

giving them a range of strong, decisive verbal messages about not smoking. Even those whose parents smoked reported that they got strong verbal messages from their parents not to smoke. The most common messages from parents were about negative health consequences and an overall message that smoking is bad. Some girls reported that their parents did not send strong verbal messages but sent strong non-verbal messages by ensuring their daughter was not exposed to smoking in the home. Most of the girls we spoke to said this was an important influence on their decision not to smoke. On the other hand, some research has suggested that parents of older teens think they have little influence over their child's decision whether or not to use drugs such as nicotine (NCASA, 1996b). Our study suggests parents should not diminish their influence and should persist in providing the message to their children that smoking is bad for them.

Besides parents, other family members had important influences on the girls to whom we spoke. Grandparents, aunts and uncles, cousins and siblings were all mentioned as other influences. Sometimes their influence was felt by the smoking behaviors they engaged in that girls decided were negative, and therefore helped influence them not to engage in similar smoking behaviors. Others were positive influences in that they gave strong not-smoking messages that served to confirm what girls had heard from their parents since early childhood. These additional family members appear to have an important influence on the decision-making process that girls report having around not-smoking.

Experts and research suggests that some girls are at lower risk of drug abuse, such as addiction to cigarettes and other drugs, than others (NCASA, 1996a). "Optimism about one's personal future, an active religious life, quality of academic performance, extent of parental involvement in the teen's life, and awareness one will be forced to choose whether or not to use drugs" are all protective factors identified in one 1995 nation-wide U.S. survey (NCASA, 1996a; p. 25). The same survey conducted a year later revealed that some of the other protective factors included having no friends who smoked cigarettes and having parents who believed they had a strong influence on their child's decision making (NCASA, 1996a). As reported earlier, most of the girls interviewed said their parents indeed were a strong influence on their decisions. All of the girls interviewed for this study also said they were very likely to continue their education past high school. Many of these girls also reported not having immediate family members or friends who were smokers. While these are two protective factors found in this study, they are not the only factor protecting these girls from smoking. Our findings confirms what others have found; not one factor is solely responsible for girls' decisions about whether or not to smoke, but a large and often diverse set of factors lead their decisions. Our results support the conclusion of Scal and colleagues (2003) that the best prevention efforts will be ones that reduce risk factors and enhance protective factors at the

individual, family, peer group, and community levels. This fits with the social learning theory perspective which states that people learn based on what they see others do and the outcomes of those behaviors.

While the literature suggests peers are a strong influence on adolescents' decision to smoke, and studies estimate that nearly 80% of teens report they have friends who smoke (NCASA, 1996b), our study did not find that peers were as strong an influence on our sample of non-smoking adolescent girls. They were rarely mentioned first as an influence. Girls we spoke to usually described their peer influences as positive ones. This is not surprising considering our participants were all non-smokers who reportedly felt little pressure from their friends and peers. Social learning theory supports this finding in that girls learn through observing the behaviors of others and receive positive reinforcement for demonstrating that learned behavior. None of the girls reported pressure to smoke from their peers. It is possible that girls who end up smoking receive more pressure from peers that help influence them to smoke. Past research has found that when girls have friends who smoke, the influence is often that they believe smoking is normative, therefore are more likely to smoke (Unger & Rohrbach, 2002). The few girls in this current study who had good friends who smoked, however, said their friends never pressed them to do the same, and they reported that they could resist any temptation they might feel to smoke simply because friends did. This is evidence of the strong conviction of a lot of these girls and their sense of self as well as the strong influence of other anti-smoking people and messages that have been internalized.

Media was also mentioned in the current study as an influence on girls' smoking decision-making. Specifically, girls cited a number of anti-smoking advertising campaigns they had seen that they were able to quote verbatim that they said helped them decide not to smoke. While results tend to be mixed on exactly why and how these campaigns impact adolescent decision-making, most current studies show that they do sway teens in the direction of deciding not to smoke (Thrasher, Niederdeppe, Jackson, & Farrelly, 2006; Weiss, Cen, Schuster, Unger, Johnson., et al., 2006), especially among teens who already are non-smokers (Sutfin, 2006).

This study is an important contribution to the extant literature in that it explores in a qualitative way what girls from a tobacco-producing region of the U.S. say influenced their decision-making not to smoke cigarettes. We believed that living in that area of the country alone would create a scenario where young women would embrace pro-smoking attitudes and some would be likely to smoke. This was not the case, however. All the girls with whom we spoke had a number of things that influenced their decision whether or not to smoke and they felt supported in their decisions from parents, friends, and even recent anti-smoking media campaigns. Because we chose the qualitative methodology, one of the strengths of the study is that we were able to learn about the lived experiences of a small group of girls in their

own words. Interviews are a good way to learn about the various ways in which people have experienced a phenomenon like smoking decision-making. We were also able to get clarification on important issues and learn about some things such as the positive influence of media that were not represented in previous literature. One aspect of this study that was both a strength and a limitation is that all of the participants were from a small region of the U.S. While it is significant that this region is a traditionally tobacco-growing region, it will be important to expand this type of qualitative research to include other girls in other regions of the country, including urban settings. Future research might include a longitudinal study of this type that examines perceived smoking-related messages over a longer period of time. An additional piece that could be included in a future study is a comparable sample of girls who self-define as current smokers as well as conducting the study with a comparable group of male teens. It will also be important to study additional samples of teens in other tobacco-producing parts of the U.S. to see how those results differ or are similar.

The results of this study can inform family life educators, therapists, health care professionals, school officials, and others who have interactions with teens and their families about the complexity of factors that lead girls to make decisions not to smoke. Increasing the influence of some of these factors may help to protect girls and help them make healthier decisions about not smoking.

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## Appendix A

### Interview Questions

1. Overall, what people or things do you think have helped you decide whether or not to smoke cigarettes?

2. Which of those people or things you just mentioned would you say have had the most impact on your decision-making? What next? What last? Have they changed over time? How can you tell they've had an impact?
3. Think about the most recent time you decided whether or not to smoke a cigarette. Tell me about how you made the decision to smoke or not. What did you think about, what did you consider, how long did it take you to decide, what factors led to your decision, who or what influenced you, what were the risks and benefits you were thinking of around that time?
4. Now I'd like to ask you specifically about messages you've gotten about smoking or not smoking from your parents. What messages have you gotten from your mother about smoking? What about your father? What verbal messages and non-verbal messages?
5. Think about the most recent time you and one of your parents discussed smoking. Where were you, who initiated the conversation, how did it go, and how did you feel about it when it was over?

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# Attitudes of Young Adults Towards Cleaning Agents

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## Abstract

The variety of cleaning agents in the market is huge and a consumer may have difficulties in making a choice. The aim of this research was to find out what young adults think about cleaning agents. The material was collected from Finnish and British university students who wrote down their thoughts about cleaning agents. Four themes were emphasized in the writings: marketing, technical factors, lifestyle and knowledge. The young adults' attitudes were largely unanimous, whether or not the respondents had studied cleaning issues. However, the British respondents emphasized safety issues, while the Finnish students emphasized environmental themes. The knowledge which the students desired concerned the basics of cleaning regardless of the respondents' background.

Keywords: Cleaning Agent, Young Adults, Consumer Choices

## Introduction

Cleaning agents are an essential part of household maintenance. The aim of a cleaning agent is to release dirt or other unwanted products from hard surfaces or textiles, a process enhanced by mechanics, time and suitable temperature. Dry particles become stuck through electrical forces, but soiling agents can also be fastened by water, oil or grease. Waxes, fats, proteins and pigments are particularly difficult. A soiling agent is often the mixture of many components. Coloured soil is rather troublesome. Although soil could be removed, pigments can remain on the surface and demand special treatment. Different soiling agents behave in different ways in the cleaning process. Some can be dissolved; some must be emulsified in liquid and not allowed to settle down again on the surface. Textiles or hard surfaces can be sensitive to certain chemicals; nevertheless, they need to be kept clean.

Modern cleaning agents need special properties. There are numerous new surface and textile materials that have their own demands regarding cleaning chemicals. Moreover, ways of life have changed, for example, clothes are changed often. They may not be especially dirty, but modern life has brought new kinds of soils that may be difficult to identify and release. An international kitchen, for instance, has brought new kinds of stains to private homes. Because people spend less and less time at home, all household work needs to be done quickly. Detergents should be efficient but safe. Meanwhile, environmental issues present their own challenges to cleaning.

### Cleaning Agents

The variety of cleaning agents in the market is huge. There are special products for households, for institutions and for industry. Previously, cleaning instructions were based on soap, alcohol, oil and wild plants. The depressions have taught people resourcefulness. Laundry has been washed with such things as potatoes, because raw potato will foam. (Heikkilä, 1988, p. 24) Compared with modern cleaning chemicals, many old-fashioned

ways of cleaning were quite harsh. Nowadays renewable raw materials increasingly replace ingredients based on mineral oil. Renewable materials include for example starch- and cellulose-based components, which are made from corn, potatoes and cotton. (Henkel KGaA, 2007, p. 16) Forms of cleaning products vary. Along with traditional liquids and powders, concentrates have become more common in recent years. There are also tablets and gels.

It is generally thought that the cleaning agents used in professional settings are very strong. In practice, however, the risks in the domestic use of cleaning agents are much bigger than in professional settings, the reason being that in households; knowledge about the cleaning agents may be very poor and based more on the information given by advertisers than on hard facts. In the professional work cleaning agents are used in a controlled way, and the users have been educated in their correct use. Hauthal and Wagner (2004, p. 13) present some requirements for modern cleaning agents: good cleaning performance, favourable price, care of materials, environmentally friendly, consumer safety, hygienic together with such additional features as pleasant fragrance, convenience and 2-in-1 products.

### Choice of Cleaning Agents

Attitudes towards household work may influence attitudes towards cleaning agents. The environment and the culture may have influence as well. Kristiina Aalto (1996, p. 30) has found four attitudes in cleaning: sporal cleaning, evasive cleaning, routine cleaning and cleaning procedure development. It can be assumed that the choices of cleaning agents also reflect these attitudes. It can be assumed that sporal cleaners think about the purposefulness of products when they clean. Evasive cleaners may use whatever cleaning agents are at hand. On the other hand it is possible that they aim to buy as efficient detergents as possible to pass the job quickly. Routine cleaners probably use products to which they are accustomed. Those who try to develop cleaning procedure may choose cleaning products on the basis of achieving

results which are as good as possible from the viewpoint of the whole.

Timonen (2002, pp. 167–172) has stated in her doctoral dissertation that sensible consumers act mainly in three ways: They search for the best price, they search for a certain product by some logo or mark, and they seek either to avoid some property (like chlorine) or to find a certain property (like low energy consumption). If the property cannot differentiate between products, then either price or name brand can be of help in making a choice. As Brackmann and Viefhaus (1999, p. 51) have stated, quality in function is important to consumers as well as the ratio of price to performance.

Aalto (1998, p. 3) has observed that in choices regarding textile care, environmental viewpoints are not the primary criteria, rather viewpoints that are visual or connected with self-esteem and lifestyle may prevail. In particular, the appearance – the packaging and form - of many laundry chemicals can prove very attractive. Many-coloured powders and pearls attract some consumers. The user gets the first experience of a product by means of sight, hearing, touch and smell. These qualities actually have very little to do with the product's performance, but they can give a strong character to a brand. Jordan (2000, p. 78) remarks that personal ideologies influence the aesthetics by which people appreciate products.

In the planning of a product all things are not emphasised in the same way. It can be assumed that the users' emphases are not similar either. An important issue is a product's influence on lifestyle. There is a question of those things that influence a customer's imagination and make the product pleasant at the moment of buying. Such things have an effect on consumer choice. Factors connected with the look and the performance of a product have an influence on the consumer's understanding of the product and determine whether it is bought. (Cagan & Vogel, 2003, pp. 228–231). Mutanen reports on research based on British and American material which deals with the attitudes towards television advertisements. According to the research, attitudes towards products are more positive if advertisements arouse emotions. If the advertisements do not arouse feelings, they do not have much impact, even though they include plenty of new information. (Mutanen, 2007, p. 4).

Currently, the variety of cleaning agents is so great that a consumer may have difficulties in making a choice. Vuori and Toivonen (1996, pp. 8–9) see four critical aspects in the relationship of consumers to products: 1) the attractiveness of a product or a product group; 2) the situation in which a product is selected from competing products; 3) the period of use, during which users get experience with the product; and 4) the renewal or the change of a product. All these aspects are important from the point of view of satisfaction. During these phases a consumer experiences of the product and its usability.

The concept of usability describes the functional quality or the quality of a user's everyday experience. Sinkkonen, Kuoppala, Parkkinen & Vastamäki (2002, p. 67) describe people's functional states with the concept pairs

'conscious – unconscious', 'controlled – automatic' and 'considering – experienced'. These descriptions can also be applied to attitudes towards cleaning agents. People are not always aware of the reasons for their choices. Some opinions that appear not to be based on anything may have their roots in attitudes received in childhood. Some brands have been on the market for decades, and it is possible that they have been passed from mother to daughter without any special consideration. Brackmann, Mayer and Viefhaus (2001, p. 35) believe that different lifestyles will result from more affluence, more flexibility and also from more mobility and bring about changes in consumers' needs.

### **Objectives**

The aim of this research was to find out what young adults think of cleaning agents. In modern society there are many trends and phenomena that influence young people's thoughts. Young people whose experience of life is limited and whose education is still underway are often very absolute in their opinions. The strengthening of green thoughts and the goal of living a natural life guide opinions in a certain direction as does emphasis on efficiency, trends and economic profit. The goal was to find out what young adults think – not what they have learnt - as well as to discover what things regarding cleaning they wanted more information about and what things in their opinion were important. The aim was also to see if young adults who lived in a different culture and whose education was different think in the same way.

### **Methods**

The material was collected from Finnish and British university students' writings. Finnish students (N = 68) studied to become home economics teachers and British students (N = 21) participated in consumer studies but had not taken part in any studies regarding cleaning. The students were asked to write down their thoughts about cleaning agents. They did not get more instructions, because the instructions might have had some influence on their thoughts. The writing took about ten minutes. The writings were analysed by means of content analysis. The material was categorised and the most emphasised categories were taken under examination.

### **Results and Discussion**

It was easy to identify four themes emphasised in the material: marketing, technical factors, lifestyle and knowledge. These themes stood out regardless of the country. Environmental and economic issues overlapped with these themes and are dealt with among all themes. In the following text authentic quotations illustrate the main themes.

#### **Marketing**

The respondents considered the marketing factors very strong. With emphasis they stated that advertisers endeavour to give the feeling that the products being promoted have better properties compared with older products. The young adults believed that many people

choose their products based only on advertisements because they do not have information about the products. As mentioned above, Vuori and Toivonen (1996, p. 8–9) consider that advertising, the first phase is to attract customers. The assumed improvements persuade people to buy. People believe that marketers create strong images that persuade customers to buy. Researches regard persuasion as part of social influence. Advertisers consider consumers' feelings an important way to spread their message. (Ryynänen, 2007, pp. 24, 36).

*Detergents are developed more and more all the time and advertising campaigns make us soon believe that the sleeve ends and the shirt must be washed using different laundry agents. Many consumers do not have any knowledge about what is the content of cleaning chemicals or at least they do not know of their effects. Many people have chosen the product according to advertisements. (Finnish student)*

The brands are connected with price, although the most expensive products are not regarded as the best. Timonen (2000, p. 167–169) has observed that the price and the familiarity of a product are important reasons for consumers' choices. Aalto (1998, p. 51) has arrived at the same conclusion. The respondents considered whether price has connections with a product's performance and whether cheap products are as good as name brands. Brackmann and Viefhaus (1999, p. 50) have observed the ratio of price to performance as being important to customers.

*I am especially interested and I have wondered if the price differences have a comparative significance in relation to the quality of products. When the budget is small, mostly the cheapest product is bought. (Finnish student)*

Many people are faithful to a certain brand. It is easier to buy the same product repeatedly because the choice is routine.

*I use always a few brands. (Finnish student)*

*Habit and familiarity are easily a person's second nature. (Finnish student)*

Aalto (1998, p. 51) observed that routines were emphasised in her subjects' choice of detergents. A change of brands demands a consideration of choice. Vuori and Toivonen's (1996, p. 8–9) thought of the competition of brands is easy to see. The choice process and the change of brands demand the follow-up of trends and product development. On the other hand, some respondents said that it was nice to use different products.

*I really know that I could manage with one detergent or two, but I think that cleaning is more sensible if I have a specific detergent for every situation and every room. It is nice to play with many bottles and choose a detergent with a different scent for every room! (Finnish student)*

According to the respondents, women are more informed about choices than men. Therefore, advertising is directed to women. Cleaning agents belong to the area of traditional women's work, which partly directs

advertising. This opinion is supported by Autio's observations according to which boys state that women have adopted a consumer role and girls go shopping. (Autio, 2006, p. 64) A French philosopher Henri Lefebvre thinks that organised everyday life will be materialized mainly in women's world. Women buy and consume consumer-goods and they are the objects of marketing strategies. (Kortti, 2007, p. 108).

People's needs are not always preferred in marketing. What is most important is that there are alternatives. When the number of alternatives increases, man-made needs are created. Many young adults thought that unessential matters were emphasised in marketing.

*I think that there are far too many selling tricks on the market and they lead consumers astray (the structure of a product, scent, shape, colour, bottle or box etc. (Finnish student)*

*Advertisers try to make consumers buy new products based on wrong argument. (Finnish student)*

*In laundry detergents the most irritating thing is the huge variety with big price differences and novelties when after a more exact examination it can be seen that they contain very similar components. It seems as if the consumers would be deliberately led astray. (Finnish student)*

#### **Technical Factors**

Although the respondents were all very similar in their views, one national difference could be observed around the theme of technical factors: the British respondents emphasised safety issues, while the Finnish students dealt with environmental ones. According to discussions with a British student group a year later, one reason for this difference may be geographical. The British respondents lived in London, which is a big city, while the Finnish students had been used to living near waters and forests. The other reason may be the difference in education. The Finnish respondents had taken part in courses in which cleaning agents and their use had been discussed. Thus, they were not so worried about safety as the British students.

The British students viewed cleaning chemicals as being very strong. Strong detergents were considered very efficient, but harmful effects were also connected with them.

*Chemicals which are used in cleaning of hard surfaces are very dangerous, but very efficient in doing their work. (British student)*

The young adults took it for granted that cleaning chemicals were troublesome in some way. They were especially concerned about the problems caused by breathing the chemicals.

*All cleaning chemicals are poisonous in some way and they are harmful to the environment and people. They can be dangerous to respiratory organs and some can burn skin and eyes. That is why it is important to know what they contain and which are alternatives. (British student)*

Some respondents were concerned about children and old people who were thought to suffer from the ill-effects of cleaning agents.

*I think some chemicals are not suitable to households where there are small children, old people and other people who are not in good health. I think that we should have more information about injurious effects when cleaning agents are used at home. (British student)*

Some students had experienced skin problems.

*I have noticed how dry and ulcered my hands become and sometimes they begin to itch afterwards. (British student)*

Brackmann and Viefhaus (1999, p. 51) have observed that knowledge about the allergic effects of perfumes or preservatives has an influence on choice. On 1 June 2007, the new EU REACH (Registration, Evaluation and Authorisation of Chemicals) regulations came into force. According to these regulations, manufacturers and importers will be required to gather information on the properties of their substances as a means of encouraging safe management. This regulation will improve the protection of both human health and the environment from the risks of chemicals. (Viridi, 2007, pp. 62–63).

Young adults wanted the bottles of cleaning chemicals to be supplied with instruction labels and information about what happens if chemicals are used in the wrong way. People were not well informed about the effects of detergents, they believed.

*But I think that it is dangerous to use strong chemicals and I do not know much about them. (British student)*

*Do these chemicals have any effect on unborn children if pregnant women use them? (British student)*

Environmentally friendly factors were emphasised by the young Finnish adults.

*I think that there are not enough environmentally friendly products in regular grocery shops. (Finnish student)*

The effects of cleaning agents on people and the environment must be considered. Natural agents must be brought out and their positive effects must be understood, although some other alternative would be more economic. (Finnish student)

Although ecological factors were considered important, inefficiency and high prices were also issues. Viridi (2007, p.62) also deals with this theme in the European Cleaning Journal. According to her article, Europeans tend to believe that if something is green, it cannot work. People assume that green products are expensive and perform poorly, as did the students in this research. Some respondents mentioned eco-labels, but the nature of eco-labels was not always understood. If a product has the right to an eco-label, its performance must be as good as the average performance in the same product group.

*I prefer to choose an environmentally friendly and functional product, although I have to pay more for it than for a cheap brand. Products that have*

*received an eco-label can be recommended if one can afford them. (Finnish student)*

*When an eco-labelled laundry detergent is used, there is the risk that some stains remain. Or do they? (Finnish student)*

Many also wondered whether the claims to have environmentally friendly properties were true. The average consumer cannot always know which products are truly environmentally friendly. The eco-labels are one indication and a consumer can only rely on them.

*I think that it is very difficult to find an ecological laundry detergent and to be honest, I do not know if there are many. (British student)*

It has also been said that eco-labels, despite their appearance of objectivity, are not based on science. That is why it cannot be guaranteed that products with eco-labels are any better for the environment than products that meet all legal requirements. (Heinze, 2004, p. 792–800).

Many cleaning chemicals have a strong scent. The unpleasant odours of raw materials are hidden by scents. However, many people are sensitive to perfumes. The attitudes towards scents were of two kinds.

*The environmentally friendly products are not attractive because they are expensive and their scent is not good. (British student)*

*An environmentally friendly and scentless alternative will find its way into my home. (Finnish student)*

Speed was emphasised by many respondents. The use of cleaning agents allows time for other activities.

*When I use strong cleaning chemicals, I have noticed that I need to work less to remove stains. (British student)*

*The less time you use for cleaning, the more time you can use for more pleasant things. (British student)*

*Ease and handiness are the words of the day. (Finnish student)*

#### **Lifestyle factors.**

It is natural to use cleaning chemicals. According to Jordan (2004, p.75), research has shown that people tend to think of products as if they were personalities, and they tend to express a preference for products that they perceive as reflecting their own personalities. Cleaning agents are necessary, although their significance is not thought about. They belong to everyday life.

*Cleaning chemicals belong to the western lifestyle. (British student)*

*Cleaning chemicals have an important place in the life of a modern individual. Their place in the need hierarchy may be right after warmth, nutrition and love. (Finnish student)*

*Laundry and cleaning agents are self-evident when there are stains! They are industrial products which are necessary, although they cannot be considered such. (Finnish student)*

In the choice of cleaning agents many principles prevail

that in some way reflect people's attitudes. Environmentally responsible people, for instance, search for products with eco labels. Many people have an environmentally friendly lifestyle, and their aim is to decrease the use of detergents.

*I would not like to use too much laundry and cleaning agents. I can make the weekly cleaning without any detergents. The wide use of them has gone over the border of vanity. (Finnish student)*

*This insensibility may rise against us. Waters become polluted and organs become poisoned. (Finnish student)*

Ecologically responsible attitudes are supported by Brackmann et al. (2001, p. 35). They forecast that in the future, consumers will increasingly prefer products of a natural origin.

Although some people have some knowledge about the properties of cleaning agents and others consider protecting nature to be important, chemicals are not chosen for those reasons. One's own pleasure is important and in the choice of cleaning agents it means a certain scent or brand.

*When I choose cleaning agents, I do not necessarily take more ecological product but I may choose according to my own liking. It means that although things are known, I do not always act accordingly. (Finnish student)*

Middelhaue (2001, p. 43) points out that after the decade when ecological aspects were emphasised, the convenience and special effects are becoming more and more important to consumers. This consideration is supported by Jordan (2000, p. 189), who remarks that buyers may subconsciously want to convince themselves that a purchase is rational and find reasons to justify the purchase. Statistics show that the professional use of cleaning agents has increased in Sweden. One reason for this may be the increased number of special products. (Lundell, 2007, p. 19). It is possible that the same trend can be observed in household cleaning sooner or later.

#### **Knowledge related factors.**

Respondents indicated they would prefer more information about existing products to greater variety of choice.

*Real information about the properties of products is given very little unless one intentionally goes into the theme and searches for information. (Finnish student)*

Young adults wanted to get more knowledge about the basics of cleaning agents and their use.

*I need information about different cleaning methods – what is efficient on different types of dirt. (Finnish student)*

*When should something be washed and when it is exaggerated, for example, with clothes. (Finnish student)*

*Practical and ergonomical cleaning methods? In which temperature and with what kinds of equipment do the detergents work best? How should*

*detergents be dosed? Is cleaning natural chemistry? (Finnish student)*

Laundry issues turned out to be problematic. One reason was the significance of different types of laundry agents. Many-sided comparisons of powders, liquids and tablets were regarded as important.

*A consumer should know the correct use, objects and dosages of cleaning agents. (Finnish student)*

*It would be useful to know if it is occasionally possible to do laundry by hand using a dishwashing agent. (Finnish student)*

The significance of a dosing ball was not clear, either. The different operations of a washing machine were not understood and the need for more knowledge was evident. However, the primary problems were the compositions of cleaning agents and the effects of different components.

*At the moment I need basic knowledge, so that I can sensibly compare the choices in the store. (Finnish student)*

*It would be important to know how cleaning chemicals and especially laundry chemicals react in different temperatures. (Finnish student)*

*The information that I need is why and how ... I like to make conclusions from the reasons and the consequences of reactions on the practical level. (Finnish student)*

The respondents were interested in the ecological effects of cleaning agents.

*I would need more information about environmental issues → what every product really causes when it returns to nature. (Finnish student)*

*I think that more should be told consumers about the influences of cleaning agents on our environment and health. Too much hygiene should be given up! (Finnish student)*

All young adults were not aware of the fact that cleaning agents should be used such as they are. Some people wanted to know which detergents should not be combined if there are bottles which are not full. Some respondents had had unpleasant experiences in mixing of cleaning agents.

## **Conclusions**

Although the results cannot be generalised because the object group was relatively small and limited, the material was nevertheless sufficient for an indicative examination. It is possible to assume that a bigger object group would not have changed the findings. The method of collecting the material was deliberate. The short writings brought out the essential thoughts. The young adults' attitudes were largely unanimous, whether or not the respondents had studied cleaning issues. However, the British respondents emphasised safety issues, while the Finnish students emphasised environmental themes. There were no difficulties in interpretation. The writings brought out clearly the general attitudes towards cleaning agents as well as the themes about which the respondents wanted more information. It is thus possible to state that the aims were achieved.

The knowledge which the students desired concerned the basics of cleaning, regardless of the respondents' background. Cleaning issues start to become interesting when young people have to maintain their own households. For this reason information should be produced in a way that interests young people. Lifestyle factors were emphasised by the respondents. However, the strength of a product seemed to be the only remarkable factor. Those who used strong chemicals wanted to finish a job quickly in order to use their time for other activities. Those who avoided strong chemicals preferred ecological lifestyles. Other elements of the cleaning process were not considered, although the general discussion of energy and water consumption, for example, was up-to-date.

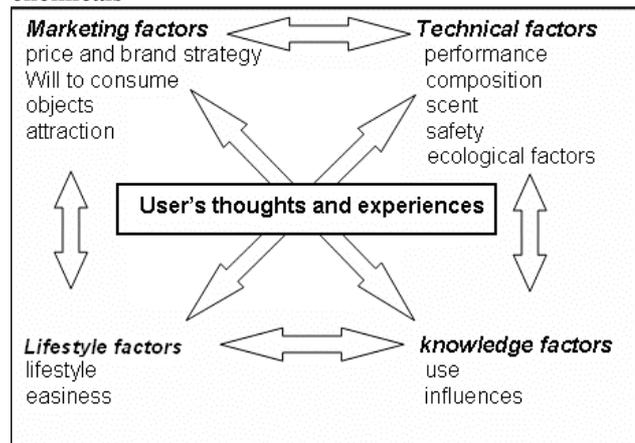
Sensible housekeeping means that the variety of cleaning agents at home is not unnecessarily large, as some respondents stated. Some people said that it was a pleasure when there were plenty of different cleaning agents, and every object to be cleaned had its own special cleaning product. From the viewpoint of the whole, it is not sensible but as a lifestyle factor it may be important to some. It indicates some kind of individualism.

The young adults' responses followed the lines presented by Timonen (2002, pp. 167–172). Price was important as well as brand name. However, the brand did not present any trend factor but showed a preference for products that testified to the efficiency of advertising. It is evident that the respondents connected the properties of cleaning agents more with brands than with the types of detergents. As to the laundry agents, the respondents spoke of agents that were used in the washing of white, coloured or easily damaged materials. As for cleaning agents for hard surfaces, a similar classification according to use was not seen. This indicates that young people have more experiences in doing laundry than in cleaning rooms. To keep clothes in good condition, a consumer has to pay attention to textile care, which simultaneously teaches laundry process. On the one hand, students' dwellings do not offer similar possibilities to practice cleaning different hard surfaces. On the other hand, in everyday cleaning many types of cleaning agents are not needed and the special treatments of surfaces do not belong to students' everyday life.

According to Timonen, one reason for choosing a particular cleaning agent may be to avoid some property. The components that caused allergy turned out to belong to this group. Niva, Heiskanen & Timonen (1996, p. 15) and Aalto (2002, p. 58) have found that in decision making, scent as well as allergy factors are very important.

On the basis of the considerations above, the following model (Figure 1) can be presented.

**Fig 1. Consumers' attitudes towards cleaning chemicals**



Lifestyle factors and technical factors overlapped somewhat. The technical properties promote the realisation of a chosen lifestyle. A trendy and quick lifestyle demands products that are efficient and work rapidly. A nice scent makes for pleasure. Those who respect ecological values pay attention to environmental properties and product safety. The marketing factor and the knowledge factor have also some connections to choice, but attitudes towards marketing were not very positive. Sufficient basic knowledge enables the evaluation of marketing arguments in a realistic way.

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# Experimental Cookery: A Sustainable Life skill Strategy Amongst Home Economics Education Undergraduates in Nigeria

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## Abstract

This study exposed the Nigerian University Home Economics Education undergraduates in Edo State to sustainable life skills practice, through experimental cookery, using whole grains/tubers. The purpose was to determine a suitable, cheap and readily available whole-flour, as a substitute for the expensive and highly polished wheat flour. The sample for the study was drawn using stratified random sampling from 4 levels in the Department of Vocational and Technical Education undergraduates in University of Benin, Benin City, Nigeria. The sample consisted of 400 undergraduate students. The instrument for the study consisted of 4 score sheets. Data collected was analyzed using one-way analysis of variance (ANOVA). Results revealed that biscuits made with sweet potatoes were most acceptable in taste, while the color and texture of the biscuit made from mixture of whole grain corn and guinea corn was most acceptable. The bread rolls made from the tuber flours were disliked by majority, but were recommended for slimmer and diabetic patients.

Keywords: Experimental Cookery, grains, tubers, food quality

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## Introduction

Living successfully above poverty, unemployment and upward surge of food costs in the society does not happen by accident. It takes an acquisition of a sustainable life skill strategy (SLS) obtained through Home Economics Education. Sustainable life skill strategy (SLS) in home Economics Education is an intervention model designed to help students, individuals, families and communities living with limited resources, achieve sustainable well being. This model incorporates communications, critical thinking and problem solving skills, through real life laboratory experiences. The National Association of State Administrators and Consumers sciences (1998) stated that life skill is focused on high level communicative and interpretative content and processes that are central to successful living and working in a diverse global society. Reichelt and Brun (2002) stressed that life skill addresses the broader family and society issues and critical solutions needed by 21<sup>st</sup> century youths. A sustainable life skill strategy (SLS) therefore requires learner imagination and courage, and their critical thinking skills, in practical classes to prepare them to live in a world that respects diversity of goals, opinions and beliefs (Anderson, 2004). Home Economics Education is a family centered field of study that is focused on the problems faced by teachers, students, individual, families and communities; and on solving those problems, by empowering them with the knowledge, skills and attitude that will enable them make decisions that are reasonable and beneficial. Vincent; (2004). A sustainable life skill strategy (SLS) therefore, is about identifying a problem and providing a lasting workable solution.

Nigerian meals lack variety, yet we have grains and tubers in abundance. In this study, apart from attempting to

substitute wheat flour with grain or tuber flour, an attempt was made to develop new products that would add variety to our diets and could increase nutrient intake at the household level.

Product development: Product development involves, using an existing product to create new products or development of entirely new product. Product development has been dormant among individuals and slow in our food industries (Uko-Aviomon, 2001). The economic crisis that Nigeria has been experiencing for the last two decades which led to harsh food policies and epileptic development of the food industries are responsible for this. What to eat has always been a problem of the populace as they are faced with very limited choice in terms of food (Oyakhilome, 2000). This study intends to develop new product that will be acceptable to the populace thereby increasing nutrient intake, stimulating indigenous food substances.

## Grains and Tubers in Nigeria- Availability And Nutrient Composition

Among all the cereals grown in Nigeria, corn is most readily available. Unlike other cereals such as sorghum, millet, rice and wheat which can only be grown in northern part of Nigeria (because of the prevailing climatic condition in the north) corn is grown in all parts of Nigeria – North, South, east and west. (Edo ADP 2006). Corn is grown in over 85% of the farmlands in the country. Corn is very high yielding when compared to other cereals with an estimated annual production of about 5.6 million tones (Central Bank of Nigeria, 1992). Corn is readily available all the year round because it can be dried and stored in cribs and silos. Corn is also cheaper than other cereals and this makes it a very important staple food crop in Nigeria. Fresh and dry corns are utilized in a wide range of methods (Okoh, 1998).

It is usually consumed either boiled, roasted or in processed forms of different tastes. Corn is also very important in livestock feed constituting more than 60% of the feed components. The harvest of the fresh corn (green maize) always coincides with periods when other food items are scarce or too expensive for common people. Corn is planted during the rainy season and dry season. The rainy season corns when matured are called “Early season corn” while the dry season corns are called “late season corn”. Although corn requires adequate rainfall, dry season planting is possible through the dry season farming called FADAMA farming (Edo ADP, 2006). This is the federal government drive for irrigational farming which is practiced in all the states of the federation, today improved varieties which are high yielding, nutritious and disease resistant has been developed by several agricultural research institutes thereby making corn available at a cheaper price than other cereals.

Nigeria produces about 15 million tons of yams annually (Eka 1998) white yam (*Dioscorea rotundata*) is the most popular specie of yam in Nigeria. Yams are grown in all parts of Nigeria but the highest yield is from the middle belt. Yam is either eaten boiled or pounded into glutinous dough known as pounded yam served with traditional soup or stew. Yam tuber is also produced and used as composite flour in baking; mashed yam is also popular for thickening soup or can also be molded into balls and fired before consumption. (Eka, 1985, Osagie, 1992). Yam is one of the most efficient carbohydrate producers per hectare among tropical plants and has a great potential for food and feed for animals, industrial starch, gums and adhesives (Eka 1985, Ene and Okoli 1985), based on these potentials of yam, it was considered a possibility for substitute for wheat in this study.

Guinea corn: Guinea corn (*Sorghum bicolor*) is grown in northern part of Nigeria only where rainfall is relatively low (625mm-1250mm). It requires a hot dry weather for the seeds to ripen; sorghum is mainly used for human foods in Nigeria. Such traditional delicacies include a thick paste called tuwo, alcoholic drink called burukutu, and pap. Sorghum is also used for production of larger beer, malt beverage and as animal feed, (Okafora and Aniche, 1980)

Wheat: Wheat (*Triticum aestivum*) has been known in northern part of Nigeria for long, it is a temperate crop and thrives under low temperature and such conditions exist in only very few states of Nigeria. The estimated annual production is about 0.4 million tones (central Bank of Nigeria Report, 1992). Wheat flour is popular bread making because of its gluten content. Bread is a staple food in Nigeria, a greater proportion of wheat used in Nigeria is imported than locally produced (Okoh, 1998). This study aims at finding a local substitute for wheat.

Sweet Potato: Sweet potato (*Ipomoea batatas*) is a temperature crop that is grown in northern parts of Nigeria. It is popular in Nigeria as intermediate moisture fried slices. Clipping and frying of sweet potatoes to low moisture content is fast gaining ground (Okaka, 1997). The tuberous roots are starchy and are the major sources

of food, but the leaves are also used as vegetable greens in some countries including Nigeria (Eka, 1979). Sweet potato is ranked 7<sup>th</sup> in world production after wheat, maize, rice, Irish potato; barley and cassava (FAO, 1985). Table I: Proximate composition of the food Crops (%)

Source:

	Corn <sup>1</sup> %	Guinea Yam <sup>2</sup> corn <sup>1</sup> %	Plantain <sup>2</sup> %	Sweet Potato <sup>3</sup> %	Wheat <sup>1</sup> %
Protein %	10.50	9.28	4.42	4 0.45- 4.37	11.63
Fat %	5.40	2.27	0.34	20 0.18- 1.66	2.33
CHO%	68.00	85.20	90.11	3 17-43	81.91
Fiber%	2.40	2.01	1.45	18 0.60- 4.54	2.97
Mineral%	1.60	1.24	2.75	0.66- 1.98	1.16

1=Okoh, E. 1998, 2=Ihekoronye & Ngoddy, 1985, 3=Osagie, & Omigbude 1998

In Nigeria, flour, starch, syrup and spirits are produced from sweet potatoes. It can also be eaten after boiling, mashing, and roasting (Eka, 1979). The dries from sweet potatoes form useful dry foliage crop for ruminants. The flour from sweet potato can also be used to formulate composite flour for baking (UN, 1985), this is very important because studies by Owenkwo (2002) has indicated that sweet potato has a short shelf life (4 months).

Plantain: Plantains is grown in the South, East and Western states of Nigeria, it is an important staple food in Nigeria. Plantain is superior to cassava because it has no toxic substances (Akunyemi and Odeleye, 2002). Plantain is a starchy staple whose demand does not fall with increasing income (unlike cocoyam and cassava). The demand for plantain is increasingly high because of its usefulness to diabetic patients and because it can be processed into composite flour used in the production of bread, biscuit, cake and other confectionaries (Akunyemi and Tijani-Eniola, 1977).

Studies have shown that some of these food crops have been processed into flour, used as composite flour in addition to what (at different levels to produce pasta products and baked products). Wheat sorghum bread (80% wheat, 20% sorghum) was successfully produced at FRC, Sudan (1985) wheat-maize bread was made in Ethiopia (Ethiopia Food Corporation, 1985) at 83.30% wheat and 16.67% maize Okaka (1997) also reported the use of plantain flour for bread making. In all these reports, none of them used 100% level of substitution. This study is aimed at attempting a 100% level of substitution of wheat flour with other food crops.

The recent preference for fad, fast foods and snacks amongst the Nigerian populace has caused an upward surge of the cost of polished wheat flour, which lack vitamins Bs and E (a risk factor for cardiovascular diseases) (Whitney, 2000). The preference has placed a

high demand on the polished wheat flour, leaving the effects on the majority, who cannot meet up with the cost, therefore making the business and flow of income to suffer amongst those in food industry in Nigeria. In this study an attempt will be made to screen local foods as substitute for wheat.

The main objectives of the study are:

To determine the acceptability of biscuits and bread rolls made with different food crops i.e.: corn, guinea corn, plantain, yam and sweet potatoes are amongst Home Economics Education undergraduates in Nigeria.

To compare the taste of the biscuits and bread rolls made from (whole) from the listed food crops.

To determine if the food crop flours can be substituted with wheat flour.

### Method

The sample of this study was made up of all the vocational and Technical undergraduates in the University of Benin, Nigeria, 400 undergraduates were selected for inclusion in the study.

#### Sample Size

The sample size for this study was drawn using stratified random sampling from the selected 4 units in the Department of Vocational and Technical Education, in university of Benin, Edo State, Nigeria. The size comprised all 70 Home Economics undergraduate students since they are few, 150 business education undergraduates, 100 Secretarial Studies Education Undergraduates and 80 Agriculture Education Students. Thee students were trained on food tasting.

#### Instrument

Data were gathered through the use of a score sheet- Experimental Food Score Sheet (EFSS), consisting of two sections. Section A contained items on student's personal data and their units. Section B consisted of five (5) items consisting of four sub-scales such as taste, texture, color acceptability and marketability. Each item was rated on a 6 point scale. The experimental Food Score Sheet was constructed by the researcher and validated by two experts in the Department of Vocational and Technical Education, University of Benin, Edo State, Nigeria.

#### Method of Data Collection and Analysis

Copies of the experimental Food Score Sheets were administered to the respondents by the researchers, unit by unit. Baked biscuits and bread rolls on the different products were labeled and displayed on Food trays. Undergraduate students were instructed by the researcher on what to look out for. Each product was tasted and scored by all the respondents. Data collected were analyzed using one-way analysis of variance (ANOVA). The mean of 3.5 for acceptability was used to judge the acceptability of all the products.

### Results

Table 2 and 3 shows the sensory scores of the biscuit and bread rolls made from whole corn (maize), yam, plantain, sweet potato and guinea corn. Results showed that biscuit made from corn had the greatest acceptable color with a

mean of 5.00. This was closely followed by guinea corn bread (4.89), yam (4.47), sweet potato (4.00) and lastly plantain (3.34). The mean scores for texture were as follows: corn (4.55), guinea corn (4.33), yam (4.00) potato (3.56) and plantain 3.34 when the taste of the biscuit were assessed, against biscuit made from corn had the highest mean value (5.00) followed by guinea corn (3.89), yam (3.89) plantain (3.11) and lastly sweet potatoes (2.79). The sensory scores for appearance of biscuit revealed the following descending order: corn (4.88), yam (4.22), guinea corn (4.22), sweet potato, (3.34) and plantain (3.11). the mean scores for marketability of the biscuit produced from different food crops revealed that biscuit produced from corn (4.47) will be most marketable while biscuit from sweet potato (2.56) will be least marketable. Other mean scores recorded are: 2.88 for guinea corn and 3.11 for yam and plantain respectively.

**Table 2: Mean Sensory Scores of Bread**

	Yellow Corn	Guinea corn	Yam	Plantain	Sweet potato	Sig. P.val.
Color	4.78	4.56	4.00	3.33	3.11	0.000
Texture	4.22	4.00	3.66	3.21	3.56	0.000
Taste	4.11	3.33	3.44	3.00	3.45	0.000
Appearance	4.44	3.89	3.55	3.45	3.34	0.000
Marketability	3.66	3.00	2.99	2.89	2.56	0.000

**Table 3: Mean Sensory Scores of Biscuits**

	Yellow Corn	Guinea corn	Yam	Plantain	Sweet potato	Sig. P.val.
Color	5.00	4.89	4.44	3.34	4.00	0.000
Texture	4.55	4.33	4.00	3.34	3.56	0.000
Taste	5.00	3.89	3.89	3.11	2.79	0.000
Appearance	4.88	4.22	4.22	3.11	3.34	0.000
Marketability	4.44	2.88	3.11	3.11	2.56	0.000

When the organoleptic properties of whole-food bread roll were assessed, again corn ranked highest with a mean score of 4.78, followed by guinea corn (4.56), yam (4.00), plantain (3.33) and sweet potato (3.11). The result for texture was as follows: corn (4.22), guinea corn (4.00) yam (3.66) sweet potato (3.56) and plantain 3.21. When taste was assessed, results showed that corn had a mean score of (4.11), sweet potato also revealed that bread rolls made from corn had the highest mean score for appearance (4.44), followed by guinea corn (3.89), then yam (3.55) plantain (3.45) and lastly sweet potato (3.34). In terms of marketability, corn still had the highest mean score (3.66), followed by guinea corn (3.00), then yam (2.99), plantain (2.89) and sweet potato 2.56.

### Discussion

Results from the study shows that corn ranked highest in all the quality parameters tasted. This confirms the earlier report by FRC (1985) that corn could be used to produce

bread although their research was carried out with composite flour (wheat corn mix). Corn is readily available in Nigeria all year round and is grown in all parts of Nigeria. Its yield is very high and is relatively cheap. Results also revealed that some of the food crops used had great potentials for use as wheat. Substitute in biscuit and bread making, they include guinea corn and yam. Sweet potato and plantain ranked lowest in most sensory qualities measured. This could be due to the high level of sweetness of potato in bread and the very flat taste of plantain in biscuits. Results also showed that apart from texture (for biscuit made from sweet potato), sweet potato and plantain ranked lower than the acceptable mean of 3.5; this indicates that they may not be suitable for use in whole wheat substitution. Rather they could be useful in the making of composite flour. This confirms the earlier report of (Akunyemi and Tijani: Eniola, 1977 and UN 1985 that sweet potato and plantain can be used to manufacture composite flour.

There is need for further research to find out what proportion of sweet potato and plantain flour will be required to produce acceptable bread rolls and biscuits. Results from this study reveal that corn, guinea corn and yam have great potentials for use as whole wheat substitute for biscuit and bread roll production.

The whole corn flour of all the products, appears most accepted by the majority of the respondents, judging from the results in tables 2, using the 6 point scale mark sheet and the 3.5 average point that is marked out for acceptability, the whole corn biscuits and bread rolls ratings on the mean; against color acceptability, texture, taste, appearance and marketability, all rated above 3.5 average score for acceptability, pointing to the fact that they are accepted by the majority of the respondents.

This therefore means that the readily available whole corn flour in Nigeria can replace or supplement the expensive, polished and processed wheat flour.

The ANOVA table shows that the various snack characteristics – color acceptability, texture, taste, appearance and marketability are not the same for all snack types.

### Conclusion and Recommendations

Apart from the economic gains in the use of the readily available and cheap whole corn flour, the nutritional values abound for consumers. According to Pratt and Matthews (2004), the yellow corn, contains carotenoids, which function as antioxidants and protects us from cancer and help defy the effects of aging. Sizes and Whitney (2000) also confirmed that whole corn contains nutrients such as Vitamins Bs, C, E and many minerals. Sizes and Whitney (2000) further remarked that corn oil is one of the major sources of fat-soluble vitamins and that vitamin E found in corn is one of the body's antioxidants.

Usually, additives are added to the polished flour to enrich it, but nothing can be as good as what occurs naturally. Cao (1998), in Pratt and Mathews (2004) confirms that in preventive nutrition, it is better to avoid

the consumption of all artificial additives, as this is the first step towards healing. The high roughage content of whole corn flour will also help to prevent constipation and check teenage obesity that seems to be on the increase in Nigeria due to excess consumption of fast foods. The whole corn will also be good for slimmers. Based on the general acceptability of the color acceptability, texture, taste, appearance, and marketability of the whole corn products – biscuits and bread rolls, the readily available whole corn flour in Nigeria can replace or supplement the expensive, polished and processed wheat flour.

This study revealed that:

- Of all the products used to make biscuits, the whole corn flour biscuits were most acceptable
- The bread rolls made out of the whole corn flour was most preferred by majority of the respondents.
- The tastes of the biscuits and bread rolls made of whole corn flour, was most acceptable. Majority of the respondents stated that their tastes were just agreeable for them.
- The whole corn flour can conveniently replace or substitute the polished wheat flour.
- The yellow whole corn flour contains carotenoids, which functions as antioxidants and protects us from cancer and helps to defy the effects of aging.

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**Socioeconomic differences in anthropometric measurements among school children living in Karachi**

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**Abstract**

Children form different socioeconomic status (SES) is likely to have different measurements. Paucity of local data hinders development of standard size of garments and presence of differences due to income level may further aggravate the problem. This study was conducted among a representative sample of 1498 7-14 year old schoolchildren of Karachi to explore socioeconomic differences in measurements needed for apparel construction.

Key words: Anthropometry, Sizing, Income level

**Introduction**

Socioeconomic status (SES) is found to be associated with body size in several countries (Groenewold & Tilahun, 1990; Wyatt & Triana Tejas, 2000). And various populations have studied body sizes and proportions in children (Becker-Christensen, 2002; Bogin et al., 2002; Dangour et al., 2002; Tanaka et al., 2004). In spite of differences in body measurements similar standard sizes could be used by children of different income levels if body proportions are not influenced by income level. In Pakistan also socioeconomic status is found to be associated with body size (Hakeem et al., 2001; Hakeem, 2001; Shah et al., 2003) but no assessment has been done of differences in body measurements needed for apparel construction. Thus this study was planned to explore socioeconomic differences in measurements needed for apparel construction and to identify association between various measurements so as to determine whether there are any differences in body proportions according to income level.

**Methodology**

This study was conducted in Karachi, the biggest cosmopolitan city of Pakistan. For data collection, four towns were randomly selected out of the total eighteen towns of Karachi. Three areas were selected from each selected town on the basis of low, middle and high category. Similarly, one school was selected from each area. Data collectors were graduates from R.L.A.K Govt. College of Home Economics (Clothing & Textile Dept); they were trained in data collection. A total of 1498 children of 6-14 years were examined, among whom 727 were from low income group (392 boys and 335 girls) and 771 from high income group (428 boys and 343 girls)..All

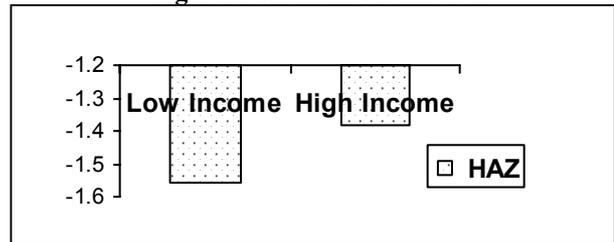
the pupils were examined in the Schools. Total fifteen measurements were examined in cm. Height and weights were compared with American standards and association of other body measurements with height and weight was studied... SPSS 11.5 version was used for data analysis.

For each child we measured height to the nearest 0.1cm, and weight to the last 100 g. For measuring height, we fixed a calibrated ruler to the wall. As the child stood barefoot with his/her heel, back and head touching the wall with the head in the Frankfurt plane, a thin wooden plate was placed above the head perpendicular to the ruler and parallel to the ground to measure the height accurately. Weight was measured using a portable weighing machine<sup>3</sup> that was standardized regularly, the child being barefoot and wearing light clothes.

**Results:**

Children from low socioeconomic status (SES) had significantly showed lower HAZ as compared to children from higher income group (Fig. 1). Modal age for various heights was higher among low income group in most cases. Average height related body measurements are expected to be lower among children from low income group as compared to their fellows of high income. However the differences would

**Fig 1: Mean HAZ of children\***



\*Difference statistically significant at  $p < 0.001$  level

**Table 1: Modal ages in months for various heights**

Height	Low Income	High Income
115.00	96.00	96.00
120.00	96.00	96.00
125.00	120.00	108.00
130.00	120.00	120.00
135.00	132.00	132.00
140.00	156.00	132.00
145.00	156.00	144.00
150.00	180.00	168.00
155.00	180.00	168.00
160.00	180.00	168.00
165.00	180.00	180.00

mainly be due to difference in height because height has significant positive correlation with other measurements as shown in table 1. All the associations were statistically significant at  $P < 0.001$  level. Though body measurements

are positively associated with age also the association is often stronger for between height and other measurements.

### Discussion

The purpose of the study was to explore socioeconomic differences in height and association of height and age with measurements needed for apparel construction. Though children from lower income levels are shorter the association between height and body measurement was strong in most cases and consistent among different income levels thus need for different dress patterns for different income level is not indicated. However the dress sizes suitable for any one age at high income level may not fit the children of similar age at lower income level due to shorter height. The dress sizes should preferably be chosen on the basis of height instead of age and in this way similar size would fit children of similar height from both income levels.

**Table 2. Association of height and age with measurements**

Measurement	Boys n= 1284		Girls n=1137	
	Age Pearson n's r	Height Pearson n's r	Age Pearson n's r	Height Pearson s r
Height	0.822		0.850	
Waist	0.590	0.601	0.573	0.626
Hip	0.691	0.750	0.731	0.766
Waist - Ankle	0.730	0.786	0.766	0.833
Body Rise	0.553	0.573	0.575	0.627
Crotch	0.694	0.681	0.589	0.606
Waist To Hip	0.496	0.570	0.449	0.498
Waist - Knee	0.741	0.764	0.693	0.767
Neck	0.612	0.681	0.715	0.757
Shoulder	0.636	0.679	0.716	0.741
CBL	0.633	0.740	0.692	0.746
Chest	0.591	0.631	0.634	0.682
Shoulder- Knee	0.786	0.748	0.715	0.789
Sleeve	0.699	0.702	0.730	0.792
Upper Arm	0.540	0.561	0.533	0.568
Wrist	0.543	0.541	0.576	0.625

Though children from lower income levels are shorter the association between height and body measurement was strong in most cases and consistent among different income levels thus need for different dress patterns for different income level is not indicated. However the dress sizes suitable for any one age at high income level may not fit the children of similar age at lower income level due to shorter height. The dress sizes should preferably be chosen on the basis of height instead of age and in this way similar size would fit children of similar height from both income levels.

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## Gender Differences In Measurements Of Pakistani Children And Implications For Designing Unisex Garments.

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### Abstract

Sizing system is generally designed to fit a subset of the population. Factors such as gender, birth weight and height influence growth. Many anthropometric studies have been undertaken on all age groups in other parts of the world but not in Pakistan hence required. The present study analyzes the differences occurring at various height levels among boys and girls (6-14 yrs.) as per the requirement for unisex garments. The sample for this study was one selected school from each of the 03 randomly selected areas from 04 of the 18 administrative towns of Karachi. Total sample size of children was 5400. SPSS was used for analysis. Mean and mean differences were taken for each measure on the basis of factor height. Height range used for analysis was 115 cm to 165 cm. The major body differences

analyzed among boys and girls reveal that the girls have larger measurements except for shoulder and waist. The average measurements can be used to design unisex garments for the construction of loose style shirts and low crotch trousers.

Key words Anthropometry, Unisex sizes, WST, SHL, L-C-T waist.

### Introduction

Sizing system is generally designed to fit a subset of the population, i.e., the target market, defined by demographic data such as age, economic status and gender (Yeosun, Hei, and Woel. December 2001). Many Anthropometric studies have been conducted on all age group in other part of the world. NIST (National institute of Standard of Technology), ASTM (American Society for Testing Material), ISO (International Standard Organization) all have set their standard sizes for consumers. Most sizing systems are derived from ASTM standard (ASTM D5585-95, 1995; ASTM D6192-98, 1998; ASTM D6240-98, 1998; ASTM D4910, 1999; ASTM D6458, 1999 ( E-Standard Store Sep7,2005) . There are regional differences found in many studies. Studies taken in one geographic location, such as white Philadelphia school children, white Alabama school girls, or Iowa children may not be representative of the current U.S. population. Regional variations as well as socioeconomic and ethnic or racial variations have also been recorded. Factors such as gender, birth weight and birth order of children influence growth. It is hard to know how much of the differences in weight and growth of children remain if they live in a similar environment and same optimal nutrition and care (Synder. May 1975). According to a previous study on children garment sizes many manufacturers use their own different designation and body measurement for the same size products. Each brand or line has its own fit model with a body shape appropriate for its target market (Akin.1998). Survey results by Kurt Salmon 1999 show that 50% of people say their clothing doesn't fit. The reason behind it is the ignorance of important factors that effect body changes before setting the body sizing standards.

In children's wear there is a wide range of body sizes based on several lengths related to height and several girths indicating body shape. Therefore, length and some girths indicating body shape are more important than weight in sizing of children's wear (Meunier Yin October 2000). Boys' bodies (apart from hipbone and thigh bone) grow larger than girls' bodies. Thus body sizes show differences according to age and gender (Simons. January 2001).

The standards of American Society for Testing and Materials (ASTM), National Institute of Standards and Technology (NIST) USA, or International Organization for Standardization (ISO) are not likely to be applicable to Pakistani children. In Pakistan, anthropometric studies to assess measurements for apparel sizing are rare. The major purpose of this study is to provide the measurement

differences that will further help to develop sizes for unisex and other apparel for 6-14 year old children.

### Methods

This study was conducted in Karachi, Pakistan's largest cosmopolitan city. Administratively, Karachi is divided into 18 for this study, 4 towns were selected randomly; 3 areas were selected from each selected town on the basis of the apparent income level of the residents i.e., low, middle and high income. One school was selected from each area. Students of 6 -14 years of age from high, middle and low income level areas were the population in this study. The survey team consisting of faculty members and post graduate students of Rana Liaquat Ali Khan Government College of Home Economics visited the selected schools for data collection. Children's measurements were obtained after seeking due permission from the school administration in each case. Height was measured from top of head down while standing barefoot on a hard flat surface in normal posture. Waist (WST), Hip , Crotch, Waist to Hip, Shoulder (SHL) , Chest, Sleeve and Wrist measurements were taken according to methods described by "Winifred-A; 1985 Metric pattern cutting for children's wear". SHL to Hip: and Low Crotch Trouser Waist measurements (LCTW) were calculated by using standard formulas referred from "The Apparel Design and production Hand Book":

S-H:  $0.1875 * ht - (Height/2)$  & LCTW:  $(Waist - Hip) + Waist$

The data were edited on SPSS (Statistical Programme for Social Sciences) from which the mean and mean differences were analyzed on the basis of factor height.

### Results

Data was collected from a total of 5,400 children but as the data was analyzed on the basis of height data from those children was discarded where less than 100 children were available for a particular 5cm interval height range. Modal age for each height range was calculated. Number of boys and girls in each height range and their modal age is given in Table 1.

Table 1: Median age of boys and girls for each height group.

Ht. Cms.	Sex			
	Boys		Girls	
	n	Median	n	Median
115	33	7	39	7
120	72	7	103	7
125	119	8	116	8
130	145	9	129	9
135	171	10	128	10
140	176	11	108	10
145	140	12	119	11
150	122	13	143	12
155	102	13	122	13
160	79	13	83	13
165	57	14	24	13
Total	1216	11	1114	10

Mean differences in various measurements of boys and

girls at various height ranges are given in Table 2... Major differences noted were that at similar heights the boys had larger waist and shoulder measurements but smaller hips and crotch measurements as compared to girls. The differences in hip measurements were more pronounced at height range 150 to 165 cm.

For most of the other body measurements differences among boys and girls were low thus unisex garments can be made for children if loose styles are chosen such as T shirts, baggy style shirts etc. and Low Crotch Trousers.

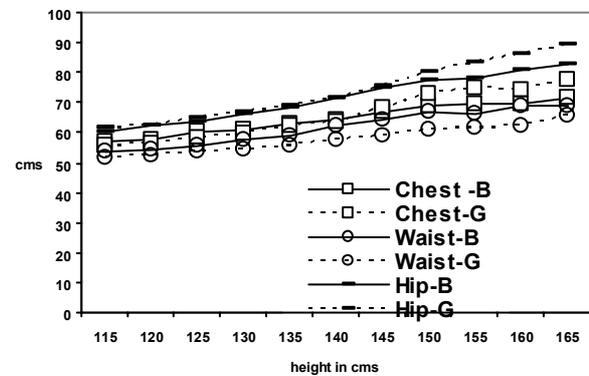
Trends in differences in measurements of boys and girls are given in Figure 1. These trends are also set on the basis of height that is from 115 to 165 cm having an average 5 cm interval. For measurement chest the trend of differences shows that from 115 to 140 cm of height boys and girls grow with same ratio whereas from 145 to 165 cm difference in growth gradually increases. Hip and waist shows marked difference in growth. In waist, differences started happening at height 130 to 165 cm and as the height increases the differences increase. In case of hip measurement from the height of 145 cm the differences are found till 165 cm and the difference in hip

have a higher ratio than any other measurement

### Discussion

The major purpose of this study was to provide measurements for children's unisex garments.

**Fig 1 Gender differences in measurements**



**Table 2: Mean difference in measurements (in Cms) of boys as compared to girls at each height group**

Measurements	Height Ranges										
	115	120	125	130	135	140	145	150	155	160	165
Waist	1.72	1.90	2.05	3.12	3.33	4.30	5.17	6.27	4.56	6.23	2.90
Hip	-1.46	-0.31	-1.42	-0.51	-0.66	0.33	-0.66	-2.22	-5.04	-5.06	-6.68
Waist to Ankle	-3.77	-3.32	-2.74	-2.75	-1.24	-3.16	-1.93	-4.92	-3.37	-4.97	-5.38
Crotch	-4.82	-4.68	-4.59	-4.39	-4.32	-7.78	-2.59	-4.18	-4.75	-3.45	-9.46
Waist To Hip	-1.97	-1.80	-1.90	-1.58	-0.74	-2.03	-1.34	-1.32	-1.37	-1.14	-1.97
Shoulder	0.67	0.95	1.02	1.42	1.09	0.93	1.14	0.90	0.87	1.32	1.63
Chest	1.01	0.72	1.87	1.25	0.48	0.59	-1.93	-3.92	-5.29	-4.48	-5.83
Sleeve	-0.47	0.52	0.73	0.40	1.07	1.15	0.31	-0.09	-0.02	1.64	0.44
Wrist	0.20	0.52	0.44	0.37	0.26	0.61	0.73	0.79	0.73	0.75	-0.14

The study shows marked differences among boys and girls in some measurements (especially hip and waist); however, unisex body measurements for loose style shirts and low crotch trousers can be analyzed. These body measurement differences vary with height.

In conclusion, these results can contribute to future studies on the development of new sizing system especially for unisex sizes. If the garment sizes are analyzed by considering these differences in body sizes it will reflect the actual growth of children in Pakistan.

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# Perception of Set Designers Regarding Role of Color in Designing Sets for Television Program

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## Abstract.

Set designer primarily, works with colors to create an environment and then to communicate the details of TV programs. The degree of color interplay is a critical element and is still the quickest and most direct means to produce visual representations of ideas of a program. Designers solve complex problems regarding color in set design by their knowledge and skill. This paper describes perception of set designers regarding color impact in TV program for creation of surroundings for consumers. The data was collected from 6 Karachi based channels. The questionnaires were distributed among the 96 designers who were associated to these channels and who worked on the sets of 4 different programs. This research study indicated that designers mostly prefer warm colors as warm colors are dark and their values dominate the environment of a set of a program. Interaction and manipulation of color create the optical illusion of space and area and attract our attention to the environment of a set. In conclusion this research describes that set designer work on a set with the collaboration of color, to create an environment and to communicate the details of TV program.

Key words: Color, Set designer, TV program, Space and size, Environment

## Introduction

"Set Design" means the creation and the organization of a "scenic" space in function of a specific media event. This involves designing on the basis of the technical and artistic needs that present many variables connected with the environment in which one is working and on the kind of use of the spectator. Designers use color to express ideas. Designers approach to color in relation to the spatial arrangement of components (Stones 2005). Set designer look at a bare stage they begin to realize all the elements and can easily manipulate to all aspects of the set (Rosenfeld, 1977). Research on design thinking also argues that designers serve to direct, order, clarify and record ideas" (Robbins 1994), or to inquire about shapes and ideas or buildings and spaces (Rowe 1984). Issues like isolation and enclosure in a limited space are the main complexities for a designer. (Patricia1998). Color is described with the directly observable features of the set as well as the spatial dimensions of size, space, and proportion. (Jacobson, 1996). Colors are perceived differently when seen against different colored backgrounds. This is where aesthetics plays its part in the

principles of vision: in the area of illusion space and size of sets (Vines, Margaret1, 996). As a designer works, choices of color and composition are made and adjusted in a continuous process until a satisfactory solution is reached.

With the proliferation of private channels there has been considerable increase in positions for set designers. Though at present set designing is being done by a variety of person ranging from people having no education for this task to those having specialized training for this purpose, it is expected that demand for trained set designers would increase. Graduates of Home Economics who specialize in interior designing can utilize their knowledge and skills in this field. Because of greater understanding of culture and details of various areas of daily life, Home Economists could be uniquely successful in designing a variety of sets according to consumers' satisfaction. However, it is also important to have a successful understanding of the views of persons who are practically working in the relevant area because it would expand their comprehension of the process of designing as applied in the specific professional area.

The purpose of this study is to find out the perception of set designers regarding color impact in TV program for creation of surroundings for consumers.

## Methodology

This study was conducted to assess the perception of the set designer regarding the color impact in TV program for creation of surroundings for consumers. For this purpose a descriptive design was used.

Pakistan is a sovereign country located in South Asia and the Greater Middle East. Pakistan is the sixth most populous country in the world. This study was conducted in Karachi .Karachi is the capital of the province of Sindh, and the most populated city in Pakistan. Located on the coast of the Arabian Sea, the mega city is the financial and commercial centre as well as the largest port of the country. Pakistan has its own cable or satellite TV Channels which can be seen in all parts of the world. Majority of these TV channels have their headquarters in Karachi. These channels have been producing a sizeable amount of decent TV programs.

The data was collected by the set designers working for Karachi based television channels. Out of the total of 26 channels, 6 channels were selected randomly. From each channel 24 set designers, working on the sets of four different programs, were recruited on the basis of their availability and willingness to participate in the study. Thus, a total size of the sample was 96. Questionnaire and interview method was used. Pre testing of the questionnaire was also done.

Data was first, entered in Epi data and then was transferred to SPSS (statistical package for social science) version 11.5.

## Results

Table 1, shows that most of the set designers use color as a tool of interaction to support the set design of a program. The majority of the designers responded that

each color has its own temperature. The basic advantage that is obtained by color is to make the set brighter. Dull effects can also be generated from color, which is usually not desirable. As far as the depth of a color is concerned, it also plays a vital role. Color may play a role in the creation of optical illusion, thus set may appear to swell or shrink depending on the color. Color degree shows significantly changes on sets of a program. A color may be seen just right in a creation of location and to grasp ant feature or possessions in relation to its surrounding of program.

**Table1. Set Designers' views about possible influences of colors in the creation of set design**

sn	Views about possible influences	n	%
1	Dull look	10	10.4
2	Bright look	65	67.7
4	Increase in depth	60	62.5
5	Increase in congestion	10	10.4
6	Increases in spaciousness	12	12.5
7	Change in apparent size	16	16.6
8	Set becomes attractive	33	34.3
9	Division of Space becomes easy	21	21.8
10	Makes the set interesting	22	22.9

**Table2. Set Designers' views about possible influences of warm and cool colors in the creation of set design**

sn	Perceptions about Color	n	%
Warm colors			
1	Brightens up the set	47	48.9
2	Makes the area looks small	18	18.7
3	Makes the area reflect more	14	14.5
4	None	6	6.2
5	All	11	11.4
Cool colors			
1	Creates Soothing effect	32	33.3
2	Make the set dull	32	33.3
3	Adds depth to the set	26	27.8
4	Others	6	6.2

Table2 indicates that Warm colors brighten up the set. In most of the programs warm colors create a strong and authoritative use of environment which makes a set to look warmer. Warm colors are considered advancing and having dynamic boundaries, which is the first thing to attract the eye. Warm colors are attention getting that can lend an accent to the sets. But according to some set designers, in many instances warm colors are tense and irritating. On the set cool color are considered to be receding if it does not command attention but provides a quiet and dull presence. Cool color can be used to cool down a warm area of the set (like news and talk shows, generally for social problems about youth, or political issues).So the liberal use of cool color can result in a cold,

sterile, or depressing atmosphere.

## Discussion

This study demonstrates set designers' holistic approach; they work on set in association with colors. Color's appearance, context, and expression used as the basis of interactive grammars. These grammars used to perform high level tasks such as legibility, categorization through logical justification and expression, which are foundation for the communication with surrounding of programs. Color sustains effort from the set to solve emerging problems and overcome various disturbances. The perceptions of set designers were not always the same as the knowledge students get from text books. The use of language and terminology by the designer was also indistinct and no-specific. This situation is understandable because the set designers were form varied backgrounds and had differing level of education and training. A large proportion had learnt only by experience and informal guidance of seniors. Thus graduates of home economics wishing to join this filed must learn to define their place within this profession. While they would need to understand the working style of current set designer and develop constructive professional relationships with them they should also be aware of their status and responsibilities as educated and trained designer. Enhancing and standardizing the field of set designing in accordance with local conditions and culture would definitely be one of their professional responsibilities as set designer. Further studies exploring current patterns of set designing would definitely help them in developing critical and constructive thinking (like color specialization, drafting, graphic design, layout plan, model building and space planning) fulfillment of their role as Home Economist set designers.

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## Teenagers Shopping Practices

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### Abstract

The purpose of the research study was to know about the teenagers shopping practices related to their clothing. The research was conducted in the Gulshan town of Karachi through a convenient sample of 150 (75 boys and 75 girls) teenagers. Several aspects of teenagers (boys and girls) shopping were examined and compared: they enjoy shopping or not, factors affecting their shopping, factors they consider while buying, whom they shop with, what are their views about shopping of the teenagers and from where they prefer to shop? The results revealed no difference between boys and girls; they both are very keen for their personal shopping and are affected by fashion and media. They need opportunity to shop for themselves according their own choice. In view of other researches it is concluded that Teenagers are the fastest growing population and they must be given the opportunity to shop for themselves according to their own choice.

Key words: Adolescent, clothes, shopping

### Introduction

Teenagers are the fastest growing population segments and they yield significant buying power (Mascarenhas & Higby, 1993; Kim et al., 2007). They are increasingly targeted by the marketers to execute successful growth strategies. They are more shopping sensitive and their market approach is highly sophisticated. Adolescents shopping practices also associated with their social life and personality development (Taylor & Cosenza, 2002; Darley & Johnson, 1993). There is a need to do research about teenager's behaviour patterns of shopping in Pakistan. And the main purpose of my research is to find out about the shopping practices of teenagers related to their clothing.

### Methodology

This study was conducted in one particular town of Karachi where most of the residing population is middle class. The subjects for this research were Teenage Boys and Girls 13-19 years, and a convenient sample was taken of 150 subjects from schools and through personal contacts. The data was collected through a self administrated questionnaire specially designed for this study. The data was analyzed on the SPSS version 11.5. The research is a comparative study between Teenage Boys and Girls. So;

To show the comparison of shopping interest between boys and girls; Cross Tabs and Chi-square tests are used

and to show the *percentages of the factors affecting* their shopping are also shown in tables with their comparison.

### Results

Most of the respondents (47.3%) were of views that shopping is a pleasurable activity for them, most of them enjoy shopping sometimes (39.3%), and while very few of them (13.3%) do not enjoy shopping.

Some of the Teenagers shop independently (16%), and most of them shop sometimes independently (62%), while very few of them do not shop for themselves (22%), they are dependent on their parents to shop for them and they are satisfied of what their parents shop for them.

Overall, most of the respondents shop with their parents (70.4%), and friends (17.3%), while very few of them shop with their siblings (6.1%) and relatives (6.1%). In relation to shopping alone or with friends or family, a statistically significant gender difference was noted that girls shop more frequently with their parents (82%) and less often with friends (5.4%) as compared to boys (54% & 33% respectively).

Most of the teenagers followed the current fashion (34.9%), and most of them follow it sometimes (56.4%), while very few of them do not give importance to the current fashion (8.7%) and do not apply it in their shopping. The teenagers think that fashion is a latest trend (40%), while the others are of views that fashion is a style that changes frequently (27.6%), it is an accepted style (15.2%), or new generation's way of adorning themselves (17.2%).

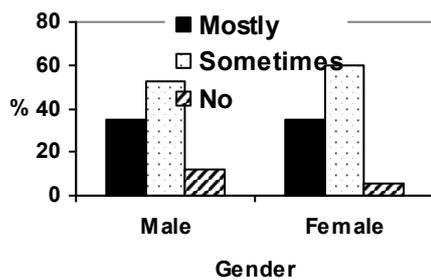
They are of views that fashion is an important factor which affects their shopping and it has changed the definition of shop

Percentages of teenagers who consider any particular factor while shopping are given in table 1. Personal likes and dislikes, Personal satisfaction, Color and design, Quality of material/fabric, Comfort and ease were the factors considered by more than half of the male and female teenagers. Girls consider a larger number of factors while shopping and consequently for more most factors percentages of girls who consider that factor was higher.

Though the amounts differed, all the teenage respondents get their monthly allowance. (average =1500) and some of them usually spend 10-15 % (28.9%) of their monthly allowance some spend up to 25 % (44.6%) while some of them more than 50% (26.5%).

More than half of the teenage respondents think that they must be given the opportunity and enough money to shop according to their own choice as it will increase confidence in them, while very few of them think that they should not be given the opportunity and enough money to shop independently as it will increase bad habits in them and they will be wasting their money on bad habits like smoking etc

**Fig 1. Percentage of Teenagers following fashion**



**Table 1. Percentage of subjects who consider particular factors while shopping**

	Male %	Female %	Total %
Personal likes and dislikes*	60.0	75.7	67.8
Color and design*	50.7	65.8	58.1
Quality of material/fabric	52.0	61.6	56.8
Personal satisfaction	54.7	58.9	56.8
Comfort and ease	50.7	58.9	54.7
Price	48.0	58.9	53.4
Your personality	46.7	54.8	50.7
Brand	48.0	46.6	47.3
Season and occasion*	38.7	56.2	47.3
Labels	42.7	51.4	46.9
Current fashion	42.7	50.7	46.6
Friends	32.0	38.4	35.1
Simplicity	26.7	37.0	31.8
Reliable shop	28.0	26.0	27.0
Modesty	20.0	32.9	26.4
Window display	22.7	23.3	23.0
Magazines*	10.7	34.2	22.3
Family	16.0	28.8	22.3

\*Difference between Boys and Girls statistically significant at least At  $P < 0.05$  level

### Discussion

The research study shows that teenagers enjoy shopping and they want to shop alone according to their own choice and it is also shown by many researches also (Darley & Johnson, 1993). In other countries it has been observed that teenagers are influential shoppers, they are influenced by their family and friends for their shopping, and also get their ideas mostly from media and magazines (Mascarenhas & Higby, 1993; Parker et al., 2004) however in this research study it was seen that they are not dependent on any particular of idea for them but they prefer their personal choices on any source, but they apply fashion as per required according to their choice. The main difference in this research of teenagers shopping was that they want someone to accompany them while doing shopping; it can be their parent's relatives or

friends. They usually get their money from their monthly allowances given by their parents, while the teenagers of the other countries earn their money mostly by doing jobs and spend money on shopping from their own earnings (Alhabeeb, 1996).

This research would help the parents to understand their children's choices and views about shopping as they want to shop alone according to their choice. This research will also help the marketers to know about the teenagers attitudes towards shopping so they will target the teenage consumers and their parents as teenagers usually shop with their parents for better ideas and better results of their shopping.

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### Association of adequacy of diets with the academic achievement of students

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#### Abstract

The objective of this study was to determine the association of dietary adequacy with academic achievements of students. The subjects in this study were 228 girls divided into two groups 114 from low achievers and 114 from high achievers. An interview come questionnaire and the food frequency form was used. The academic performance of students was only associated with three food groups, over all the result shows that diet was not adequate in both group of high and low achivers. The results of this study suggest that intake of better diet is recommended.

Key words: Nutrition, adolescents, academic performance

### Introduction

Good academic performance of students is a cause of concern for both the students and their parents. (HY P Kim et al., 2003). The relation between dietary adequacy and academic performance of students has been widely investigated and it has been shown that academic performance of students is strongly associated with their dietary adequacy. (Ud Din Z & Paracha P, 2003)

The objectives of this study are to determine the association of diet with academic achievements of students.

### Methodology:

This study was conducted in Karachi at Rana Liaquat Ali Khan Government College of Home Economics, students of 2<sup>nd</sup> year; B.Sc. 1 and B.Sc. II were the participants of this study.

A total of 228 subjects were selected. The criteria for selection were on the basis of highest and lowest academic achievers. From each year a total of 76 students were selected, 38 were highest achievers and 38 lowest achievers were selected according the marks obtained in the last examination. The data was collected to collect information about the association of dietary adequacy on the academic achievements of students. Data regarding diet, academic record was collected. Diet related data was collected by the participant through food frequency questionnaire method academic record was collected from the office records with in the college. Previous year marks was used an indicator in this study.

Adequacy of the diet was determined by comparing the intake of food with the recommended serving. Fat and sugar intake was analyzed as high, moderate and low categories, students having 5 or more then 5 fried items per day are graded as high where consumption of 2 to 3 items are graded as moderate and 1 and below 1 fried food item is graded as low. As for sugar intake, 3 or more then 3tsp is graded as high, 1 to 2tsp is graded as moderate and below 1tsp is graded as low.

15<sup>th</sup> version of SPSS was used to analyze the data and chi-test was used to analyze the association between diet adequacy and academic achievement.

### Results:

The percentage of girls taking adequate diet was higher (24.5%) among the high achievers as compared to low

achievers (8.7%) (P= 0.001). Frequency of adequate intake of bread and cereal (P=0.011), milk (P=0.024), and meat group (P=0.000) was higher among the high achievers comparative to the low achievers (table 1). Sugar and Fat intake was similar in both the groups. (P=0.495) (Table 2).

The diet of both the groups of high and low achievers was not adequate but the diet of high achievers as comparative to low achievers was better.

**Table 1. Consumption of Foods by High and Low Achievers**

FOOD GROUPS	Academic Performance	Adequate	Inadequate
		%	%
Bread and Cereal	High	50.9	49.1
	Low	34.2	65.8
Milk	High	16.7	83.3
	Low	7.0	93.0
Meat	High	26.3	73.7
	Low	7.9	92.1
Fruit	High	0	100.0
	Low	0	100.0
Vegetable	High	0.9	99.1
	Low	0	100.0

### Discussion:

In this study diet quality was found to be associated with the academic performance. However while other researches show that all food groups effect the academic achievements (Quigley and Watts, 2005; Zaini MZ, Lim CT Low WY Harun F., 2005) but in our study fruit fat and sugar intake was similar in both the groups. This study needs to be replicated in a larger sample.

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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.
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##### Journal Article:

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

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## **Guidelines for Authors**

**PAKISTAN HOME ECONOMICS ASSOCIATION**