

IJHE

ISSN 1999-561X

International Journal of Home Economics

Volume 5 Issue 1 2012



IFHE is an international Non Governmental Organisation (INGO) in consultative status with the United Nations (ECOSOC, FAO, UNESCO, UNICEF) and with the Council of Europe

**INTERNATIONAL FEDERATION
FOR HOME ECONOMICS**

This refereed journal is an official publication of the International Federation for Home Economics. Electronic access via IFHE website for subscribers and members only: www.ifhe.org

IJHE editor

Donna Pendergast Australia
E-mail: editor@IFHEJournal.org

Book review editor

Donna Pendergast Australia
E-mail: editor@IFHEJournal.org

Editorial administrator

Joy Reynolds Australia
E-mail: editor@IFHEJournal.org



International Federation for Home Economics
Kaiser Friedrich Strasse 13
53113 BONN
Germany
Tel: 0049 (0) 228 9212590
Fax: 0049 (0) 228 9212591
E-mail: office@ifhe.org
Web: www.ifhe.org
ISSN 1999-561X

International Journal of Home Economics

IJHE Editor

Professor Donna Pendergast, PhD
School of Education and Professional Studies
Griffith University
Gold Coast, Australia
Philosophy, research, education

Editorial Board Members

Dr Mona Sharaf Abdelgalil
Department of Home Economics, Alexandria University
Alexandria, Egypt
Food management; consumer studies; household activities and everyday life

Associate Professor Jette Benn
Institute of Didactics, The Danish School of Education, Aarhus University
Denmark
Home economics education; Home Economics philosophy and history; consumer and nutrition education

Dr Vassiliki Costarelli
Human Ecology Laboratory, Department of Home Economics and Ecology, Harokopio University
Athens, Greece
Nutrition and cancer; nutrition in childhood and adolescence; disordered eating attitudes and behaviours; nutrition in pregnancy/ postpartum depression; nutrition and the athlete

Professor Meei-Ruey Hsu
Department of Tourism, Ming Chuan University
Taiwan
Curriculum and instruction; gender education; hospitality education; teacher education

Associate Professor Amoroso Catherine Leslie
The Fashion School, Kent State University,
Ohio, United States of America
Historical and biographical research, apparel and textiles, entrepreneurial activity, consumer behaviour, arts and crafts (or handicrafts)

Professor Sue LT McGregor
Faculty of Education, Mount Saint Vincent University
Halifax, Nova Scotia, Canada
Consumer and global citizenship; consumer studies, policy and education; Home Economics leadership; Home Economics philosophy; transdisciplinary and integral inquiry

Kathryn McSweeney, MEd
St. Angela's College
Lough Gill, Sligo, Ireland
Educational assessment; empowerment and advocacy studies; social marketing; teaching strategies in textiles studies; textile and embroidery samplers

International Journal of Home Economics

Associate Professor Seema Puri

Department of Nutrition, Institute of Home Economics, University of Delhi
India

Aging; food security; infant and child nutrition; institutional management; nutrition

Dr Janet Reynolds

Principal Education Officer, Teaching & Learning, Department of Education & Training
Queensland, Australia

Professor Kaija Turkki

Faculty of Behavioural Sciences, University of Helsinki
Finland

Consumer citizenship; FCS in higher education; global education; Home Economics in higher education; Home Economics philosophy; household activities and everyday life

Dr Hena Yasmin

Department of Home Economics, Faculty of Agriculture
Swaziland

Child care and development; consumer education; education; HIV/AIDS; household technology; nutrition

Professor Taemyung Yoo

Department of Home Economics Education, College of Education, Gyeongsang National
University
Korea



The International Journal of Home Economics gratefully acknowledges the assistance and support of the Griffith Institute for Educational Research.

Editorial

Donna Pendergast 1

Peer reviewed papers

A framework for investigating spiritual health and wellbeing in Home Economics
Jay Deagon & Donna Pendergast 3

Factors Associated with attendance of women in antenatal care visit/classes in Ile Ife,
Osun State, Nigeria
Beatrice Ogunba, Grace Ogbimi, & David Oladeji 18

Welfare and Child Support Influence on Maternal Health and Wellbeing among Women
in Abeokuta, Ogun State, Nigeria
David Oladeji & Kudirat Bakare..... 29

Aesthetic Preferences for Textile Colour and Print Patterns between U.S. and Japanese
Consumers
Makiko Takagi, Molly Eckman, Kenneth Tremblay..... 40

Cook It Up!: Formative evaluation of a community-based cooking program for at-risk
youth in London, Ontario
Heather M Thomas & Jennifer D Irwin..... 64

Functional apparel for cosmetologists: User assessment of developed product function
Dorothy Thompson & Elizabeth U Anyakoha 84

Journal information

Notes for contributors..... 100

Publication in IJHE provides wide exposure to journal articles and adds to the professional literature base of the field. Theoretical papers, literature reviews, and a wide range of genres along with research papers are invited for publication in the journal. As editor, I strongly encourage submissions to the journal. The papers included in this issue of the journal represent a diverse range of genres but share a common thread—a strong link to enhancing wellbeing.

The next issue of the IJHE will include a selection of the best refereed papers presented at the IFHE XXII World Congress focusing on Global Wellbeing which was held in Melbourne, Australia from 16-21 July 2012.

As always, the articles have undergone rigorous, double-blind review, and are adding to the professional literature base of the field.

Professor Donna Pendergast, PhD
Editor, IJHE

A framework for investigating spiritual health and wellbeing in Home Economics

Jay Deagon, Donna Pendergast

Griffith University

Abstract

Spiritual health and wellbeing are accepted as foundations of Home Economics and health education, yet they remain elusive in terms of conceptualisation. This paper explores synergies between Home Economics and contemporary health and education literature to provide a new and unique perspective for exploring spiritual health and wellbeing in research and practice. The purpose of this work is to clarify spiritual concepts so that home economics professionals might have a framework for better understanding taken-for-granted foundations of the field.

Keywords: spiritual health and wellbeing, home economics, social enactment, sustainable development, diversity

Informing literature

‘Spiritual health and wellbeing’ is a phrase often used in the field of health and home economics, yet it is an elusive, slippery concept. Professionals may be unaware when they read the words *spiritual*, *spiritual health* and *wellbeing* in health and education policy and literature the extent to which the terms (intended or unintended) convey with them an extraordinary amount of diverse, yet taken-for-granted meaning. As an internationally recognised curriculum subject, home economics offers a unique and multidimensional platform (Walker, 1971) from which to study spiritual health and wellbeing, and the subsets of this phrase. The purpose of this article is to clarify how spiritual health and wellbeing is positioned within home economics by developing a diverse and inclusive framework for use in home economics research and practice.

Various terms and concepts convey similar meaning

There is considerable issue with the number of terms that are used within the field to describe and define similar health outcomes for people. A search of the literature from within the fields of home economics, education, health education, public health and health promotion finds many different terms that convey similar notions. To illustrate how terms vary, an Australian education example can be taken from the *Melbourne Declaration on Educational Goals for Young Australians* (December 2008) (MCEETYA, 2008) where the terms *spiritual development and wellbeing* (p. 4), *spiritual wellbeing* (p. 9) and *the spiritual dimension of life* (p. 13) are all used as aspects for consideration in the overall goals for teaching and learning in Australian schools. These are separate concepts with similar intent. It is understandable that educators may become confused.

Furthermore, within the selected literature reviewed, other terms and concepts used include holistic health, spirituality, spiritual health, spiritual wellbeing, (Bensley, 1991; Fisher, 2008; Hawks, 2004), the spiritual health dimension (De Souza, 2006; Hettler, 2009; McGregor, 2010; O'Connell & Skevington, 2007), spiritual intelligence (Hyde, 2004), spiritual literacy (Burrows, 2006; Watson, 2006), spiritual development (Crossman, 2003; Hill, 1989; Petersen, 2008; Roehlkepartain, Benson, King, & Wagener, 2009), wellbeing, wellness, the human condition (Fisher, 2008; Henry, 1995; McGregor, 2010), happiness, harmony, meaning and purpose in life, quality of life (Baldwin, 1996; World Health Organisation, 1946, 1998), connectedness, supportive environments (Chuengsatiansup, 2003; Crawford & Rossiter, 2006; De Souza, 2009; Hawks, 2004; Hyde, 2004; McGregor & Chesworth, 2005; World Health Organisation, 2011) and so forth. Each of these terms and concepts has its own internal arguments, underpinning bodies of knowledge and championing authorities.

Taking this diversity into consideration, hyper-specialisation holds dangers. Within these fields of literature, however, the terms and concepts generally stem from the same pragmatic purpose. Home economists, social scientists, and educators who work with people are investigating and acknowledging the intricate ways that human life intertwines on the planet and the delicate balances needed to ensure sustainable human existence (Delors, 1996; Raskin, 2008; World Health Organisation, 1946). Therefore, for this paper, *spiritual health and wellbeing* is used as the centrally organising construct because it encompasses many of these current ideologies that are informed by existing theory. Furthermore, this triadic concept (that is, spiritual, health, wellbeing) is a culmination of suggested terminology used within home economics (McGregor, 2010; McGregor & Chesworth, 2005). As an overarching concept, using spiritual health and wellbeing as a whole construct has the potential to unite these three fields of research into human and planetary health (Chuengsatiansup, 2003; Fisher, 1998, 2008; Hawks, 1994, 2004; Hawks et al., 2007; McGregor, 2010; Varder, 2006). *Spirituality* and *the spiritual health dimension* are also used as general terms in this article. The next task is to set out how to conceptualise spiritual health and wellbeing so that we can then move to its positioning within home economics contexts.

Positioning the issues: Spirituality, religion, globalisation and technology

Educators may read about spirituality in official policy or unofficial literature only to gloss over it with *Apathy, Acrimony or Accord* (Hill, 1989). Depending on the reader's underpinning assumptions, this may inadvertently devalue its purpose or aim within the context in which it is written. By way of an Australian education example of this uncertainty in terms, Crawford and Rossiter (2006) note that:

... for many educators, the terms [spiritual health and wellbeing, spiritual development, the spiritual health dimension] are obviously significant, but still somewhat ambiguous as regards their relevance to public education. This is because spiritual and moral development have not yet been conceptualised clearly enough to be accepted as more than a nominal goal (p. 13).

Spiritual health and wellbeing is a complex notion. Spirituality in health and education has a history of inciting passionate and divisive argument. Discussion can swing from reticence to strong opinion. Yet, if the concept remains differentially understood and endorsed, human spirituality and its relationship with education and the human condition will remain tenuous. One reason for the challenge of understanding and adoption is the possible connection between traditional religion and spirituality. For the purposes of this discussion, there are distinct differences between these concepts. An emphatic distinction between spirituality and religion is necessary "not to discredit one and privilege the other but rather to provide a context for a discussion of spirituality and education that is not confused by the discussion of religion and education" (Burrows, 2006, p. 3). Within the proposed framework presented in this article, religion is situated within communal and transcendental aspects of human experience. This will be discussed at various points within this paper. Significant concepts such as religion cannot be ignored in social science, but rather need to be respected, rendered accessible and applicable to all human participants, socially and culturally diverse and inclusive of all and any belief systems.

Globalisation and technology are substantially identified as having major impacts on understandings of spirituality in health and educational contexts. Impacts are occurring across secular and government-funded schools, religious and non-religious institutions within western and eastern cultures (Best, 2000; Crossman, 2003; Deagon, 2009; Fisher, 2001; Fleming & Evans, 2008; McGregor & Chesworth, 2005; Nickols et al., 2009; Wong, 2005). Spiritual concepts in education can mean many different things (Fisher, 2008; Hill, 1989; McGregor & Chesworth, 2005; Tacey, 2003). Furthermore, multiculturalism also impacts on understanding the term spiritual within local, national and international contexts (Agnello, White, & Fryer, 2006; De Souza, 2006; Organisation for Economic Co-Operation and Development, 2001; Watson, 2006; Yates & Young, 2010). As a result, specialised content knowledge contained in curriculum or policy may not be easily interpreted or amenable to all situations. We need a clear direction to ensure that interpretation is trustworthy, and not misunderstood, glossed over or ignored.

To illustrate historical and hegemonic influences, spiritual concepts may once have been more simply understood and interpretable within societies governed by a dominant religious or political agency, for example, patriarchal, primarily Christian, postcolonial, British-ruled Australia (Hickling-Hudson, 1999; McGregor, Pendergast, Seniuk, Eghan, & Engberg, 2008; Nickols et al., 2009; Pendergast, 2001). However, because of the contemporary capacity to move people across national and international borders (geographic and conceptual), access to unrestricted information and opinions on the Internet, together with an awakening of social conscience about respecting and embracing the diversity of different cultures (Delors, 1996), people may have considerable difficulty accommodating and comprehending the vast array of new and complex meanings of the way the word spiritual is being recontextualised.

Recontextualisation is an important concept because it explains how spiritual concepts produced in 'the real world' (for example, dominant discourses on religion, or nursing

terminally ill cancer patients or 'new aged' spirituality) are altered for specific purposes by specific audiences (Gee, 2005; Tacey, 2003). Singh (2002) explains that:

... a discourse is moved from its original site of production to another site, where it is altered as it is related to other discourses. The recontextualised discourse no longer resembles the original because it has been pedagogised or converted into pedagogic discourse (p. 573).

Singh (2002) is specifically referring to education but this knowledge has been recontextualised here to apply to a home economics site. However, *the rules* still apply. Recontextualised knowledge is synthesised, manipulated, politically compromised and individually expressed until it has been altered from its original source *and* possible meaning or intent. Generalised meaning may still apply but because knowledge has been recontextualised to apply to contemporary discourses its meaning may become obscured. It was necessary to seek clarification from *the real world* (for example, the United Nations) and examine overarching policy to see where in practice human spirituality was included and why.

Rationale for situating spirituality within global population health

The framework for spiritual health and wellbeing constructed and presented here directly addresses the United Nations' (UN) Decade for Education for Sustainable Development 2004-2014 (ESD) directive. The United Nations Educational Scientific and Cultural Organisation's (UNESCO) goal is to "help people to develop the attitudes, skills and knowledge to make informed decisions for the benefit of themselves and others, now and in the future, and to act upon these decisions" (UNESCO, 2009, para 3). The International Federation for Home Economics (IFHE) make a similar call to action and state that the purpose of home economics is "to achieve optimal and sustainable living for individuals, families and communities" (IFHE, 2009, p. 1). If we are to develop the skills, attitudes and knowledge to achieve optimal and sustainable living for all people, then this urgent call for "mass social learning" (Sterling, 2004) asks us all to (re)consider what it means to be a human being living on the planet Earth. How is spiritual health and wellbeing to be positioned within this directive? This paper maps the knowledges that provide a rationale that draws spiritual health and wellbeing into a more comprehensive picture of health and education. By examining the reasons why spiritual health has been neglected as a research subject this paper proposes ways to move forward.

In health education, the most widely acknowledged model for understanding holistic health and wellness is Dr Bill Hettler's Six Dimensions of Wellness model, represented as a hexagon covering social, intellectual, spiritual, occupational, emotional and physical health (Hawks, 1994; Hettler, 2009; McGregor, 2010). In later years Hettler (2010) added an environmental dimension to his model and on his website he reflects:

[O]ne of the common modifications to my original hexagonal model is a seven dimensional model in which the environmental focus, which was always part of the social dimension, has been added to the original six as a separate dimension... years ago, I proposed that the environment is so important to the

survival of all species that we should really create a six dimensional model focused on the environmental wellness of the planet.

Contrary to Hettler's altruistic vision of holistic health and wellness of whole persons, families, communities and the planet, past separations of *health* into *dimensions* has left a wide gap or lacuna in research into spiritual health and wellbeing (Hawks et al., 2007, p. 3). Hawks and colleagues (2007, pp. 2-3) report that in a six-year period from 2000 to 2006 only 1% of academic literature referred to spiritual health as opposed to 79% of research attention on physical health. This stark contrast has been attributed to the biomedical model of health and its ease of measurability which dominates health literature (Hawks, et al., 2007). The more measurable may drive out the more meaningful.

Science and disconnection are the important concepts here. In the past science has been mistaken as the genus rather than as a species of research. "Science, as the vehicle through which to investigate and explain existence over the last four hundred years, disconnected humans from their natural, holistic, and spiritual belonging" (Agnello et al., 2006). Crawford and Rossiter (2006) make the observation that scientific practices have reduced the human being into measurable packets of knowledge to the point where we have lost sight of natural, holistic and spiritual knowledges.

Power and control

Rabinow and Rose (1994) compiled and edited a collection of Michel Foucault's (1926-1984) *Essential Works* between 1954 and 1984. Using their book as a reference, essential ideas have been synthesised to give a brief overview of why Foucault's philosophy is pertinent to this paper. Foucault provides a method for exposing how events and philosophies continue to influence human spirituality in contemporary society. Specifically useful for this paper is Foucault's belief that, through the centuries, politics and religion have exercised power to structure and control population health and education systems (Foucault, 1974 as cited in Rabinow & Rose, 1994). Foucault suggested that these governing bodies played a significant role in directing population health and education interventions (Foucault 1974, 1978 as cited in Rabinow & Rose, 1994).

According to Foucault, medicalisation of the human condition was necessary for both individual and population health because standardisation in measurement and observation could then fix social health issues. These measurement and observation methods reduced human health issues into categories of "fixable problems". Importantly, Foucault recognised then, that now is the time to synthesise knowledge that is available to us through contemporary means and put whole human beings back into their relative contexts.

Accordingly, there has been a shift away from compartmentalised versions of health. New ways of assessing health that include the spiritual health dimension as a population health phenomenon are now being investigated (e.g., Chuengsatiansup, 2003). The World Health Organisation (WHO), for example, recognises that *health* takes place in a wide variety of contexts. The spiritual health dimension caught the attention of the WHO for its potential to empower and motivate individuals, families and communities into addressing health inequities by specifically targeting the *spiritual* needs of populations (Varder, 2006). This

present paper uses WHO's definition of health as "a state of complete physical, social and mental wellbeing, and not merely the absence of disease or infirmity" (WHO, 1946, p. 1). Use of the phrase "a state of complete... wellbeing" is often criticised for its narrow informing view and unattainable ideological aims. However, this still remains the WHO's definition and for this article, "a state of complete... wellbeing" denotes a holistic vision of health.

The WHO also acknowledges that the spiritual health dimension is increasingly recognised as an important part of holistic good health (WHO, 1998, p. 1). As contained within the WHO's *Health Promotion Glossary* (1998), the spiritual dimension is considered a part of the "personal beliefs domain" to "quality of life." Quality of life is defined as an:

...individual's perceptions of their position in life in the context of the culture and value system where they live, and in relation to their goals, expectations, standard and concerns. It is a broad ranging concept, incorporating in a complex way a person's physical health, psychological state, level of independence, social relationships, personal beliefs and relationships to salient features of the environment. (WHO, 1998, p. 17)

There are six domains recognised in this quality of life definition. They are physical (e.g., energy, exhaustion), psychological (e.g., self-efficacy, positive or negative feelings), level of independence (e.g., freedom of movement, mobility, co-dependency), social relationships (e.g., inclusion in positive social support), environment (e.g., accessibility to health care, geography, sustainability and pollution) and finally personal beliefs/spirituality (e.g., meaning in life). The WHO Constitution asserts that there are nine principles that are "basic to the happiness, harmonious relations and security for all peoples" (WHO, 1946, p. 1). Of particular interest to this paper are the first two principles; namely, the definition of health as discussed above and the second principle that states "the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition". By extension, the WHO is acknowledging that the spiritual health dimension is distinct and separate from religion, but still an important aspect of the health of all peoples.

Finding ways that spirituality can inform population health assessment, Chuengsatiansup (2003) writes "spirituality is an emergent property of a complex living system and exists only when such a system is examined in a holistic manner" (p. 3). Quality of life and human spirituality are intricately and inseparably connected to holistic human health (Baldwin, 1996). For this reason, many organisations are being deeply challenged to research ways to *rebalance* human beings with themselves, each other and the planet and to recognise the impacts of their actions within larger realities and global consequences. This captures the *essence* here of spiritual health and wellbeing.

Spiritual health and wellbeing: breaking down a complex construct

To organise the framework into manageable packages of knowledge, Fisher's (1998, 2008) four domains model and Deagon's (2009) three Discourse models provide the conceptual framework for understanding the whole construct of spiritual health and wellbeing. Juxtaposed with the *essence* of meaning referred to above, simply, spiritual health and

wellbeing considers the quality of relationships a person has with themselves, others, the living and non-living environment, and a transcendental other or acknowledgement of a larger reality or set of realities (De Souza, 2009; Fisher, 2008).

Fisher's four domains model of spiritual health and wellbeing

Developed across twenty years' studying Australian and British primary school, high school and university populations, Fisher's (1998, 2008) four domains model (See Figure 1 below) categorises these relationships into personal, communal, environmental and transcendental. *Progressive synergism* is proposed by Fisher (1998, p. 28) to explain the interrelationships between these domains as a means of understanding that spiritual health and wellbeing is developed over time and with life experience. As an individual develops within each domain the next domain is embraced. Caution must be taken with this notion because it does not claim to provide an absolute explanation of development for every individual. Fisher (2008, p. 13) clarifies this point as follows:

[W]hen relationships are not right, or are absent, we lack wholeness, or health; spiritual dis-ease can grip our hearts. The quality of relationships in each of the domains will vary over time, or even be non-existent, depending on circumstances, effort and the personal worldview and beliefs of the person.

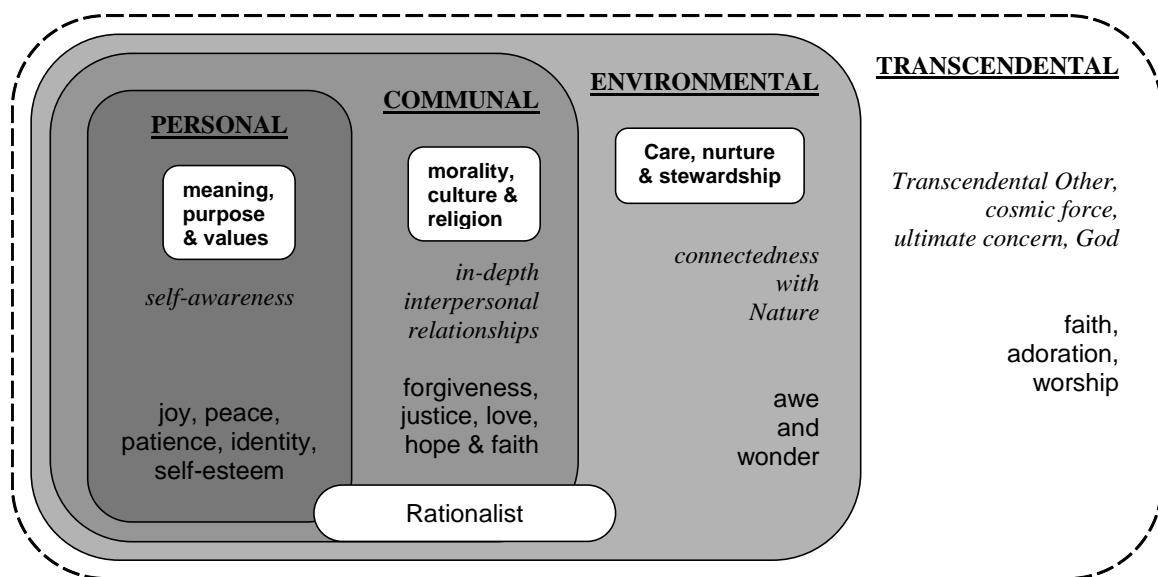


Figure 1: Fisher's (1998, p. 28; 2000, p. 40; 2008, p. 12) four domains model of spiritual health and wellbeing that represents spiritual health expressed by an individual as they move in, across and between each domain of wellbeing represented as a process of progressive synergism. Used with permission.

The personal domain refers to self-knowledge. The process of developing self-awareness affects values, personal identity, meaning and life purpose. The communal domain refers to how an individual relates to and interacts with other human beings. The environmental domain refers to an awareness of other living creatures and non-living environments and includes a sense of awe and wonder in the natural world. The final domain is the transcendental domain. Transcendence is defined by Fisher (1998, p. 191) as meaning 'a relationship with some-thing or some-One beyond the human level' and includes 'the universe as a source of Mystery'. Conceptualising spiritual health and wellbeing into these four domains provides a balanced framework that does not lean towards any specific religious or belief systems but that takes into consideration the multifaceted nature of health (Fisher, 2000, 2008). Religion and all other belief systems are engulfed within the communal domain (Fisher, 2008). This is important because using this framework to categorise spiritual health and wellbeing may be applied cross-culturally and across many different geographies, contexts and social situations.

Within the education and health academies specialising in the *spiritual health dimension, child and adolescent spiritual development* and *spiritual wellbeing* it is generally accepted that *spiritual* is not synonymous with *religious* (Crawford & Rossiter, 2006; Crossman, 2003; De Souza, 2006; Hawks, 1994; Hawks, et al., 2007; Tacey, 2003). According to Hill (1989) spirituality presupposes religion. Religion can be encompassed within dogmatic, faith-based and communal aspects of spirituality (Crawford & Rossiter, 2006; Fisher, 2008; Tacey, 2003). Religion cannot exclude notions of spiritual; however, spirituality is not dependent upon religion to give it meaning. Therefore, spirituality may be considered as an individual or existential concept whereas religion is a socially constructed artefact.

Synergies between home economics and spiritual health and wellbeing

Spiritual concepts informed home economics as early as 1902 at the Lake Placid conference (McGregor, 2010c, p. 12). Since then, human spirituality, the spiritual dimension, spiritual health, spiritual wellbeing and spiritual wellness have entered home economics rhetoric (Henry, 1995; McGregor, 2010c; McGregor & Chesworth, 2005; Nickols et al., 2009). However, library and databases searches reveal that there is minimal secularised education literature and even less home economics-specific evidence-based research on the concept of spiritual health and wellbeing. While the whole concept remains elusive, both Henry (1995) and McGregor (2010c) believe that spiritual health and wellbeing is worthy of research attention because of its implications for understanding a holistic approach to health and the human condition.

Context is crucially important. The ways of interpreting spiritual concepts will vary from reader to reader and it is therefore important to give due consideration to situated meaning (Gee, 2005). This article is situated within a home economics context. As a curriculum subject, home economics is a vital "hands on" subject that develops valuable life-long learning attributes (Ma & Pendergast, 2010). There are valuable harmonies between home economics and spiritual health and wellbeing. Figure 2 represents these synergies and is adapted from key concepts contained in the IFHE Position Statement (2008) together with a simplified version of Fisher's (1998, 2008) four-domains model for conceptualising spiritual health and wellbeing.

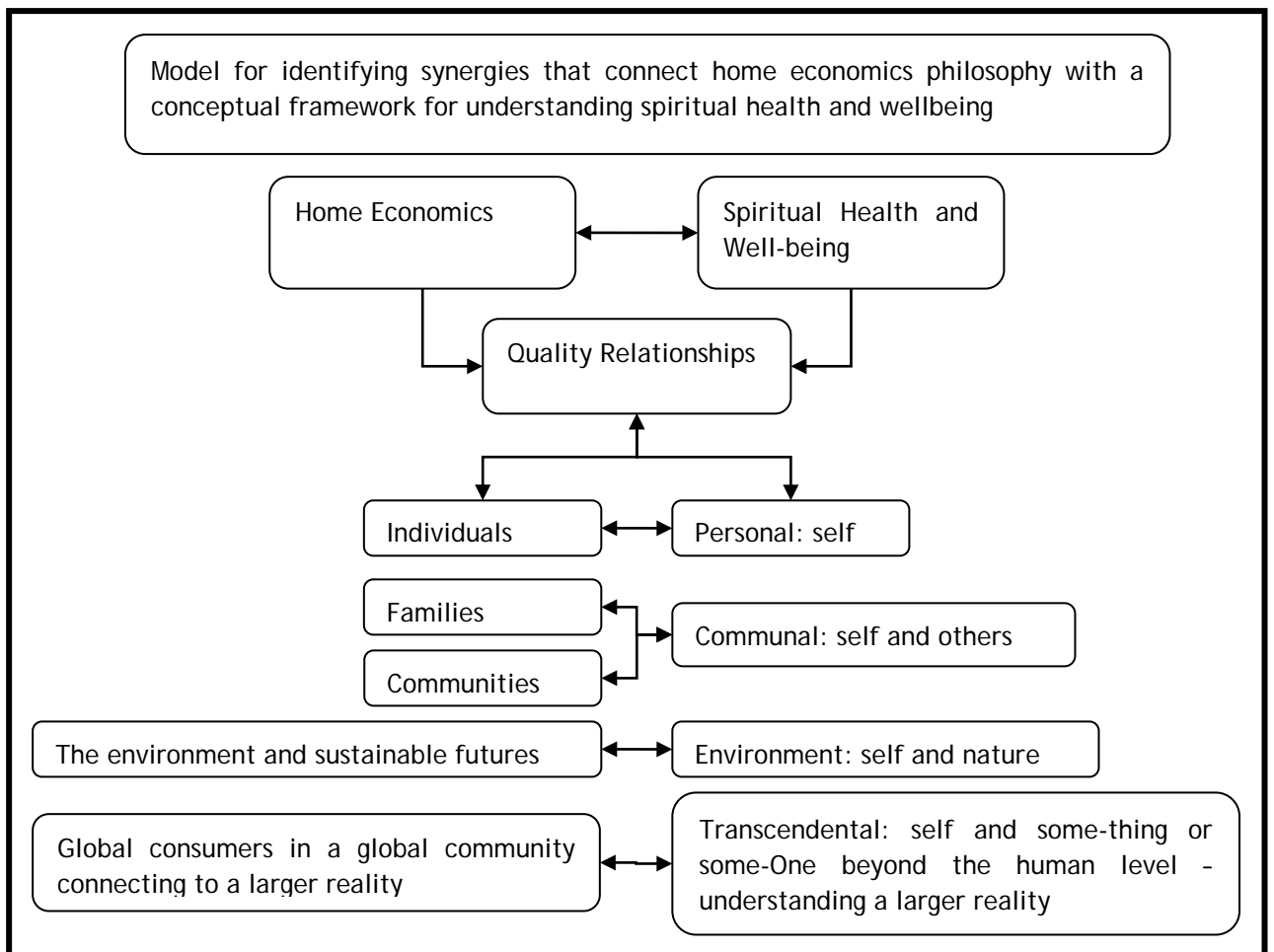


Figure 2: Synergies between home economics and an adapted summary outline version of Fisher's (1998, 2008) conceptual framework for spiritual health and wellbeing

The IFHE (2009, p. 1) position statement clarifies the boundaries of home economics as:

- an *academic discipline* to educate new scholars, to conduct research and to create new knowledge and ways of thinking for professionals and for society
- an arena for *everyday living* in households, families and communities for developing human growth potential and human necessities or basic needs to be met
- a *curriculum area* that facilitates students to discover and further develop their own resources and capabilities to be used in their personal life, by directing their professional decisions and actions or preparing them for life

- a *societal arena to influence and develop policy* to advocate for individuals, families and communities to achieve empowerment and wellbeing, to utilise transformative practices, and to facilitate sustainable futures.

To give an indication of multidisciplinary and transdisciplinary topics that currently inform home economics practice around the world, Table 1 below (entitled *Identifying the scope of projects available to students applying home economics curriculum, practices and principles demonstrating the significant contributions from interdisciplinary fields of knowledge*) represents a selection of bodies of knowledge and topics available to home economics students worldwide as they relate to common curriculum, practices and principles. This is not an exhaustive but an indicative list of the bodies of knowledge represented in home economics globally (Nickols et al., 2009).

Table 1: Identifying the scope of projects available to students applying home economics curriculum, practices and principles demonstrating the significant contributions from interdisciplinary fields of knowledge

Food & Nutrition	Textiles	Living Environments
<ul style="list-style-type: none"> ▪ food security for all ▪ organics ▪ agricultural practices ▪ quality of life ▪ body image ▪ healthy eating and exercise habits ▪ consumerism ▪ applies a critical thinking lens to media ▪ cookery techniques for the home ▪ how to shop for food ▪ making ethical and economically sound consumer choices ▪ cultural and religious awareness 	<ul style="list-style-type: none"> ▪ ecological sustainable futures for all ▪ child labour law ▪ ethical choices ▪ eco-friendly agricultural practice ▪ technical machinist practices ▪ promotes creativity and aesthetics ▪ chemical awareness used in making textile products ▪ recycling ▪ cultural and religious awareness 	<ul style="list-style-type: none"> ▪ human development and relationships ▪ practical home making awareness ▪ community partnerships ▪ family studies ▪ early childhood ▪ relationship and conflict management ▪ peace and cultural studies ▪ economics of the home

Conclusion

Spiritual, health and wellbeing all have scientific and historical baggage. This article should assist in navigating the minefield. Clarifying the concepts may assist with removing the blindfold of religion and with *seeing* how spirituality fits within a more comprehensive picture of health, health education and home economics—all fields that have people as their core of concern. There are many opportunities in which we may observe and explore public expressions of spiritual health and wellbeing. It is the *essence* of spiritual health and

wellbeing theory that may provide us with some direction to address the *mass* sustainability challenges that we face. Home economics curriculum provides a rich platform for this exploration. As we move towards an increasingly interconnected and globalised world, it would be remiss of us to persist with taken-for-granted assumptions about spiritual health and wellbeing in research and practice. The conceptual framework presented in this paper provides an opportunity for us to explore spiritual health and wellbeing from a unique, diverse and culturally respectful platform.

Biography

Jay Deagon, Doctoral Candidate in the School of Education and Professional Studies, Griffith University, Brisbane, Australia, is the founder of HomeEcConnect where she is researching Home Economics and spiritual health and well-being as an aspect of health education, population health and sustainable development. Jay is a member of the IFHE and the Home Economics Institute of Australia and acknowledges the financial assistance provided by the King & Amy O'Malley scholarship fund. E-mail: j.deagon@griffith.edu.au

Professor Donna Pendergast, PhD is Dean of the School of Education and Professional Studies at Griffith University, Brisbane, Australia. Donna researches and writes about Home Economics philosophy, education and practice. Donna recently completed her 4 year term as Vice president of the Pacific Region and member of the IFHE Executive. She continues to serve the profession as Chairperson of the IFHE Think Tank Committee and Editor of the International Journal of Home Economics. She has served as National President of the Home Economics Institute of Australia, and President of the Queensland division. She was Editor of the Journal of the Home Economics Institute of Australia for ten years and serves on several Editorial Boards. E-mail: d.pendergast@griffith.edu.au

References

- Agnello, M. F., White, D. R., & Fryer, W. (2006). Toward Twenty-First Century Global Citizenship: A Teacher Education Curriculum. *Social Studies Research and Practice*, 1(3), pp. 312-326.
- Baldwin, E. (1996). *Family wellbeing: a conceptualization guide to professional practice*. Paper presented at the Toward a Theory of Family Well-Being, Nashville, Tennessee.
- Bensley, R. J. (1991). Defining spiritual health: a review of the literature. *Journal of Health Education*, 22(5), 287-290.
- Best, R. (2000). Empathy, Experience and SMSC (Spiritual, Moral, Social and Cultural Education). *Pastoral Care*.
- Burrows, L. (2006). *Does spiritual wellbeing have a place in public education?* Paper presented at the AARE Conference. www.aare.edu.au/06pap/bur06182.pdf

- Chuengsatiansup, K. (2003). Spirituality and health: an initial proposal to incorporate spiritual health in health impact assessment. *Environmental Impact Assessment Review*, 23(1), pp. 3-15.
- Crawford, M., & Rossiter, G. (2006). *Reasons for Living: Education and Young People's Search for Meaning, Identity and Spirituality: A Handbook*
- Crossman, J. (2003). Secular spiritual development in education from international and global perspectives. *Oxford Review of Education*, 29(4), pp. 503-520.
- De Souza, M. (2006). Educating for hope, compassion and meaning in a divisive and intolerant world. *International Journal of Children's Spirituality*, 11(1), pp. 165-175.
- De Souza, M. (2009). Spirituality and wellbeing. [Editorial]. *International Journal of Children's Spirituality*, 14(3), 181-184.
- Deagon, J. (2009). 'Spiritual' Discourse models at work in Queensland Studies Authority curriculum documents: a content and discourse analysis of the middle phase of learning syllabuses and support material. unpublished Master of Education thesis, Griffith University, Gold Coast.
- Delors, J. (1996). *Learning: The Treasure Within: UNESCO Task Force on Education for the Twenty First Century*.
- Fisher, J. (1998). *Spiritual health: Its nature and place in the school curriculum*. PhD Thesis, University of Melbourne, Ballarat.
- Fisher, J. (2000). Being human, becoming whole: understanding spiritual health and wellbeing *Journal of Christian Education*, 43(3), 37-52.
- Fisher, J. (2001). The nature of spiritual wellbeing and the curriculum: some Educators' views [electronic version]. *Journal of Christian Education*, 44(1), pp. 47-58.
- Fisher, J. (2008). *Reaching the heart: assessing and nurturing spiritual wellbeing via education*. Doctor of Education Thesis, University of Ballarat, Ballarat. Retrieved from <http://archimedes.ballarat.edu.au:8080/vital/access/HandleResolver/1959.17/13481>
- Fleming, S., & Evans, D. S. (2008). The concept of spirituality: its role within health promotion practice in the Republic of Ireland. *Spirituality and Health International*, 9(2), 79-89.
- Gee, J. P. (2005). *An introduction to discourse analysis: theory and method* (2nd ed.). New York, USA: Routledge.
- Hawks, S. (1994). Spiritual health: definition and theory. *Wellness Perspectives*, 10(4), pp. 3-13.
- Hawks, S. (2004). Spiritual Wellness, Holistic Health, and the Practice of Health Education. *American Journal of Health Education*, 35(1), 11.
- Hawks, S., Smith, T., Thomas, H. G., Christley, H. S., Meinzer, N., & Pyne, A. (2007). The forgotten dimensions in health education research *Health Education Research*, 23(2), pp. 319-324.

- Henry, M. (1995). *Well-being, the focus of home economics: an Australian perspective*. Doctoral dissertation, University of New England.
- Hettler, B. (2009). Six dimensional model of wellness. *About wellness* Retrieved 9 December 2010, from http://www.nationalwellness.org/index.php?id_tier=2&id_c=25
- Hettler, B. (2010). Origins of the 6 Dimensional Model of Wellness created in 1976 by Bill Hettler Retrieved 15 December, 2010, from <http://www.hettler.com/OriginsoftheHettler6DimensionalModel.mht>
- Hickling-Hudson, A. (1999). Globalisation, postcolonialism and educational change. In D. Meadmore, B. Burnett & P. O'Brien (Eds.), *Understanding education: contexts and agendas for the new millennium*. (pp. 82-90). Australia: Prentice Hill.
- Hill, B. (1989). 'Spiritual Development' in the Education Reform Act: a source of acrimony, apathy or accord? *British Journal of Education Studies*, XXXVII (2), pp. 169-182.
- Hyde, B. (2004). The plausibility of spiritual intelligence: spiritual experience, problem solving and neural sites. *International Journal of Children's Spirituality*, 9(1), 39-52.
- International Federation for Home Economics. (2009). Home Economics in the 21st century: position statement. Retrieved from <http://www.ifhe.org/>
- Ma, A., & Pendergast, D. (2010). Innovative Pedagogies for Family and Consumer Science/Home Economics Education—Utilizing Computer-Based Collaborative Learning to Foster Lifelong Learning Attributes. *Family and Consumer Sciences Research Journal*, 38(3), 273-288. doi: 10.1111/j.1552-3934.2009.00018.x
- MCEETYA. (2008). The Melbourne Declaration on Educational Goals for Young Australians, December 2008. Retrieved from http://www.mceetya.edu.au/mceecdy/melbourne_declaration,25979.html
- McGregor, S. (2010). Well-being, wellness and Basic Human Needs in Home Economics. *McGregor Monograph Series No. 201003*. Retrieved from
- McGregor, S., & Chesworth, N. (2005). Positioning human spirituality in home economics. *Journal of the HEIA*, 12(3), pp. 27-44.
- McGregor, S., Pendergast, D., Seniuk, E., Eghan, F., & Engberg, L. (2008). Choosing our future: Ideologies matter in the home economics profession. *International Journal of Home Economics*, 1(1), 43-62.
- Nickols, S. Y., Ralson, P. A., Anderson, C., Browne, L., Schroeder, G., Thomas, S., & Wild, P. (2009). The family and consumer sciences body of knowledge and the cultural kaleidoscope: research opportunities and challenges. *Family and Consumer Sciences Research Journal*, 37(3), pp. 266-283. doi: 10.1177/1077727X08329561
- O'Connell, K. A., & Skevington, S. M. (2007). To measure or not to measure? Reviewing the assessment of spirituality and religion in health-related quality of life. *Chronic Illness*, 3(1), 77-87. doi: 10.1177/1742395307079195
- Organisation for Economic Co-Operation and Development. (2001). E-Learning: the partnership challenge: education and skills. France: OECD Publications Service.

- Pendergast, D. (2001). *Virginal Mothers, Groovy Chicks & Blokey Blokes: Re-thinking Home Economics (and) Teaching Bodies*. Brisbane: Australian Academic Press Pty Ltd.
- Petersen, A. C. (2008). Spiritual development in adolescence: Toward enriching theories, research, and professional practice. *New Directions for Youth Development, Vol: 2008*(Issue: 118), 119-130.
- Rabinow, P., & Rose, N. (Eds.). (1994). *The essential Foucault: selections from essential works of Foucault, 1954-1984* (Revised edition ed.). New York: The New Press.
- Raskin, P. D. (2008). World lines: A framework for exploring global pathways. *Ecological Economics, 65*(3), 461-470. doi: 10.1016/j.ecolecon.2008.01.021
- Roehlkepartain, E., Benson, P., King, P., & Wagener, L. (2009). Spiritual Development in childhood and adolescence: moving to the scientific mainstream. In E. Roehlkepartain, P. King, L. Wagener & P. Benson (Eds.), *The handbook of spiritual development in childhood and adolescence* (pp. 1-15). London: Sage Publications.
- Singh, P. (2002). Pedagogising Knowledge: Bernstein's theory of the pedagogic device. *British Journal of Sociology of Education, 23*(4), 571-582.
- Sterling, S. (2004). *Schumacher Briefings: Sustainable education: re-visioning learning and change*. UK: Green Books Ltd.
- Tacey, D. (2003). *The spirituality revolution: the emergence of contemporary spirituality*. Australia: HarperCollinsPublishers.
- UNESCO. (2009). Education for Sustainable Development: Three Terms and One Goal Retrieved August 29, 2009, 2010, from <http://www.unesco.org/new/en/education/themes/leading-the-international-agenda/education-for-sustainable-development/three-terms-one-goal/>
- Varder, J.-P. (2006). Spiritual health: the next frontier. [Editorial]. *European Journal of Public Health, 16*(5), 457.
- Walker, D. F. (1971). A Naturalistic Model for Curriculum Development. *The School Review, 80*(1), 51-65.
- Watson, J. (2006). Spiritual development and inclusivity: the need for a critical democratic approach. *International Journal of Children's Spirituality, 11*(1), pp. 113-124.
- Wong, P. H. (2005). The ambiguity of the term 'spiritual' in Hong Kong educational discourse: rhetoric and substance. *International Journal of Children's Spirituality, 10*(3), 243-261.
- World Health Organisation. (1946). Constitution of the World Health Organization. *International Health Conference*, from <http://apps.who.int/gb/bd/PDF/bd47/EN/constitution-en.pdf>
- World Health Organisation. (1998). Health Promotion Glossary. Retrieved from http://www.who.int/hpr/NPH/docs/hp_glossary_en.pdf
- World Health Organisation. (2011). Official Website, from <http://www.who.int/en/>

Yates, L., & Young, M. (2010). Globalisation, Knowledge and the Curriculum. *European Journal of Education*, 45(1), 4-10.

Factors associated with attendance of women in antenatal care visit/classes in Ile Ife, Osun State, Nigeria

Beatrice Ogunba, Grace Ogbimi & David Oladeji

Obafemi Awolowo University

Abstract

A cross-sectional study was designed and 150 questionnaires were administered to mothers with children of age 0 to 2 years through random sampling technique in Osun State, Nigeria. Results showed that 62.4% of women had their babies in the hospital. Only 56% had access to antenatal care (ANC); 60.7% started ANC during their second trimester and 87.3% of those that missed ANC did not have good reason. Those that attended clinics for safe delivery were 88.7%. Women were taught adequate diet preparation (98%), hygiene (98%), breastfeeding (96.7%), exercise (88%), and birth control (66.7%) while 99.3% of women changed their eating habits, 6.7% detected complications, and 28% were able to correct their packed cell volume (PCV) results. Factors that influence the attendance of ANC include accessibility to centres, cost duration and facilities availability. Correlation results showed that educational status ($r = 0.334$) and age of mothers ($r = 0.162$) have positive significant relationship with ANC at $P < 0.05$. It is recommended that pregnant women should attend ANC for safe delivery and reduction of maternal and infant mortality and morbidity.

Keywords: women, pregnancy, antenatal care, safe motherhood, Nigeria

Introduction

Childbirth has been described as the woman's struggle. Although pregnancy is a natural process, it is one that is never without risks (Brown, 1995). Pregnancy is one of the most important periods in the life of a woman, a family and a society (Alexandre, Saint-Jean, Crandall, & Fevrin, 2005). There is no way to guarantee that every baby will be born in perfect health, but many infant deaths, pre-term delivery and low birth weights can be prevented by optimizing maternal behaviours that influence health (Beckman, Buford, & Witt, 2000). Education and adequate diet, and early and consistent prenatal medical care maximize the chances of producing a healthy baby (Ministry of Health, 1997).

In recognition of the potentials of care during the antenatal period to improve a range of health outcomes for women and children, the World Summit for Children in 1990 adopted antenatal care (ANC) as a specific goal, namely, "[A]ccess by all pregnant women to prenatal care, trained attendants during childbirth and referral facilities for high risks pregnancies and obstetric emergencies". In developing countries, two out of three women receive some ANC, but in South Asia, excluding China, the rate is barely half (Ministry of Health & World Health Organization (WHO), 2003).

Health services generally consider that ANC begins with a pregnant woman receiving antenatal care that continues until birth (Alexandre et al., 2005). Early ANC was associated with significant improvement in haemoglobin concentration. In Ghana, pregnant women who sought ANC before the end of the 3rd month delivered infants whose birth-weights were significantly better compared to those who sought care later (Kishk, 2002). Studies indicate that the vast majority of Nigerian women who utilize modern ANC registered late, which is in sharp contrast with findings in most developed countries (WHO, 2002).

Many studies have been conducted to examine factors related to the utilization of ANC in middle and low income countries (Banta, 2003; WHO, 2005). Maternal education, household income, parity, women's age and occupation, and cost and availability of services are factors commonly correlated to the use of ANC in these studies (WHO, 2003). The place of residence, urban or rural area, is also a factor affecting the use of ANC. Some studies have shown differences between the urban and rural areas in knowledge, attitude and practices of women towards ANC (WHO, 2002, 2003).

To prevent unwanted outcomes of pregnancy, ANC is the most important method for detecting pregnancy problems in the early period (WHO, 2003). ANC is a critical element for reducing maternal mortality, and for providing pregnant women with a broad range of health promotion and preventive health services (Banta, 2003). One of the most important functions of ANC is to offer health information and services that can significantly improve the health of women and their infants. ANC is also an opportunity to inform women about the danger signs and symptoms for which immediate assistance should be sought from a health care provider (WHO, 2002).

The numbers of ANC visits vary depending on the country. In Western Europe, North America, and many other countries, ANC includes 12-16 visits to health care services by the pregnant woman, as well as provider visits to her home (WHO, 2003). The number of ANC visits varies within Indonesia. WHO and the Indonesian government recommended a minimum of four ANC visits for a woman with a normal pregnancy; that is, one visit each in the first and second trimester, and two visits in the third trimester (1-1-2 frequency). Unfortunately, the actual number of visits does not always reach the recommended number of minimum visits, signalling a need for closer examination of causal factors. Surveys indicated that the 1-1-2 frequency was more likely to be completed by urban women (72%) compared to rural women (57%) (WHO, 2003). Based on WHO statistics (Banta, 2003), only 81% of the women in Indonesia attended the recommended four antenatal visits.

The percentage of pregnant women who received ANC services in Indonesia particularly on the island of Java (1997), receiving at least one visit, was higher (82.3%) compared to islands outside of Java (West Nusa Tenggara, Maluku and Irian Jaya) (65.9%). Half of the women received less than the 1-1-2 frequencies and of those only 60% received the standard care such as measurements of weight, height, blood pressure, weight of womb, tetanus toxin injection and dispensing of iron tablets (WHO, 2005).

A review of studies from various countries indicates that the ANC utilization rate is still low due to many factors that need to be examined, such as socio-demographic features,

knowledge of social support, and ANC services (WHO, 2005). Maternal and child welfare is not only related to health services provided by government and private organizations: it is also related to women as mothers, including their education, economic status, culture, environment, and professional development (Royal College of Obstetricians and Gynaecologists (RCOG), 2003). For example, a study in Xien Khouang Province, Lao PDR (Ndidi & Oseremen, 2010) showed that significant predictors of ANC utilization were level of education, income, knowledge, attitude, distance to service, availability of public transportation, cost of transportation, and cost of services.

There are several factors that may influence attendance at antenatal clinics. Research has identified sociodemographic characteristics, geographic area, attitude towards pregnancy, language fluency, perceived cost, transportation, and childcare as factors and/or barriers related to the initiation of prenatal health services (Beckman et al., 2000). Other research (Ndidi & Oseremen, 2010) revealed that women's understanding and perception of the need for antenatal care can also play a more dominant role. For over 10 years, health services all over the world have been working towards the safe motherhood target of halving the number of women who die each year from pregnancy related causes. Yet there has been little change in the number of deaths or the amount of long-term damage to women's health (Campbell, 2000).

Objectives of the study

- a) Determine the frequency and timing of antenatal care;
- b) Determine women's participation in antenatal care; and
- c) Identify factors influencing the use of antenatal care.

Methodology

Data for this study were collected from 150 mothers with children of age 0 months to 2 years in the study area. The sample was obtained through simple random sampling procedure. The interview schedule, which had been pretested, consisted of two parts. The first requested information on the bio data: age, parity, marital status and setting, and level of education. In the second part, information was collected on mothers' socio-economic characteristics, attendance at antenatal care, care received during antenatal care, and effect of antenatal care on diet, hygiene, breastfeeding, and birth control. Interviews were conducted in Yoruba and English. Data were analysed using descriptive statistics such as frequency counts, percentage and cross tabulation.

Results and discussion

Participants

The age of the 150 women involved in this study, along with their marital status, religion, number of children and age of youngest child, are presented in Table 1. Thirty-six percent of mothers were between the age range of 25-29 years while 28.7% were between the ages of 30-34, and 21.3% fell in the age class interval of 20-24 years; 11.4% of the respondents were aged over 35 while 2.7% were between 15-19 years. This implies therefore, that mothers

within the age bracket 25-29 were mostly involved in the study while those within the age bracket 15-19 were least involved in the study. A very high percentage (87.3%) of the respondents were married, while 12.7% were single parents. The majority (82.7%) of the women were Christians while 16.7% were Muslims and 0.7% were atheists. In terms of number of children, 43.3% of the respondents had one child, 27.3% had two children, 20.7% had three children, while 8.7% had four or more. Finally, Table 1 indicates the age of the youngest child of the women involved in this study: 79.3% of the respondents had babies aged 1-6 months, 16.7% had 7 to 12-month old babies, while 4.0% had 13 to 18-month old babies.

Table 1: Frequency distribution of the respondents' socio-economic characteristics

Variables	Frequency	Percent (%)
Age (year)		
15-19	4	2.7
20-24	32	21.3
25-29	54	36
30-34	43	28.7
35 and above	17	11.4
Marital status		
Married	131	87.3
Single parent	19	12.7
Religion		
Christianity	124	82.7
Islam	25	16.7
Atheist	1	0.7
Number of children		
1	65	43.3
2	41	27.3
3	31	20.7
4 and above	13	8.7
Age of child (months)		
1-6	119	79.3
7-12	25	16.7
13-18	6	4.0

Women's participation in antenatal care

The timing of the first ANC visit, reasons for attending, number of clinics attended and reasons for missing clinic visits are set out in Table 2. Results indicate that 1.3% of respondents' first ANC visit was at the time when pregnancy was more than 27 weeks; for 13.3% the first visit was between 1-11 weeks of pregnancy while for the majority (60.7%) the first visit occurred between 12-19 weeks. The reasons given for attending the ANC clinic were for safe delivery (88.7%), proper monitoring of pregnancy (2%), or both proper monitoring of pregnancy and safe delivery (9.3%).

The majority of the respondents (39.3%) attended 11-15 clinics, 31.4% had 16 and above, 25.3% attended 6-10 classes, while 4% had between 1-5 attendances. The three reasons given for missing ANC clinic were because of sickness (0.7%), social functions (1.3%) or because they are busy at home (10.7%).

Table 2: Percentage distribution of the women's participation in antenatal care

Variables	Frequency	Percentage
Attend antenatal care		
Yes	142	97.3
No	18	12.7
First antenatal care visit (weeks)		
10-11	20	13.3
12-19	91	60.7
20-27	37	24.7
28 and above	2	1.3
Reasons for attending antenatal care		
Safe delivery	133	88.7
Proper monitoring	3	2
Both reasons	14	9.3
Number of antenatal care clinic attended		
1-5	6	4
6-10	38	25.3
11-15	59	39.3
16 and above	47	31.4
Reasons for missing antenatal care		
None	131	87.3
Social function	2	1.3
Sickness	1	0.7
Others (busy at home)	16	10.7

Preferred personnel for antenatal care

Respondents were asked about their preferences for personnel in ANC. The data are presented in Table 3, showing that 58% of respondents indicated that doctors should handle ANC, 33.3% indicated a preference for nurses to be in charge of ANC, 5.3% of respondents chose midwives, and 2.7% stated that all these personnel should handle ANC, while the minority (0.7%) indicated that consultants should handle ANC. For the majority (51.3%), fear was the reason nominated for choosing certain ANC clinics; 40% nominated other reasons (such as proper monitoring of pregnancy), and the reason given by 8.7% was because of complications.

Table 3: Respondents' preferred antenatal care personnel and reasons for preference

Variables	Frequency	Percent (%)
Preferred Personnel for Antenatal care		
Doctor	87	58.0
Nurses	50	33.3
Midwives	8	5.3
Consultant	1	0.7
All	4	2.7
Reason for preference		
Fear	77	51.3
Complication	13	8.7
Other (proper monitoring)	60	40.0

Factors influencing the use of antenatal care

Use of ANC by the women involved in this study was affected by factors including access, cost, and time spent in ANC visits. The impact of these factors is set out in Table 4. More than half (56%) of the respondents said that they had access to antenatal clinics while 44% stated that they did not have access to ANC due to distance. In terms of cost, 36% of respondents paid ₦40 and below to access the ANC clinics, 32% paid between ₦50-₦70 as transportation fares to attend, 12% paid ₦80-₦100 for fares, while 20% of the respondents paid ₦101 and above to attend antenatal clinics. For all the respondents, cost was not considered a major determinant for them to attend ANC.

The duration of ANC visits varied from 1-6 hours: 71.4% of respondents spent 3-4 hours at an ANC clinic, 24.6% spent 1 to 2 hours, while 4% spent 5-6 hours. More than half of the respondents (56.7%) agreed that time spent during ANC clinics is neither too long nor too short; 39.3% indicated that time spent during ANC is too long while a minority (4.0%) said that time spent is too short.

Knowledge acquired during antenatal care

Respondents were asked about the knowledge they gained through their participation in ANC. As Figure 1 illustrates, acquired knowledge related to diet, hygiene, breastfeeding, exercise, and birth control. In terms of dietary knowledge, 98% of the respondents indicated that they were taught about what to eat while 2% indicated that diet was not included in their teaching. The majority of the respondents (98%) indicated that they learned more about hygiene, taking care of their body, their environment and that of the baby, with 2.0% indicating that this was not part of what they were taught. More knowledge about breastfeeding was gained by 96.7% of the respondents, while 3.3% of the respondents did not acquire this knowledge during the ANC. Sixty-six percent of the respondents acquired more knowledge about their health and the relevance of exercise to it, while 12% of the respondents did not partake of this. Knowledge about birth control was acquired by 66.7% of the respondents, while 33.3% of the respondents indicated they were not taught about this.

Table 4: Percentage distribution of the factors influencing the use of antenatal care

Variables	Frequency	Percent (%)
Access to antenatal		
Accessible	84	56
Not Accessible	66	44
Cost to antenatal care		
40 and below	54	36
50-70	48	32
80-100	18	12
101 and above	30	20
Hours spent at the hospital for antenatal care		
1-2	37	24.6
3-4	107	71.4
5-6	6	4.0
Perception on duration of antenatal care		
Too short	6	4.0
Okay	85	56.7
Too long	59	39.3

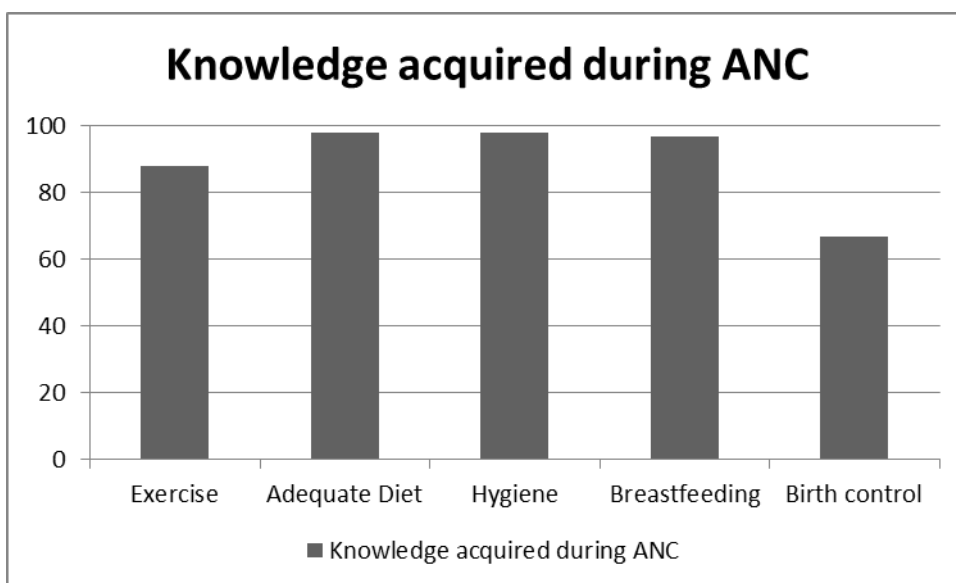


Figure 1: Knowledge acquired by respondents during antenatal care, indicated in terms of percentage of responses

Benefits of antenatal care

Respondents indicated various benefits of participating in ANC, including change of eating habits, ability to detect complications or resolve confusion in pregnancy, and correcting PCV (Packed cell volume, a measure of the proportion of blood volume that is occupied by red blood cells) results. The data are presented in Figure 2. The eating habits of the respondents changed as a result of knowledge gained during the antenatal classes, with 99.3% indicating changed eating habits and only 0.7% of the respondents indicating that their eating habits were not affected. Complications were not detected during ANC for the majority of respondents (93.3%) while 6.7% of the respondents stated that ANC helped to detect complications. Confusion was resolved for 40.7% of the respondents during ANC; 59.3% stated that during antenatal clinic there was no confusion for them. Some of the respondents (28%) had their PCV corrected during ANC while 72% did not have any problem with their PCV (see

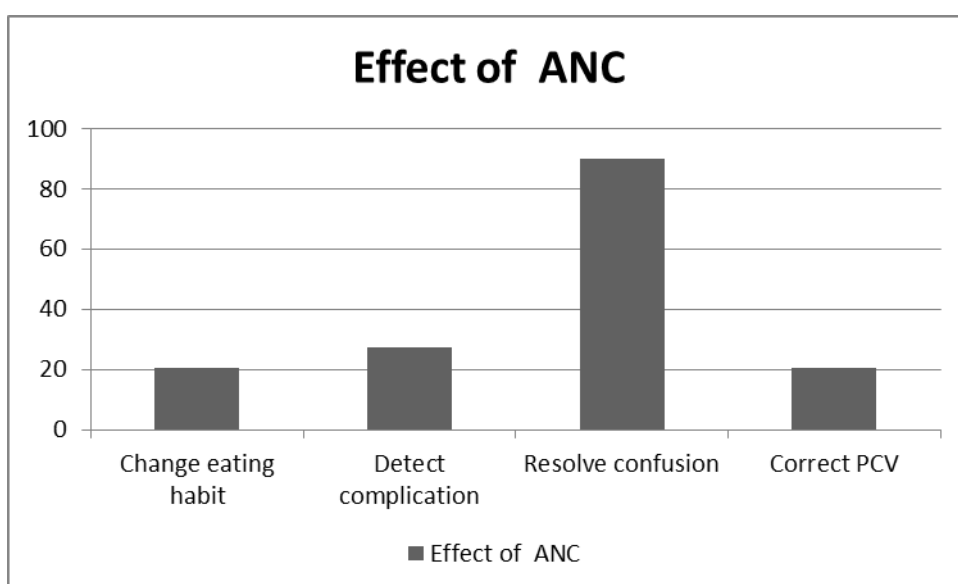


Figure 2).

Figure 2: Effects of antenatal care on changing eating habits, detecting complications, resolving confusion, and correcting PCV, shown in numbers of respondents.

Maternal characteristics and antenatal care

Table 5 sets out the correlation between maternal characteristics (in terms of age, number of children, educational status, and income) and involvement in ANC. As Table 5 indicates, there is a positive significant relationship between age ($r = 0.162$, $p < 0.01$), monthly salary ($r = 0.287$, $p < 0.01$) educational status ($r = 0.334$, $p < 0.01$) and antenatal care, while number of children had a negative significant relationship ($r = -0.374$, $p < 0.01$) with antenatal care. This would suggest that the higher the number of children the respondent had, the lower the number of antenatal care visits because they believed they are experienced mothers.

Table 5: Correlation analysis of maternal characteristics and antenatal care

Variable	Correlation Coefficient (r)	Coefficient of determination (r ²)	Percentage of determination
Age	0.162*	0.026	2.62
Number of children	0.377**	0.140	14.0
Educational status	0.334**	0.112	11.16
Income	0.28**	0.082	8.24

* 0.05 level of significant; ** 0.01 level of significant

Discussion

Early commencement of antenatal care by pregnant women, as well as regular visits, has the potential to affect maternal and foetal outcome positively (WHO, 2002; Yousif & Abdul Hafeez, 2006). Most maternal deaths happen around or during delivery, usually from complications which could have been detected and taken care of if proper care and timely visits were made by women during pregnancy. Some of the pregnant women in the study area did not start ANC visits until the second trimester, and some as late as the third trimester. This is an attitude common with experienced mothers, yet different pregnancies come with different experiences.

Factors that influence the use of antenatal care as discovered by this study are accessibility to care centres, duration of ANC programme in the hospital, facilities available in the hospital and cost of transport to the ANC centres. Yet this study has found that when ANC is accessed, there can be a number of benefits for the pregnant woman and her child. Nutrition is an essential component of prenatal care. A healthy diet contributes to successful pregnancy by reducing complications and promoting adequate foetal growth and development. The nourishment needed for a baby's developing tissues and organs depends on the mother's diet; also, the health of the pregnant women depends on her diet. During ANC visits, mothers who attend learn to change their eating habits. Exclusive breastfeeding and lactation management are also major topics in ANC, information which might be distorted if given by friends or neighbours.

The results of this study indicate various other benefits for those women who participated in ANC. There were discussions on hygiene and birth control as reported by the women and there was also attention to routine exercise. For a number of participants, complications were detected and treated by doctors. Antenatal care for pregnant women by trained attendants has the potential to improve health outcomes for women and children. In the present study, anaemia in pregnancy was also detected for those with low PCV and this was attended to.

Proper monitoring of pregnancy can reduce maternal mortality, morbidity and other pregnancy complications. This also helps in safe delivery, hence antenatal care is an important aspect of pregnancy that all pregnant women should attend.

Conclusion

All pregnant women should initiate antenatal care early. The findings of this study suggest that duration of antenatal care clinics should not be too long, that is, not more than two hours for effective dissemination of knowledge and also to prevent boredom. It is therefore recommended that governments should encourage all pregnant women to attend ANC clinics and should also ensure that antenatal classes are provided in all community health centres, as this will help pregnant women access antenatal care. Care givers should also strictly follow guidelines and make sure that all the programmes in the guidelines are taught and involving all the five senses if possible for proper understanding.

Biography

Dr Beatrice Ogunba is a lecturer in Obafemi Awolowo University, Ile-Ife, Nigeria. Email address: boogunba@yahoo.com

Dr Grace Ogbimi is a lecturer in Obafemi Awolowo University, Ile-Ife, Nigeria. Email address: geogbimi@yahoo.com.

Dr David Oladeji is a lecturer in Obafemi Awolowo University, Ile-Ife, Nigeria. E-mail: dijideji@yahoo.co.uk

References

- Alexandre, P. K., Saint-Jean, G., Crandall, L., & Fevrin, E. (2005). Prenatal care utilization in rural areas and urban areas of Haiti. *Rev Panam Salud Publica/Pan Am Journal of Public Health*18(2), 84-92.
- Banta, D. (2003). *What is the efficacy/effectiveness of antenatal care and the financial and organizational implications?* Copenhagen: WHO Regional Office for Europe. Retrieved from <http://www.euro.who.int/Document/E82996.pdf>
- Beckman, C., Buford, T., & Witt, J. (2000). Perceived barriers to prenatal care services. *Maternal Child Nursing*, 25(1), 43-46.
- Brown, J. E. (1995). *Nutrition now*. University of Minneapolis: West Publishing.
- Kishk, N. A. (2002). Knowledge, attitudes and practices of women towards antenatal care: Rural-urban comparison. *Journal of the Egyptian Public Health Association*, 77(5-6), 479-498.
- Ministry of Health, Republic of Indonesia and WHO. (2003). Indonesia Reproductive Health Profile 2003. Retrieved from http://www.searo.who.int/LinkFiles/Reproductive_Health_Profile_RHP-Indonesia.pdf
- Ndidi, E. P., & Oseremen, I. G. (2010). Reasons given by pregnant women for late initiation of antenatal care in the Niger Delta. *Ghana Medical Journal*, 44(2), 47-51.

- Royal College of Obstetricians and Gynaecologists (RCOG). (2003). *Clinical guidelines, antenatal care: Routine care for the healthy pregnant woman*. London: RCOG Press.
- WHO. (2002). *Maternal mortality in 2000: Estimates developed by WHO, UNICEF, UNFPA*. Geneva, Switzerland: WHO Department of Reproductive Health and Research.
- WHO. (2003). *Antenatal care in developing countries: Promises, achievement and missed opportunities. An analysis of trends, levels and differentials, 1990-2001*. Geneva, Switzerland: WHO.
- Yousif, E. M., & Abdul Hafeez, A. R. (2006). The effect of antenatal care on the probability of neonatal survival at birth, Wad Medani Teaching Hospital Sudan. *Sudanese Journal of Public Health*, 1(4), 293-297.

Welfare and Child Support Influence on Maternal Health and Wellbeing among Women in Abeokuta, Ogun State, Nigeria

David Oladeji & Kudirat Bakare

Obafemi Awolowo University

Abstract

This study focused on the relationship between welfare and child support influence on maternal health and wellbeing among women in Nigeria. A total of 250 married women drawn randomly from different groups in Ogun State constituted the sample for the study. Their ages ranged between 25-49 years with a mean age of 37 years, with standard deviation of 8.48. The two instruments used were author-constructed questionnaires with 0.74 and 0.79 as reliability coefficient respectively. The data obtained were analysed using multiple regression, correlation, and chi-square (χ^2) statistics. The results indicated that significant relationship existed between work requirements ($r = 0.282$, $p < 0.05$), less use of preventive care ($r = 0.269$; $p < 0.05$), and health requirements ($r = 0.324$; $p < 0.05$), but not with bargaining position of mothers. The results also indicated that significant relationship existed between health insurance policy ($\chi^2 = 22.01$; $p < 0.05$), welfare policies and reforms ($\chi^2 = 45.83$; $p < 0.05$), but not with health care utilization and health behaviour. The results further indicated that a combination of the independent variable significantly predicted maternal health and wellbeing (F-ratio of 57.241; $p < 0.05$ alpha level). Based on the findings, it is recommended that social workers, guidance counsellors, psychologists and others in the helping profession should take cognizance of those variables that have been found to influence maternal health and wellbeing among women.

Keywords: maternal health, health care, health behaviour, welfare, child support, women, Nigeria

Introduction

Background to the study

An emerging body of research examines the link between the welfare reforms of the late 1990s and maternal and child health. Bitler, Gelbach, and Hoynes (2005) and Kaestner and Kaushal (2003) provide thorough reviews of how welfare reform, primarily via transitions to employment, may influence maternal health and the empirical evidence to date on this topic. A broader perspective on the role of welfare and child support policies, specifically, asks how the generosity and stringency of these policies, in general, may influence maternal health and wellbeing. In this regard, the view of welfare reform is as a set of policies that made public support less generous and private support more mandatory.

What does theory tell us about the potential influence of welfare and child support policies on maternal health and health behavior? With respect to welfare policies, theory is ambiguous and suggests two potential causal pathways through which welfare might influence health. First, Aid to Mothers with Dependent Children (AFDC), or “welfare”, was designed to aid mothers in dire circumstances, and for this reason we would expect generous welfare policies to improve mothers’ health, at least in the short run. Second, because welfare benefits are highly income-tested, they discourage work, which may lead to economic dependence in the long run. For this reason we might expect more generous welfare policies to reduce mothers’ health and increase negative health behavior. Finally, estimating the correct influence of welfare policies on maternal health is difficult because of a serious selection problem. Since welfare is a last resort for most mothers, those who turn to it for support are likely to be in poorer health than those who do not. Thus we would expect to find a negative association between welfare use and health.

With respect to child support, theory suggests that stronger child support policies should improve maternal health by improving the overall bargaining positions of mothers and by improving total income in the long run. In contrast, the influence of child support enforcement on mothers who depend on welfare is likely to be negative, since these mothers have little say in whether or not the father is ordered to pay child support and since child support dollars may not increase their income (as money is often paid through the state, with little money being passed through to the mother), at least in the short run.

Strong child support enforcement may actually reduce the income of mothers on welfare if they have been receiving informal transfers from the father. Formal child support payments often substitute for informal payments and typically go to the state rather than to the mother (Nepomnyaschy & Garfinkel, 2006). Most importantly, strong child support enforcement may increase conflict between mothers and non-resident fathers, which is expected to have negative influence on maternal health and health behavior. As in the case of welfare, estimates of the influence of child support policies on maternal health are likely to be biased by selection into the child support system. For non-welfare mothers, selection should be positive; that is, the most able and most healthy mothers should be the most likely to obtain a child support award. For mothers on welfare, however, selection should go in the opposite direction since welfare is selective of the least healthy mothers.

Empirical evidence

As noted in the introduction, the empirical research on the influence of welfare and child support policies on maternal health and health behavior is very limited. Although a number of studies have examined the association between welfare participation and maternal health, much of this literature is descriptive. The most frequently studied health outcome is depression, and here the causal evidence is weak (Lennon, Blome, & English, 2002), although some studies suggest a causal pathway (Chavkin, Romero, & Wise, 2000). A study by Blank (2002), focused primarily on child outcomes, found that selection into AFDC accounts for most of the association between welfare participation and maternal smoking or drinking during pregnancy. Research on the link between child support enforcement and maternal health is even more limited than research on the influence of welfare policies.

The Welfare Reform Act of 1996 stimulated some research on the influence of more restrictive welfare policies on maternal health, but most of this research focused on health insurance coverage, and to a lesser degree, on health care utilization and health behaviors. Evidence to date is mixed as to the influence of welfare reform on health insurance coverage. Many researchers find that tougher (more restrictive) welfare policies are associated with a loss of health insurance (Cawley, Schroeder, & Simon, 2006), while others find little to no influence (Bitler et al., 2005; Kaestner & Kaushal, 2003). While there is some debate as to the link between health insurance and health outcomes (Levy & Meltzer, 2004), there is substantial evidence that having health insurance is associated with more preventive care (Institute of Medicine, 2002). Therefore, it is not surprising that research suggests stricter welfare policies are associated with less health care utilization (Bitler et al., 2005; Kaestner & Kaushal, 2003; Kaestner & Lee, 2005) and higher incidence of unmet health needs (Bitler et al., 2005; Polit, London, & Martinez, 2001). A lack of health insurance coverage may contribute to future health problems if it inhibits mothers from seeking preventive care (Institute of Medicine, 2002).

With respect to health behavior, the evidence is mixed. On the negative side, there is some evidence that tougher welfare policies and stricter work requirements reduce breastfeeding which is positively associated with maternal and child health. According to one study, breastfeeding would have been 5.5% higher in the absence of welfare reform (Jayakody & Stauffer, 2000). There is also evidence that stronger child support enforcement is associated with increases in domestic violence, especially among mothers on welfare (Fertig, Garfinkel, & McLanahan, 2006). On the positive side, researchers have found that reductions in welfare caseloads (resulting from more restrictive policies) are associated with a reduction in binge drinking (Kaplan et al., 2005).

Despite the loss of health insurance, less use of preventive care, and some evidence of poorer health behaviors, there is little to no evidence that more restrictive welfare policies are associated with poorer health or mental health in the years following welfare reform. Researchers find no influence of welfare on mothers' weight, days in poor mental or physical health, or overall health status (Bitler et al., 2005; Kaestner & Tarlov, 2006). Although one study finds evidence that welfare recipients' health outcomes (hypertension, obesity, cholesterol) are worse after welfare reform, these results are based on a pre-post comparison of one state's welfare population compared with a national sample (Kaplan et al., 2005). It is also possible that the negative short-term impacts on health insurance coverage and health behaviors could have impacts on mothers' future health. In this, Bitler et al. (2005) use evidence from welfare-to-work experiments which suggest that welfare reform may be associated with increases in maternal mental health and overall child health. While the results are consistently positive, few are statistically significant.

Most studies on welfare and child support have been focused on family stability and income. It is, therefore, this researcher's understanding that no studies linking welfare and child support and maternal health and wellbeing have been conducted. It is against this background that this study becomes relevant in filling such gaps in our knowledge in the issue of welfare and child support influence on maternal health and wellbeing among women in Nigeria.

Purpose of this study

This study examined the influence of welfare and child support programs on maternal health and wellbeing of women in Nigeria. To achieve these objectives, the following research question and hypotheses have been posed and answered in the study at 0.05 alpha level:

(i). To what extent would health insurance policy, health care utilization, health behaviour, welfare policies and reforms, work requirement and less use of preventive care influence maternal health and wellbeing of women in Nigeria?

(ii). There will be no significant relationship between welfare support and maternal health and wellbeing among women.

(iii). There will be no significant relationship between child support and maternal health and wellbeing among women.

Methodology

Research design

The study is an ex-post factor research design. It is an after-fact study which does not involve the manipulation of any variable. The paramount goal was to ascertain the relationship of welfare and child support factors (health insurance policy, health care utilization, welfare policies and reforms, work requirement, and less use of preventive care) on the dependent variable (maternal health and wellbeing) without manipulating either of them.

Participants

A total of 272 married women aged 25-49 years were randomly selected from (i) Ogun State Teaching Service Commission (52), (ii) Ogun State Civil Service Commission (56), (iii) Police Officers' Wives Association (POWA) Abeokuta branch (54), (iv) Ogun State Women Political Group (52), and (v) Nigerian Army Officers' Wives Association (NAOWA) (58), all in Abeokuta metropolis in Ogun State, Nigeria. Twenty-two participants were eliminated from the analysis because they had missing information on variables of interest, resulting in a sample size of 250. The mean age of the participants was 37 years with a standard deviation of 8.48.

Instrumentation

Two instruments were used in the data collection:

- (1) Welfare and Child Support Questionnaire (WCSQ), and
- (2) Maternal Health and Wellbeing Inventory (MHWI).

The WCSQ is a 4-point Likert scale questionnaire in which participants were asked to indicate their feeling about each statement. It contains 30 items with response format anchored as *Strongly Agree*, *Agree*, *Disagree*, and *Strongly Disagree*. It has 0.74 and 0.79 as the internal consistency and revalidation reliability respectively. MHWI is a 25-item inventory

administered to the participants on women's maternal health and wellbeing. The test-retest reliability of the scale was found to be 0.69 and 0.73 respectively. The two instruments were author-constructed.

Procedure for data collection

The study was carried out between the months of March and August, 2009. The consent of the participants was sought and approval was given by the respondents with absolute confidentiality. The participants for the study were administered the two questionnaires in their various locations with the assistance of two researchers. The administration of the questionnaires to the participants took the researchers two weeks to complete. The collected questionnaires were scored and the data obtained from them were analyzed to answer the research question and the hypotheses generated. On the whole, 272 copies of the questionnaires were distributed and 250 copies were returned fully filled, giving a return rate of 92.0%.

Data analysis

The data collected were analysed using multiple regression, correlation, and chi-square (X^2) statistics to establish the influence of welfare and child support on maternal health and wellbeing among women. Also, frequency counts and percentages were used to determine the characteristics of the participants.

Results

Table 1 shows the frequency and percent distribution of the characteristic of the sample involved in the study. Six variables (educational background, chronological age range, number of children, duration in marriage, husbands' history of alcohol abuse, and witness of inter-parental violence) were examined with the following outcomes. A total of 250 married women were involved in the study: 5 of them had masters degree/doctorate degree, representing 2.0%; 86 had Higher National Diploma/university degree, representing 34.4%; 107 had Ordinary National Diploma/Nigeria Certificate of Education, representing 42.8%; 43 had school certificate/teachers' Grade II, representing 17.2%; while 9 had primary education, representing 3.6%. Thus, all of the participants (100%) had attended formal schooling of one kind or another, with the implication that all the participants were literate to a large extent.

A total of 27 participants (10.8%) were aged between 25-29 years, 21 (8.4%) between 30-34 years, 64 (25.6%) between 35-39 years, 79 (31.6%) between 40-44 years, and 59 (23.6%) between 45-49 years. The number of children in the family shows that 75 families (30.0%) had two children, 61 (24.4%) had three children, 52 (20.8%) had one child, 34 (13.6%) had four children, and 28 (11.2%) had five children and above. Thus, families with one to three children were mostly involved in the study.

Table 1: Frequency and percent distribution of the characteristics of the sample involved in the study

Variables	Frequency	%
1. Educational background		
No Formal Education	Nil	Nil
Primary Education	09	3.6
School Cert./Teachers Colleges	43	17.2
OND/NCE	107	42.8
HND/University Degree	86	34.4
Masters Degree/Ph.D.	05	2.0
Total	250	100
2. Chronological Age Range		
25-29 years	27	10.8
30-34 years	21	8.4
35-39 years	64	25.6
40-44 years	79	31.6
45-49 years	59	23.6
Total	250	100
3. Number of Children		
One	52	20.8
Two	75	30.0
Three	61	24.4
Four	34	13.6
Five and above	28	11.2
Total	250	100
4. Duration in Marriage		
0-4 years	49	19.6
5-9 years	63	25.2
10-14 years	116	46.4
15 and above	22	8.8
Total	250	100
5. Husbands' History of Alcohol Use		
Non-Alcoholics/Never	42	16.8
Occasional Drinker	71	28.4
Moderately	106	42.4
Chronic/Alcohol Addicts	31	12.4
Total	250	100
6. Witness Inter-parental Violence in Childhood		
I don't know/remember	101	40.4
No	82	32.8
Yes	57	26.8
Total	250	100

Source: Field survey, 2009

Table 2 indicates that a combination of the eight independent variables (health insurance policy, health care utilization, health behaviours, welfare policies and reforms, bargaining position of women, work requirement, less use of preventive care, and health requirement) in predicting maternal health and wellbeing of mothers gave a co-efficient of multiple regression (R) of 0.683 and a multiple R-Square (R²) of 0.467. The result shows that 46.7% of the variance in the prediction of maternal health and wellbeing is accounted for by the independent variables. Table 2 also indicates that the analysis of variance of the multiple regression data gave an F- ratio of 57.241 significant at 0.05 level of confidence.

Table 2: Regression analysis showing the joint contribution of welfare and child support on maternal health and wellbeing

Source of variation	Sum of squares	DF	Mean square	F	Sig.
Regression	189.364	3	63.121	57.241	.000
Residual	216.136	246	1.103		
Total	405.500				

Regression (R) = .683, Regression square = .467, Adjusted R square = .459, Std. Error of the Estimate = 1.05011

*Significant at 0.05 alpha level.

The results from Table 3 show that the χ^2 calculated values for health insurance policy (22.01) is greater than the χ^2 tabulated value (21.026), while the χ^2 calculated value for welfare policies and reform (45.83) is greater than the χ^2 tabulated value (38.885). Health care utilization and health behaviour were not significantly related to maternal health and wellbeing among women.

Table 3: Chi-Square analysis showing the influence of welfare support and maternal health and wellbeing among women

Variables	χ^2 cal	χ^2 tab	DF	Level of significance	Decision	Contingency coefficient
Health insurance policy	22.01	21.026	1	0.05	S*	0.0140
Health care utilization	28.43	43.776	4	0.05	NS	0.0157
Health behaviour	16.34	43.773	3	0.05	NS	0.0204
Welfare policies and reforms	45.83	38.885	1	0.05	S*	0.0189

*Significant at 0.05 alpha level.

The results in Table 4 show that there is a significant relationship between work requirement (r- value = 0.282, $p < 0.05$), less use of preventive care (r- value = 0.269, $p < 0.05$), and health requirement (r- value = 0.324, $p < 0.05$), while bargaining position of mothers was not significant.

Table 4: Correlation analysis showing the linear relationship between child support and maternal health and wellbeing among women

Variables	Pearson correlation coefficient R	Coefficient of determination r^2	Decision	Percentage contribution %
Bargaining position of mothers	-0.042	0.001764	NS	0
Work requirement	0.282*	0.079524	S*	7.9
Less use of preventive care	0.269*	0.072361	S*	7.2
Health requirement	0.324**	0.104976	S*	10.4

Source: Field survey, 2009]

*Significant at 0.05 level of significance

**Significant at 0.01 level of significance

Discussion of findings

The results obtained showed that a combination of health insurance policy, health care utilization, health behaviours, welfare policies and reforms, bargaining position of mothers, work requirement, less use of preventive care, and health requirement, when taken together, seemed to be effective in predicting maternal health and wellbeing among women. The observed F-ratio of 57.241, significant at 0.05 level, is evidence that the effectiveness of a combination of the independent variables in the prediction of maternal health and wellbeing among women could not have occurred by chance. Furthermore, the coefficient of multiple correlation of 0.683 and a multiple R- square of 0.467 showed the magnitude of the relationship between welfare and child support and the combination of the independent variables. The results indicated that a linear relationship of the independent variables accounted for only 46.7% of the total variance in maternal health and wellbeing among women.

Based on the above, the results agree with the findings reported by Lennon et al. (2002), Fertig et al. (2006), and Garrett and Holahan (2000). However, the result is at variance with findings reported by Bitler et al. (2005). Institute of Medicine (2002) reported that all the independent variables (of health insurance policy, health care utilization, health behaviours, welfare policies and reforms, bargaining position of mothers, work requirement, less use of

preventive care, and health requirement) were consistently related to maternal health and wellbeing among women.

The results in Table 3 revealed the chi-square relationship of welfare and child support and the independent variables. The results showed that health insurance policy and welfare policies and reforms contributed significantly to the prediction, whereas health care utilization and health behaviour did not. Another finding from this study, that health insurance policy was a major predictor of maternal health and wellbeing, supports the work of Levy and Meltzer (2004), Cawley et al. (2006), and Fertig et al. (2006). A surprising finding from this study is that health care utilization and health behaviour were not significant predictors of maternal health and wellbeing. This finding is at variance with the work of previous researchers such as Bitler et al. (2005) and Kaestner and Kaushal (2003).

The results in Table 4 revealed the correlation relationship between the independent variables and maternal health and wellbeing among mothers. The results showed that work requirement, less use of preventive care, and health requirement contributed significantly to the prediction of maternal health and wellbeing, while bargaining position of mothers did not. The significant position of work requirement, less use of preventive care, and health requirement were in agreement with the findings of Lennon et al. (2002) and Chavkin et al. (2000).

Implication for counselling

The findings from this study have implications for counselling psychologists, health workers, and social workers among women and adolescents of reproductive age. First, there is the need for those in these helping professions to identify variables as health insurance policy, health care utilization, health behaviours, welfare policies and reforms, bargaining position of mothers, work requirement, less use of preventive care, and health requirement among women, because these variables relate to maternal health and wellbeing. Once these variables are identified through assessment and personal counselling, giving appropriate intervention assistance to women having maternal health and wellbeing problems will be possible. Secondly, mothers and adolescents of reproductive age should seek personal counselling in order to handle maternal health problems. In addition, health counsellors should provide a supportive relationship for personal development towards total health. Thirdly, women should be encouraged to participate in group counselling experiences to reduce problems related to maternal health and wellbeing.

Biography

*Dr David Oladeji is a lecturer in Obafemi Awolowo University, Ile-Ife, Nigeria.
E-mail: dijideji@yahoo.co.uk*

*Mrs Kudirat Bakare is currently a lecturer in Obafemi Awolowo University,
Ile-Ife, Nigeria. E-mail: bissibakare@gmail.com*

References

- Bitler, M. P., Gelbach, J. B., & Hoynes, H. W. (2005). Welfare reform and health. *Journal of Human Resources*, 40(2), 309-334.
- Blank, R. (2002). Evaluating welfare reform in the United States. *Journal of Economic Literature*, 40(4), 1105-1166.
- Cawley, J., Schroeder, M., & Simon, K. (2006). How did welfare reform affect the health insurance coverage of women and children? *Health Services Research*, 41(2), 486-506.
- Chavkin, W., Romero, D., & Wise, P. (2000). State welfare reform policies and declines in health insurance. *American Journal of Public Health*, 90(6), 900-908.
- Fertig, A., Garfinkel, I., & McLanahan, S. S. (2006). Child support enforcement and domestic violence among non-cohabiting couples. *Center for Research on Child Wellbeing Working Paper #2002-17-FF*. Princeton University.
- Garrett, B., & Holahan, J. (2000). Health insurance coverage after welfare. *Health Affairs*, 19(1), 175-184.
- Institute of Medicine. (2002). *Care without coverage: Too little, too late*. Washington, D.C.: National Academies Press.
- Jayakody, R., & Stauffer, D. (2000). Mental health problems among single mothers: Implications for work and welfare reform. *Journal of Social Issues*, 56(4), 617-634.
- Kaestner, R., & Kaushal, N. (2003). Welfare reform and health insurance coverage of low-income families. *Journal of Health Economics*, 22(6), 959-981.
- Kaestner, R., & Lee, W. C. (2005). The effect of welfare reform on prenatal care and birth weight. *Health Economics*, 14(5), 497-511.
- Kaestner, R., & Tarlov, E. (2006). Changes in the welfare caseload and the health of low-educated mothers. *Journal of Policy Analysis and Management*, 25(3), 623-643.
- Kaplan, G. A., Siefert, K., Ranjit, N., Raghunathan, T. E., Young, E. A., Tran, D., ... & Tolman, R. (2005). The health of poor women under welfare reform. *American Journal of Public Health*, 95(7), 1252-1258.
- Lennon, M. C., Blome, J., & English, K. (2002). Depression among women on welfare: A review of the literature. *Journal of the American Medical Women's Association*, 57(1), 27-32.
- Levy, H., & Meltzer, D. (2004). What do we really know about whether health insurance affects health? In C. G. McLaughlin (Ed.), *Health policy and the uninsured* (pp. 1-7). Washington, D.C.: Urban Institute Press.
- Nepomnyaschy, L., & Garfinkel, I. (2006). *Fathers' contributions to their nonmarital children*. Center for Research on Child Wellbeing Working Paper #2006-09-FF. Princeton University.

Polit, D. F., London, A. S., & Martinez, J. M. (2001). *The health of poor urban women: Findings from the project on devolution and urban change*. New York: MDRC.

*Aesthetic preferences for textile colour and print pattern
between US and Japanese consumers*

Makiko Takagi, Molly Eckman, Kenneth Tremblay

Synovate Market Research, Colorado State University

Abstract

As the textiles and apparel industry has internationalized, understanding of similarities and differences in apparel-purchasing behaviour is important for success in global markets. Previous research found that aesthetic attributes are important criteria in consumers' evaluation of textiles and apparel products and aesthetic evaluation of textiles is influenced by culture. However, little research has examined consumer preferences for aesthetic attributes with multiple design variables, or how culture, especially national culture, influences aesthetic appraisals. This research examined the influence of nationality on the appraisal of two aesthetic attributes (colour and print pattern) of textiles. The Engel, Miniard, and Blackwell model of consumer decision processes was the framework for the study. The mall-intercept method was used to collect data from female consumers in Denver, US (n=102) and Yokohama, Japan (n=106). Among demographic characteristics only nationality influenced colour preferences; nationality and age influenced print pattern preferences. Differences in colour preferences were more pronounced than in print pattern preferences. Criteria used for U.S. and Japan consumers' evaluation of textiles also differed. Relationships among cultural characteristics and aesthetic preferences for each nationality were also discovered. Understanding aesthetic preferences can help international marketers and manufacturers and domestic companies provide products that satisfy the needs of target markets.

Keywords: Aesthetics, colour, print, nationality, culture

Introduction

According to an industry profile of Global Apparel and Textiles (Datamonitor, 2010), four leading companies in the global textiles and apparel industry, based on global market share, are Gap, Inc., Hennes & Mauritz AB, Intindex SA, and PPR. All these leaders are engaged in worldwide enterprises through manufacturing and marketing. As such, none is able to operate in monocultural isolation. Today, the textiles and apparel industry is considered one global sector. As the industry has internationalized, consumers are increasingly purchasing imported products. Success in the global market requires an understanding of the similarities and differences in consumers' apparel-purchasing behaviour and the development of marketing strategies based on these differences. Although national culture has been identified as an important variable for market segmentation, little research has been conducted that provides implications for modifying product attributes to meet local consumers' needs. Aesthetic attributes, such as styling and colour, are important criteria in consumers' evaluation of textile and apparel products (Eckman, Damhorst, & Kadolph, 1990; Hines & Swinker, 2001; Hsu & Burns, 2002). However, research related to aesthetic preferences is generally confined

to single design variables (Lind, 1993; Radeloff, 1991; Shoyama, Tochihara, & Kim, 2003). A quantitative examination of consumer preferences for aesthetic attributes with the interactions among visual elements seems lacking.

When consumers make purchasing decisions they think, evaluate, and act. Those activities are influenced by internal and external factors. Blackwell, Miniard, and Engel's (2001) consumer decision process model (EBM) represents interactions among various factors and consumer behaviour. The model consists of seven stages: need recognition, information search, pre-purchase evaluation of alternatives, purchase, consumption, post-purchase evaluation, and divestment. Individual influences (e.g., demographics), environmental influences (e.g., culture), and psychological processes (e.g., information processing) influence consumer decision making at each stage.

The EBM model suggests that culture impacts all stages of the decision-making process. For example, apparel and appearance tend to be distinctive by culture (Harris & Moran, 1996), and culture impacts consumers' apparel selection (Marshall, Jackson, Stanley, Kefgen, & Touchie-Specht, 2004). Culture is defined as "a set of values, ideas, artifacts, and other meaningful symbols that help individuals communicate, interpret, and evaluate as members of society" (Blackwell et al., 2001, p. 314). Macroculture, such as national culture, applies to an entire society or to most of its citizens and is influenced by nationality and regional identity. Microculture is influenced by such characteristics as age and ethnicity. The US consists of a diverse ethnic microculture; Japan is a homogeneous society (Blackwell et al., 2001). Both macroculture and microculture impact consumers' decisions, including preferences for and choices of products they purchase (Blackwell et al., 2001; Wilkie, 1994).

Culture

With the globalization of the world economy, marketers and researchers have recognized how culture, especially nationality, affects consumer behaviour (e.g., Bao, Zheng Zhou, & Su, 2003; Blackwell et al., 2001). Hofstede (1984) postulated four dimensions of national culture, which provide a basis for comparing the influence of national culture on individual behaviour, which have implications for conducting business across cultures, including how information is processed, acceptance of new ideas, and purchase behaviour. These four dimensions are individualism-collectivism (the relationship with others in society), power distance (degree of acceptance of power inequality), masculinity-femininity (extent of importance to achievement/assertiveness versus nurturing/modesty), and uncertainty avoidance (the reaction to ambiguity or uncertainty about the future).

Bao et al. (2003) examined the influence of two dimensions of national culture, face consciousness and risk aversion, on U.S. and Chinese consumers. Using Hofstede's (1984) typology as a framework, the researchers found that both face consciousness and risk aversion influenced U.S. and Chinese consumers' decision-making styles. Face consciousness is a desire for enhancement and maintenance of social self-worth or avoidance of losing face in a relationship with others in a society (Bao et al., 2003). In an individualistic culture (e.g., US) personal self is an independent entity and decision making depends on the individual. In collectivistic cultures (e.g., Japan) group membership affects personal preference and choice of products (Blackwell et al., 2001). Therefore, people in collectivistic cultures tend to have

stronger face consciousness than do those in individualistic cultures. Bao et al. (2003) found a positive relationship between face consciousness and novelty and fashion-conscious orientation.

Risk aversion is the willingness to avoid risks and uncertainty (Sternquist, 1998). People with high risk aversion tend to fear risky, ambiguous situations more than low risk aversion individuals do. In a collective culture, behaviour that sustains group orientation is desirable, and risk-taking behaviour may challenge that harmony. In an individualistic culture, risk-taking behaviour affects only individual merit and people tend to have less risk aversion. New products are associated with an uncertainty that the established products lack. Therefore, consumers with high risk aversion may be less novelty- and fashion-conscious than are consumers with low risk aversion.

Numerous studies have found that microcultural factors, such as age, education, ethnicity, gender, and income, influence consumers' decision making (e.g., Blackwell et al., 2001; Kim & Kang-Park, 1995; Lee, Fairhurst, & Dillard, 2002; Shim, 1996; Wickliffe, 1998). Segmenting consumers by microcultural factors assists marketers and researchers in profiling consumers, understanding changing needs, and developing marketing strategies for market share expansion to specific target markets (Wickliffe, 1998).

Culture impacts consumers' apparel selection (Harris & Moran, 1996; Marshall et al., 2004). Nationality, which is a macrocultural element, affects aesthetic evaluation of apparel products (Cheng, 1997; Hyllegard & Morgado, 2001; Moreno, 1997). Microcultural elements, such as age and ethnicity, also affect aesthetic evaluation of apparel products (Eckman & Wagner, 1994; Littrell, 1980; O'Neal, 1997). The present study, using the EBM model as a framework, examines the interaction between cultural influence and consumers' appraisals of aesthetic attributes of textiles. Textiles and consumer behaviour are both important subjects for study in the discipline of home economics.

Literature review

Aesthetics

Aesthetic attributes are important to the pre-purchase alternatives evaluation stage in the consumer decision-making process; aesthetic attributes of apparel are important criteria in consumers' evaluation and consumption of products (Eckman et al., 1990; Friend, Farney, & Rabolt, 1989; Hines & Swinker, 2001; Hsiao & Dickerson, 1995; Hsu & Burns, 2002; Kawabata & Rabolt, 1999; Lee & Burns, 1993). Apparel products consist of the interactions among silhouette, design details, and fabric (Sproles & Burns, 1994). Trends of design details and fabrics change almost every year (Pantone, 2007). Aesthetic preference consists of a consumer's positive evaluation of aesthetic qualities over the other characteristics (Fiore & Kimle, 1997). A study of aesthetic preferences for Hawaiian printed fabrics (Hyllegard & Morgado, 2001) compared evaluations by consumers of five nationalities. The results indicated cross-national differences in colour and print preferences for aloha shirts. The researchers suggested that understanding visitors' preferences would help local marketers and manufacturers to approach tourists and local consumers as heterogeneous cultural groups and better satisfy the needs and preferences of both markets in Hawaii.

Studies of colour preferences have been conducted for more than 100 years. Entire studies have focused on the most preferred colours (Fehrman & Fehrman, 2004). For example, using the Munsell colour system, Lind (1993) explored preferences for apparel. Purple-blue and blue were ranked high and green was ranked low. Compton's (1962) study of colour and design preferences in apparel fabrics revealed that students who preferred deep shades and saturated colours scored higher in sociability. Duntley (1982) examined how apparel colour affects first impressions of personality traits; cool colours tended to communicate more favourable personality traits than warm colours did.

A cross-national study of colour preferences among consumers in eight countries (i.e., Austria, Brazil, Canada, Colombia, Hong Kong, China, US, and Taiwan), revealed that blue was the most preferred colour (Madden, Hewett, & Roth, 2000). Studies that compared consumers of various nationalities found that national culture, in addition to colour attributes, influenced colour preference. For example, participants in Korea, Taiwan, Indonesia, China, and Japan, when asked to select the three most preferred colours and the three least preferred colours from 77 colours in the Munsell colour system, indicated that blue was the universal favourite colour and showed a strong preference for white (Saito, 1996a, 1996b; Soma & Saito, 1996). At the same time, Japanese individuals revealed unique colour preferences in their partiality for pale tone colours such as pale blue and pale green, and non-preference for yellow red, light grey, and dull tone colours. Colour is also an important product attribute (Madden et al., 2000). In their apparel study, Hyllegard and Morgado (2001) found strong preferences for blue in Aloha shirts among all five nationalities tested (i.e., Australian, Chinese, Japanese, Korean, and American); subjects showed low preferences for yellow and black.

Patterns in fabric are comprised of motifs, size of motifs, layout, and colours. Layout includes direction of motifs, space between motifs, and arrangement of motifs. Arrangements of motifs are either formal (i.e., regular repetition of motifs in a pattern) or informal (i.e., irregular placement of motifs). Space between motifs means a proportion of background and spaces of motifs. Interest is created when the ratio of background and space occupied by motifs is different. Fabric designers classify patterns as conversational, floral, ethnic, and geometric (Marshall et al., 2004). Conversational patterns are created with motifs of real creatures and objects, except flowers; floral patterns include flowers and plants and are considered the oldest and most frequently printed design; ethnic patterns represent any pattern related to ethnic groups; and geometric patterns include abstract designs in which motifs are non-representational and shapes may be unrealistic.

In the study of the relationship between personal attributes and colour and design preferences, Compton (1962) found that students who preferred small motifs tended to score higher on good impression personality in the California Psychological Inventory, and on femininity. Hyllegard and Morgado's (2001) study revealed that almost half of the participants preferred the small Hawaiian prints, 28% preferred medium prints, and 6% preferred large prints. Korean participants preferred flower garden prints and U.S. subjects preferred tapa cloth prints. Differences also existed by nationality in participants' preferences for floral, beach, and tapa prints.

Differences in aesthetic preferences may arise from different perceptions of aesthetics among cultures (Fiore & Kimle, 1997). While European and North American cultures believe that aesthetics stimulate and/or evoke the internal feelings and thoughts and aesthetic preference is influenced by the qualities of aesthetic objects, Japanese culture perceives aesthetics as a medium to calm oneself. Aesthetic preferences depend on inner feelings and thoughts of self-reflection in Japanese culture (Deutsch, 1975). Those unique perceptions of aesthetics have distinguished traditional appearances and influenced fashion change among cultures. The end of national isolation by the U.S. - Japan Treaty of Peace and Amity in 1853 and the Meiji Restoration in 1868 helped western clothes flow into Japan and, subsequently, the modernization of Japanese fashion began. The westernization of Japanese fashion occurred slowly but certainly spread from the top to the bottom of society because western apparel had more practical features than kimono did. Because Japanese culture exhibits different perceptions in aesthetics from western culture and Japanese fashion reflects unique combinations of western and traditional Japanese fashion, Japanese consumers could have distinct aesthetic preferences for apparel (Kondo, 1995).

It is believed that a unique perception of colours also exists in Japan (e.g., Saito, 1996a). The Japanese aesthetic of colour has been influenced by the early agrarian society's concern with nature and the four seasons as well as the influence of Shintoism, which practices a strong respect of nature, seasonal flowers, and plants. The majority of the traditional colour terms derive from seasonal vegetable dyes, flowers, and plants. Although the Japanese way to perceive colours changed as time passed, there are remnants of unique perception in colours. For instance, while children paint the sun in yellow in most countries, Japanese children tend to use red for drawing the sun (Hibi & Fukuda, 2000). In Japan, there may be a wide variety of additional factors, such as personality, that could influence colour preferences.

Purpose

This study was conducted to test the premise that national culture affects consumers' appraisal of textiles. Because colour and pattern are important criteria to move a consumer positively toward a purchase decision, this study focused on evaluating the influence of national culture on colour and print pattern of textiles, and to identify consumers' preferences for aesthetic attributes.

Japanese and U.S. populations were targeted. This bi-national approach resembles that of Kawabata and Rabolt (1999) who examined apparel purchase behaviour by U.S. and Japanese female students; however, the framework of this study is substantially different. It is important to note that the US has a national culture composed of a more ethnically heterogeneous population than does Japan. Therefore, the effect of Japanese nationality on aesthetic preferences may be more pronounced. Additionally, Japan is an important trading partner with the US. Total textile and apparel trade to Japan in 2009 was 466.79 million dollars and Japan was the sixth largest importer of U.S. textiles and apparel (Office of Textiles and Apparel, 2006). As such, a US - Japan focus is quite relevant. The goal was to examine how nationality affects preferences for two aesthetic attributes (colour and print pattern) of textiles among U.S. and Japanese consumers.

Method and description of participants

The literature suggests that culture, especially national culture, influences aesthetic preferences. The literature also reveals a lack of research on consumer preferences for aesthetic attributes with multiple design variables. Therefore, this research examined the influence of nationality on the appraisal of two aesthetic attributes (colour and print patterns) of textiles. The research questions were:

1. Are there differences in aesthetic preferences for colour and print pattern of textiles between U.S. and Japanese consumers?
2. What criteria influence these aesthetic preferences toward textiles?
3. Do demographic characteristics (microculture) influence aesthetic preferences toward textiles?
4. Do cultural characteristics (macroculture) influence aesthetic preferences toward textiles?

Aesthetic preferences for visual attributes are the dependent variables. Demographics and cultural characteristics are the independent variables.

Holbrook (1983) suggested that when consumers evaluate products, a complicated interaction of a variety of cues in the shopping environment influences their decision. Therefore, the purchase setting plays an important role in encouraging accuracy of response to product evaluation. Thus, the mall-intercept method was used to collect data. Two malls were selected: one in Denver, US, and the other located in Yokohama, Japan. Each mall offers several hundred retail stores, boutiques, salons, and a large space for community events. Because generations X and Y tend to put a priority on apparel in spending choices (Marshall et al., 2004), the participants for this research consisted of U.S. and Japanese female consumers, aged between 18 and 41. The total number of participants was 208, with 102 recruited in the US and 106 in Japan.

Participants evaluated visual images of colour and print patterns (during August in Japan and September in the US) based on textile and apparel trend forecasts for the 2006/2007 fall and winter season, provided by Cotton Incorporated, a trade association that forecasts trends for the textile and apparel industry. Colours were categorized under six stories and each story included six colours. Print patterns consisted of five stories and each story included three images. The questionnaire included three sections: colour preferences, print pattern preferences, and participants' information including demographic and cultural characteristics. The questionnaire was written in English first and then translated into Japanese.

The cover letter for the questionnaire informed participants that the research was being conducted to understand aesthetic preferences for textiles; no specific product was identified as colour preferences should be investigated without association with a particular object (Saito, 1996a). The word "textiles" was used throughout the questionnaire. Participants were

shown visual images and descriptions of colour stories (see Figure 1). Participants read the descriptions and answered the questions. Participants stated the degree of their perceived attractiveness for each colour story and then evaluated each colour (a total of 36 colours) on 7-point Likert-type item scales. Then, participants selected the three most attractive colours, recorded the colour names in order of attractiveness, and recorded the reasons for their choices. After answering the colour attractiveness questions, participants were shown visual images and descriptions of print patterns (see Figure 2). Participants read the descriptions and answered the questions. Participants indicated the degree of perceived attractiveness for each story on 7-point Likert-type item scales, selected one top choice from the print stories, and recorded the reason for their choice.

Finally, participants answered questions about themselves, which focused upon demographic information and cultural characteristics (i.e., risk aversion, face consciousness, sociability, and femininity). The exchange rate at the time of the survey was used to convert items addressing income and apparel purchase expenses. Prior to data collection the instrument was pre-tested with U.S. and Japanese individuals from generations X and Y.

Quantitative data analyses of the rating scales and demographics consisted of descriptive statistics. A free response format for the open-ended questions encouraged participants to use a wide variety of descriptors of their top choices among colours and prints; content analysis enabled the examination of qualitative data concerning participants' descriptions of their preferred aesthetic attributes. Because it is possible that differences in aesthetic preferences arise from different perceptions of aesthetics among cultures, qualitative data may lead to a better understanding of influences on aesthetic preferences between U.S. and Japanese cultures.

Triangulation of data (data were collected and analysed through participants' written free responses, statistical data, and perceptions of visual images based on apparel trend forecasts) helps enhance reliability and verification of the study (Cresswell, 2007; Willis, 2007). A bilingual student served as a peer examiner for translation of the research instrument from English to Japanese and of participants' free responses from Japanese to English to prevent researcher's bias and misinterpretation. A code/re-code procedure (the researcher coded the data, then waited for a period of time, and re-coded the data) and inter-rater reliability (a second researcher coded the open-ended responses which were then compared with the original codes) were important in order to provide clear and accurate descriptions (Cresswell, 2007).







INTRIGUE	PROVOCATEUR	MUSE	DESTINATION	TRIUMPH	EXPRESSION
 <p>Double Agent PANTONE 19-4006 TC</p> <p>Magnum PANTONE 17-0000 TC</p> <p>White Lies PANTONE 11-0604 TC</p> <p>Sable PANTONE 16-1221 TC</p> <p>Martini PANTONE 13-4305 TC</p> <p>Envy PANTONE 16-6339 TC</p>	 <p>Dowager Empress PANTONE 19-1664 TC</p> <p>Paramour PANTONE 19-1656 TC</p> <p>Smoldering PANTONE 18-1536 TC</p> <p>Unmentionables PANTONE 15-1512 TC</p> <p>Mystique PANTONE 18-1415 TC</p> <p>Dark Chocolate PANTONE 19-0712 TC</p>	 <p>Will-o-the-Wisp PANTONE 16-0639 TC</p> <p>Marble PANTONE 14-1112 TC</p> <p>Goddess PANTONE 16-1310 TC</p> <p>Daydream PANTONE 13-1020 TC</p> <p>Silver Lining PANTONE 14-4203 TC</p> <p>Illuminate PANTONE 12-0825 TC</p>	 <p>Laguna PANTONE 18-4018 TC</p> <p>Painted Desert PANTONE 16-1350 TC</p> <p>Terrain PANTONE 18-1022 TC</p> <p>Treasure PANTONE 16-0950 TC</p> <p>Galaxy PANTONE 19-3810 TC</p> <p>Currency PANTONE 15-6310 TC</p>	 <p>First Place PANTONE 17-4030 TC</p> <p>Adrenaline PANTONE 13-1008 TC</p> <p>Torch PANTONE 17-1553 TC</p> <p>Shooting Star PANTONE 13-0850 TC</p> <p>Benched PANTONE 19-1334 TC</p> <p>Royal PANTONE 19-3864 TC</p>	 <p>Toxic PANTONE 12-0435 TC</p> <p>Teardrop PANTONE 17-3930 TC</p> <p>Lip Gloss PANTONE 19-3138 TC</p> <p>Looking Glass PANTONE 16-5418 TC</p> <p>Jaded Ivy PANTONE 19-4535 TC</p> <p>Broken Heart PANTONE 13-1407 TC</p>
<p>A sophisticated palette that piques curiosity.</p> <p>Neutral shades accented by electric green adds a touch of eccentricity.</p> <p>Daring, distinctive and stylish.</p> <p>Traditional meets progressive.</p>	<p>Rich, passionate tones make the heart beat faster.</p> <p>Theatrical reds that are powerful and dramatic.</p> <p>Feverish and flushed.</p> <p>Succulent shades create warmth.</p>	<p>Inspiration that stimulates your inner being.</p> <p>Muted tones, Zen-like and meditative.</p> <p>Peaceful slumber gives way to sweet dreams.</p> <p>Shimmering peach and luminous yellow; exquisite and angelic.</p>	<p>Exotic adventures and globetrotting escapades.</p> <p>The classic charm of a vintage postcard.</p> <p>Golden tones are luxurious and deeply saturated.</p> <p>Sophisticated and worldly.</p>	<p>Nostalgic shades that celebrate past achievements.</p> <p>Keen and energetic.</p> <p>Natural tones play second string to vibrant hues.</p> <p>Bold brights and brilliant blues.</p>	<p>Untamed creativity.</p> <p>Intense colors with a hint of rebellion.</p> <p>Cool cosmetic shades.</p> <p>Whimsical yet edgy, electrifying.</p>

Figure 1: Colour stories and individual colours.

SUBDUED	RECOLLECTION	ABSTRACTED	ROMANTIC	BUSYBODY
<p>Mosaic and tile effects</p> <p>Softened with subtle color</p> <p>Printed over, worn and washed out</p> <p>Understated patterns</p>	<p>1930's & 1940's inspired styling</p> <p>Flat yet conveying great detail</p> <p>Revival of historical textile patterns</p> <p>Prints mimic woven patterns</p>	<p>Blurred perceptions</p> <p>Warp and ikat prints</p> <p>Mottled background</p> <p>Sliced and streaky effects</p>	<p>Romance conveyed in both poetic and dark themes</p> <p>Updated English florals</p> <p>Dark grounds</p> <p>Oriental inspired florals</p>	<p>Small-scale, concentrated patterns</p> <p>Meandering, lacking point of reference</p> <p>Nature taken out of context</p> <p>Florals in discordant colors</p>

Figure 2: Print pattern stories

Characteristics of participants

Data were collected on weekends during successive months in late August (Japan) and then two weeks later in September (US). The average high temperatures in the data locations were similar (Japan, 84 degrees; US, 77 degrees). The average low temperatures differed somewhat (Japan, 76 degrees; US, 48 degrees). A total of 100 U.S. female consumers returned usable questionnaires. Ninety-one percent of U.S. participants answered that they were white. The mean age was 29 years. A majority of respondents had a bachelor's degree or higher (74%) and incomes between \$25,000 and \$74,999 (54%). Fifty-one percent of the respondents reported annual apparel purchase expenses in the range of \$1,000 to \$4,999.

A total of 104 Japanese consumers returned usable questionnaires. Ninety-eight percent of the participants reported their ethnicity to be Japanese. The mean age of respondents was 28 years. Half of the respondents (50%) held a bachelor's degree or higher and 40% had incomes in the range of \$25,000 to \$74,999. A majority (62%) of the respondents had annual apparel expenditures between \$1,000 and \$4,999.

Chi-squares were calculated to test for differences in demographics between U.S. and Japanese respondents. Results revealed differences with regard to education ($X^2=29.58$, $p<.001$) and household income ($X^2=26.06$, $p<.001$), with U.S. respondents having higher levels than Japanese respondents. However, there were no significant differences in the other demographic characteristics.

Three items were adapted from Bao et al. (2003) to examine consumers' general tendency to avoid uncertainty (e.g., "I am cautious in trying new/different products"). The reliability of the risk aversion scale was .676 (Cronbach's Alpha). A higher score equals greater risk aversion in consumption. Japanese respondents ($M=4.56$) tended to be more risk averse than were U.S. respondents ($M=3.80$) ($t=3.839$; $p<.001$). The results are consistent with findings in the literature, which indicate that people in a collectivistic culture have more risk aversion.

Four items measured consumers' face consciousness (e.g., "It is important that others like the products and brands I buy") (Bao et al., 2003). The higher score means consumers have a higher degree of face consciousness. Reliability of the scale was .737 (Cronbach's Alpha). According to Bao et al. (2003), people in a collectivistic culture tend to have stronger face consciousness than do those in an individualistic culture. However, U.S. respondents ($M=3.32$) in this study were more face conscious than were Japanese respondents ($M=2.72$) ($t=-3.368$; $p<.001$).

The sociability scale (Reynolds & Beatty, 1999) consisted of seven items (e.g., "I like to be with people"). Reliability of the sociability scale was .798 (Cronbach's Alpha). U.S. respondents ($M=2.54$) were more sociable than Japanese respondents ($M=3.38$) ($t=6.193$, $p<.001$).

Reliability of the sexual identity scale (Stern, Barak, & Gould, 1987) was .756 (Cronbach's Alpha). Four items comprised the scale (e.g., "I feel as though I am ..."). U.S. respondents

($M=3.81$) viewed themselves as more feminine than did Japanese respondents ($M=3.04$) ($t=-10.891$, $p<.001$).

Results

Colour preferences

Table 1 reveals differences between U.S. and Japanese participants for all six colour stories. U.S. respondents considered Intrigue ($t=6.727$), Provocateur ($t=3.408$), and Destination ($t=3.040$) more attractive than did Japanese respondents. On the other hand, Japanese respondents preferred Muse ($t=-2.017$), Triumph ($t=-3.049$), and Expression ($t=-3.434$) more than did U.S. respondents.

Table 1: Comparison of perceived attractiveness of colour stories between Japan and U.S. participants

	U.S.		Japan		T-test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
INTRIGUE	2.69	1.46	4.19	1.71	6.727***
PROVOCATEUR	2.63	1.52	3.37	1.56	3.408***
DESTINATION	3.39	1.46	4.05	1.63	3.040**
MUSE	3.97	1.71	3.50	1.62	-2.017*
TRIUMPH	4.34	1.50	3.64	1.75	-3.049**
EXPRESSION	3.83	1.75	3.02	1.63	-3.434***

* $p<.05$; ** $p<.01$; *** $p<.001$; Range: 1= Very attractive to 7= Very unattractive

The two nationalities differed in their perceptions of the attractiveness of 27 out of 36 individual colours (see Table 2). Of the 27 colours that the two groups perceived differently, U.S. respondents considered 17 colours to be more attractive than did Japanese respondents; Japanese respondents perceived 10 colours to be more attractive.

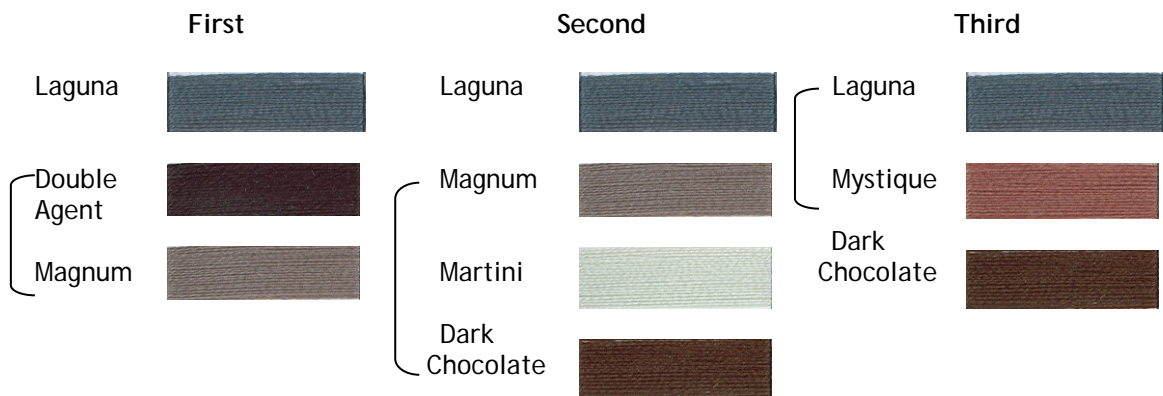
Table 2: Comparison of perceived attractiveness of colours between Japan and U.S. participants

		U.S.		Japan		T-test
		M	SD	M	SD	
Intrigue	Double Agent	2.37	1.54	3.36	1.55	4.57***
	Magnum	2.69	1.60	3.90	1.47	5.655***
	White Lies	2.72	1.42	3.53	1.58	3.843***
	Sable	3.20	1.60	3.68	1.55	2.185*
	Martini	3.01	1.52	3.81	1.70	3.526***
	Envy	3.51	1.94	3.68	1.87	.647
Provocateur	Dowager Empress	3.37	1.79	3.59	1.83	.854
	Paramour	2.66	1.63	3.54	1.71	3.753***
	Smoldering	3.17	1.72	3.47	1.71	1.252
	Unmentionables	3.04	1.66	3.51	1.69	2.003*
	Mystique	2.68	1.58	3.52	1.74	3.606***
Muse	Dark chocolate	2.23	1.40	3.19	1.50	4.743***
	Will-o-the-Wisp	4.44	1.99	3.35	1.67	-4.269***
	Marble	3.57	1.57	3.87	1.51	1.373
	Goddess	3.44	1.51	3.88	1.52	2.101*
	Daydream	3.74	1.62	3.14	1.68	-2.578*
	Silver Lining	3.28	1.42	3.92	1.55	3.085**
	Illuminate	3.95	1.72	3.38	1.66	-2.388*
Destination	Laguna	2.40	1.48	3.49	1.89	4.571***
	Painted Desert	3.89	1.81	3.03	1.69	-3.513***
	Terrain	3.59	1.55	3.85	1.47	1.21
	Treasure	4.35	1.74	3.98	1.55	-1.602
	Galaxy	2.76	1.48	3.67	1.84	3.905***
	Currency	3.26	1.50	4.03	1.74	3.376***
Triumph	First Place	3.45	1.77	2.97	1.69	-1.981*
	Adrenaline	3.58	1.35	4.04	1.57	2.233*
	Torch	4.45	1.71	3.91	1.80	-2.181*
	Shooting Star	4.98	1.27	3.68	1.76	-6.018***
	Benched	4.00	1.71	4.71	1.43	3.225***
Expression	Royal	3.71	1.77	3.73	1.72	.085
	Toxic	4.44	2.00	3.38	1.89	-3.913***
	Teardrop	3.19	1.50	2.90	1.45	-1.384
	Lip Gloss	3.94	1.71	3.52	1.80	-1.71
	Looking Glass	3.42	1.81	2.82	1.59	-2.531*
	Jaded Ivy	2.80	1.55	3.65	1.76	3.67***
	Broken Heart	3.86	1.54	3.38	1.66	-2.166*

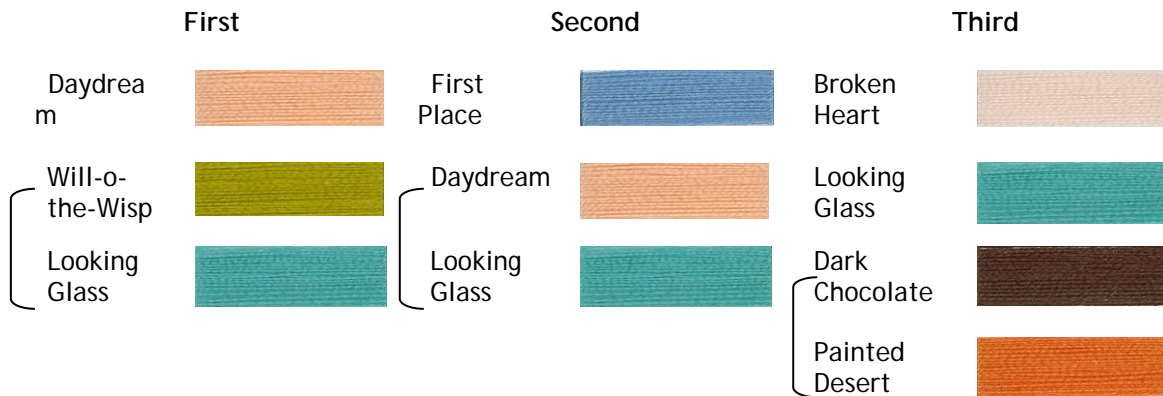
* p < .05 ; ** p < .01 ; *** p < .001 Range: 1= Very attractive to 7= Very unattractive

U.S. respondents' first three colour choices were Laguna (11.0%) and Double Agent and Magnum (both 9.0%), while colours selected by Japanese respondents were Daydream (8.7%) and Will-o-the-Wisp and Looking Glass (both 7.7%) (see Figure 3). Colours selected by U.S. respondents tended to be neutral in nature, while those selected by Japanese respondents tended to be brighter. U.S. respondents selected solid or neutral low value colours such as brown, grey, and navy. Japanese respondents selected middle-value colours such as pink and blue-green. The only colour ranked in the top three colour choices by both U.S. and Japanese respondent groups was Dark Chocolate.

U.S. participants



Japanese participants



[represents equal number of choices

Figure 3: The first three favourite colours by U.S. and Japanese participants.

Responses from U.S. participants concerning the criteria that influenced reasons for selecting their top three colour choices were assigned to 24 categories, while responses from Japanese subjects were assigned to 28 categories. The top categories used by U.S. respondents as criteria for their selection were brightness (n=32), complementary to physical appearance and wardrobe (n=27), neutral colour (n=25), appeal of colour/favourite colour/closest to a favourite colour image (n=20), and richness (n=17) (see Figure 4). The criteria for selecting

the most attractive colours by Japanese respondents were appeal of colour/favourite colour/closest to a favourite colour image (n=40), brightness (n=26), complementary to physical appearance and wardrobe (n=20), calm (n=16), and pale (n=14). U.S. respondents were much more likely to use the criteria of neutral colour, richness, and warm than were Japanese respondents. Japanese respondents were more likely to use pale, not primary colors, beautiful/pretty, uniqueness, and good for the season than were U.S. respondents.

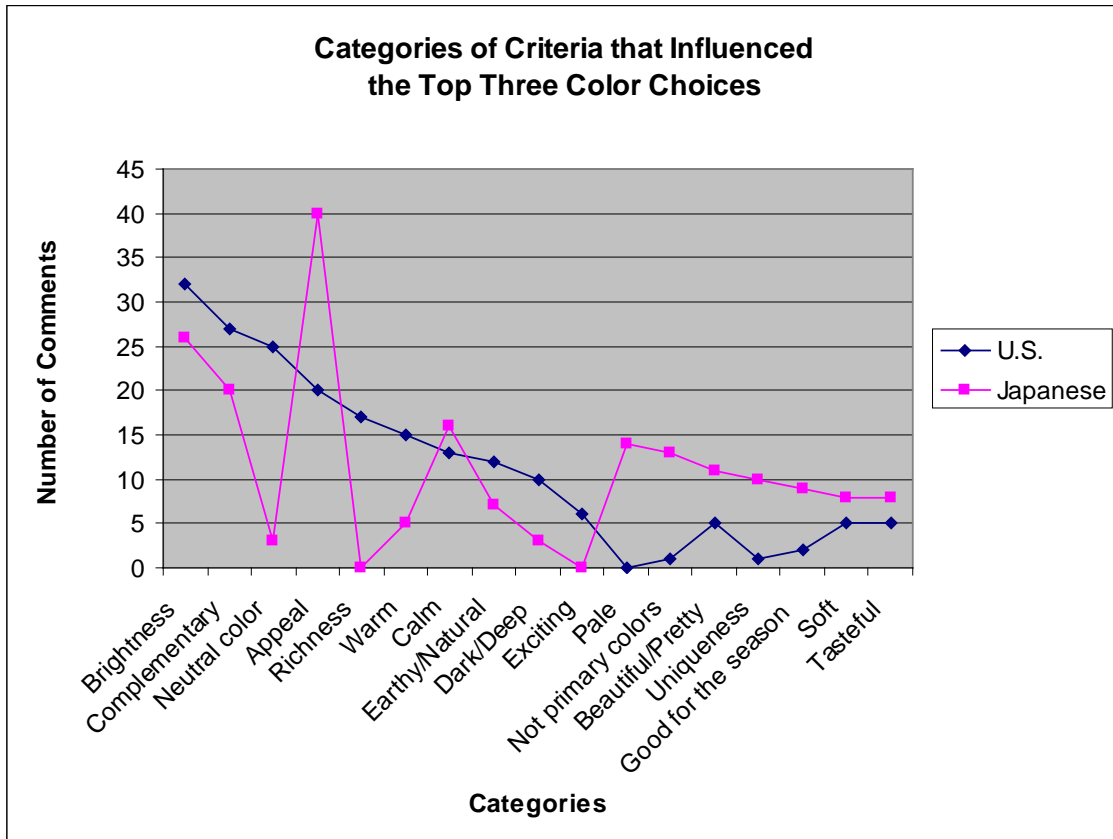


Figure 4: Top categories of criteria that influenced the top three colour preferences

Print pattern preferences

Table 3 shows the results of perceived attractiveness of print pattern stories. The only difference between U.S. and Japanese respondents' perceptions was for Busybody (t=-3.588). Japanese respondents considered this print pattern story to be more attractive than did U.S. respondents.

Table 3: Comparison of perceived attractiveness of print patterns between Japan and U.S. participants

	U.S.		Japan		T-test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
ROMANTIC	3.15	1.76	3.04	1.67	-.465
SUBDUED	3.62	1.86	3.90	1.71	1.136
ABSTRACTED	3.70	1.70	3.96	1.55	1.152
RECOLLECTION	4.51	1.70	4.08	1.57	-1.891
BUSYBODY	4.96	1.69	4.11	1.71	-3.588 ^{***}

^{***} $p < .001$, Range: 1= Very attractive to 7= Very unattractive

The print story selected as first choice by both U.S. and Japanese respondents was Romantic (37.8% and 48.1%, respectively). The first choice among U.S. respondents was followed by Subdued (30.6%), Abstracted (20.4%), and Recollection (9.2%), while the three print stories of Recollection, Abstracted, and Busybody were tied at 13.5% among Japanese respondents.

Criteria that influenced respondents' choice of the favourite print pattern story were summarized into 24 categories. The top categories used by U.S. respondents as criteria for selecting the most attractive print pattern story were colour ($n=35$), simple ($n=21$), design/detail ($n=19$), and motif ($n=14$) (see Figure 5). The categories referred to most often by Japanese respondents as criteria for selecting the favourite print pattern story were colour ($n=33$), feminine/beautiful ($n=22$), design/detail ($n=14$), uniqueness ($n=14$), and motif ($n=13$). U.S. respondents were much more likely to use simple, design/detail, soft/calm/warm, exciting, appeal, and diverse in a story than were Japanese respondents. Japanese respondents were much more likely to use feminine/beautiful, uniqueness, bold, utility, and complementary to physical appearance and wardrobe than were U.S. respondents.

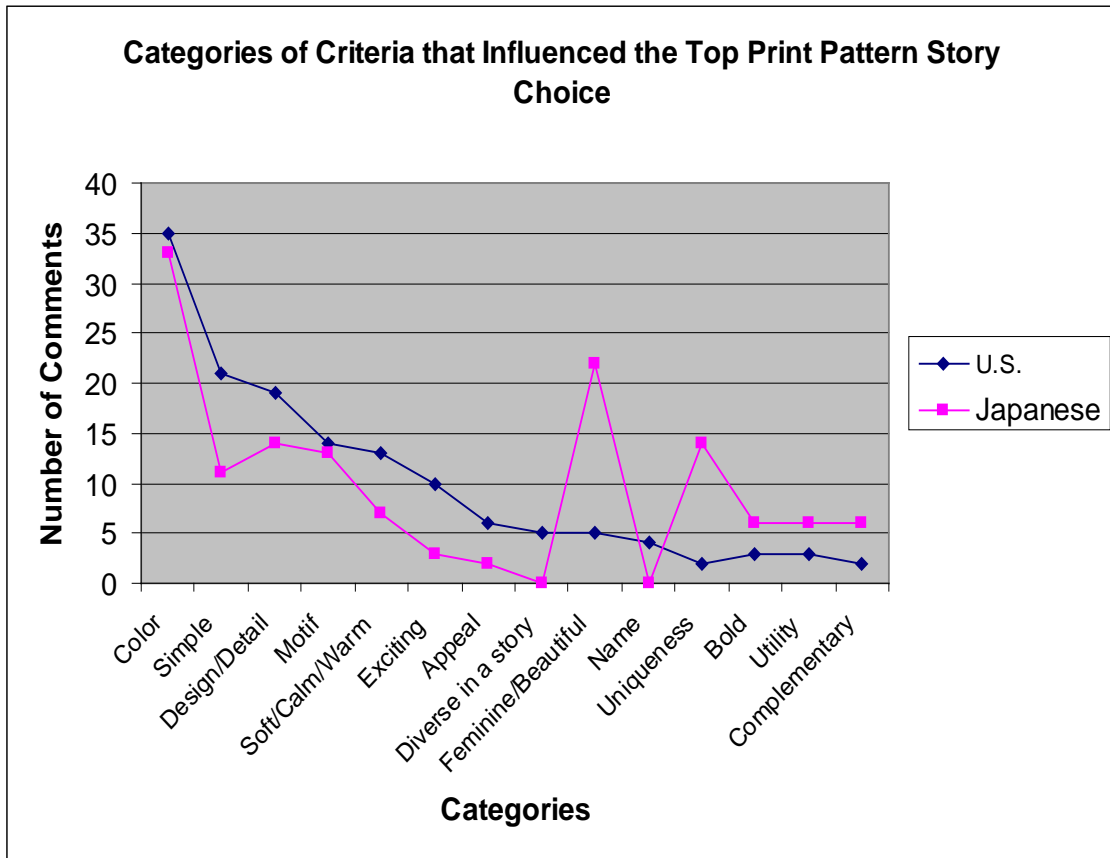


Figure 5: Top categories of criteria that influenced the favourite print pattern.

Influences of demographic and cultural characteristics on preferences

Analysis of variance (ANOVA) was performed to identify influences of demographic characteristics on preferences for the six colour stories and five print pattern stories. Demographic characteristics were composed of nationality, age, education, income, and apparel expenses. Because the majority of U.S. participants were white and the majority of Japan participants were Japanese, ethnic characteristics were considered as nationality differences.

The only demographic characteristic that influenced perceived attractiveness of colour stories was nationality. Differences between the two nationalities were found for all six colour stories. U.S. respondents considered Intrigue ($F=35.086, p<.001$), Provocateur ($F=12.919, p<.001$), and Destination ($F=5.586, p<.05$) as more attractive while Japanese respondents perceived Muse ($F=4.363, p<.05$), Triumph ($F=6.868, p<.01$), and Expression ($F=10.492, p<.001$) as more attractive.

There were three interactions between demographic characteristics and print pattern stories. Nationality influenced perceived attractiveness of Recollection and Busybody. Japanese respondents considered both Recollection ($F=4.219, p<.05$) and Busybody ($F=13.377, p<.001$)

more attractive than did U.S. respondents. Another interaction was found between age and Busybody. Respondents aged between 18 and 27 preferred Busybody more than respondents aged between 28 and 41 ($F=6.712, p<.01$).

Cultural characteristics were composed of risk aversion, face consciousness, sociability, and femininity. Pearson correlation coefficients were calculated to examine relationships among cultural characteristics and perceived attractiveness of colour stories and print pattern stories. Few Pearson correlation coefficients were found among cultural characteristics of U.S. respondents, colour stories, and print pattern stories. Risk aversion was found to affect positively perceived attractiveness of the colour story Provocateur ($r=.294, p<.01$); respondents who scored higher in risk aversion were more likely to consider Provocateur as unattractive. Sociability was found to affect positively perceived attractiveness of the colour story Intrigue ($r=.219, p<.05$) and the Recollection print pattern story ($r=.250, p<.05$); respondents who were more sociable were more likely to consider the Intrigue colour story and the Recollection print pattern story as unattractive. There was a negative influence between femininity and perceived attractiveness of the Intrigue colour story ($r=-.305, p<.01$); respondents who scored high in femininity were more likely to consider Intrigue as attractive.

Few statistically significant correlations were identified among cultural characteristics and Japanese respondents' perceived attractiveness of colour stories and print pattern stories. Risk aversion was found to affect positively perceived attractiveness of the colour stories Triumph ($r=.238, p<.05$) and Expression ($r=.334, p<.001$). Respondents who were more risk averse were more likely to consider Triumph and Expression as unattractive. Face consciousness was found to influence negatively perceived attractiveness of the print pattern stories Abstracted ($r=-.250, p<.01$) and Busybody ($r=-.262, p<.05$). Thus, respondents who were more face conscious were more likely to consider Abstracted and Busybody as attractive. Femininity negatively affected perceived attractiveness of the Expression colour story ($r=-.224, p<.05$), the Abstracted print pattern story ($r=-.268, p<.01$), and the Busybody print pattern story ($r=-.202, p<.05$). Respondents who scored high in femininity were more likely to consider Expression, Abstracted, and Busybody as attractive. However, the correlation coefficients were relatively small and may not be substantially significant.

Discussion and conclusion

Previous research found that aesthetic attributes such as colour and print pattern are important criteria in consumers' evaluation of textiles and apparel products (Eckman et al., 1990; Friend et al., 1989; Hines & Swinker, 2001; Hsiao & Dickerson, 1995; Hsu & Burns, 2002; Kawabata & Rabolt, 1999; Lee & Burns, 1993). Aesthetic evaluation of textiles and apparel products is influenced by culture (Cheng, 1997; Eckman & Wagner, 1994; Hyllegard & Morgado, 2001; Littrell, 1980; Moreno, 1997; O'Neal, 1997). However, little research has examined consumer preferences for aesthetic attributes with multiple design variables, or how culture, especially national culture, influences evaluation of aesthetic appraisals.

Research Question 1 addressed potential differences for colour and print pattern between U.S. and Japanese consumers. There were differences in aesthetic preferences for visual attributes of textiles between U.S. and Japanese respondents. U.S. respondents tended to prefer darker, low-value colours such as black, grey, and beige (referred to as basic colours).

This supports Compton's (1962) finding that individuals who score higher in sociability tend to prefer deeper, saturated colours. Also, they considered floral patterns with romantic feelings to be attractive. On the other hand, Japanese respondents tended to prefer brighter, intense colours and middle- or high-value colours such as pastel pink and yellow. Preference for pastel colours over the low-value colours and grey preferred by U.S. respondents supports Saito's (1996a) findings. Preferences for pastel colours also support the notion that the Japanese consider aesthetics as a medium to calm oneself (Hibi & Fukudo, 2000). These colours may also be reflective of those found in nature (Saito, 1996a), showing the influence of Shintoism. The only difference between the two nationalities in preferences for print pattern stories was that Japanese respondents considered the pattern with small florals in discordant colours to be more attractive than did U.S. respondents. As suggested by Kondo (1995), the Japanese population prefers unique combinations of western and traditional Japanese fashion, resulting in distinct aesthetic combinations. Preferences for small patterns support Compton's (1962) finding that the wearer wishes to make a good impression, perhaps associated with the Japanese participants' tendency to be risk averse.

Research Question 2 addressed criteria that influenced aesthetic evaluations. Although some common criteria were used by both nationalities, differences in criteria used for their evaluation of textiles existed. Both U.S. and Japanese respondents used the criteria of brightness and complementary to physical appearance and wardrobe for their colour selection, but U.S. respondents were much more likely to use the criteria of neutral colour, richness, and warm. Japanese respondents were more likely to mention such criteria as appeal of colour, pale, not primary colours, beautiful/pretty, uniqueness, and good for the season. The most important criterion for print pattern evaluation was colour for both U.S. and Japanese respondents, and there were few differences in other criteria. Therefore, the results of this study suggest that differences in aesthetic preferences toward textiles may be due to different perceptions of colour or print pattern, with the Japanese favouring unique colours as influenced by nature (Kondo, 1995).

Research Question 3 addressed the influence of demographics on aesthetic preferences. Demographic characteristics were composed of nationality, age, education, income, and expenditure for apparel. Because the majority of U.S. respondents were white and the majority of respondents in Japan were Japanese, ethnic characteristics were considered as nationality differences. The only demographic characteristic influencing colour preferences was nationality and the demographics influencing print pattern preferences were nationality and age. The results support previous research (Cheng, 1997; Hyllegard & Morgado, 2001; Moreno, 1997) which found that nationality affects aesthetic evaluations of apparel.

There were few relationships among cultural characteristics and aesthetic preferences for each nationality (Research Question 4). The cultural characteristics influencing colour preferences for U.S. respondents were risk aversion, sociability, and femininity, and the cultural characteristic influencing print pattern preferences was sociability. On the other hand, the cultural characteristics influencing Japanese respondents' evaluation of colour were risk aversion and femininity, and those influencing print pattern were face consciousness and femininity. However, no conclusive consistencies were found.

The results support the EBM model suggesting that culture impacts all stages of the decision-making process. The conclusion can be drawn that national culture impacts consumers' aesthetic preferences for visual attributes of textiles. The results also provide implications for both industry and theory development. One implication for industry is that the results can be of practical value for textiles and apparel marketers and manufacturers, including product designers and retailers. While individual differences in aesthetic preferences were apparent, results also showed that nationality influenced consumers' aesthetic preferences for textiles. Understanding the influence of nationality on preferences for products is helpful to develop marketing strategies in international retailing and design strategies for products in global manufacturing. For example, designers, manufacturers, and retailers should consider adjusting their decision making for colour and print pattern based on cultural backgrounds of their target markets.

Understanding the influence of culture, both national culture and microcultures, is not necessarily an understanding of the differences in consumers' apparel purchasing behaviour. According to Fraser and Oppenheim (1997), textiles and apparel products are in the accelerating globalization level, yet the forces of globalization are in transition. Thus, an understanding of the similarities and differences in consumers' apparel purchasing behaviour is important for success in the global market.

Although the central focus of this study was to examine the influence of nationality on evaluations of aesthetic attributes, the data identified consumers' general aesthetic preferences for visual attributes of textiles. Understanding general aesthetic preferences for textiles can help not only international marketers and manufacturers, but also domestic or local companies to provide products that satisfy the needs of their target markets. In addition, textiles and apparel companies analyze trend continuity and changes in consumer preferences (Sproles & Burns, 1994). Understanding of general aesthetic preferences could help in forecasting future fashion trends in order to provide products corresponding to consumers' wants and needs.

The implication for theory development is the nature of research on consumer behaviour for textiles and apparel products. Aesthetic attributes are important criteria when consumers select apparel. Because few research projects have examined how nationality influences aesthetic appraisals of products, the present study examined aesthetic preferences for visual attributes (colour and print pattern) of textiles. The results provided insights on some understudied areas with regard to general aesthetic preferences for textiles and apparel products, specifically the influence of national culture.

Limitations and future research

The relatively small sample of approximately 100 consumers from each country is not necessarily representative of all 18-41-year-old female consumers within the two countries, and the sizes and characteristics of the two cities may have been non-representative. However, it is feasible to formulate reasonable conclusions pertaining to the influence of nationality on aesthetic preferences for textiles. There were few differences in demographic characteristics of U.S. and Japanese respondents; thus, the data for the two nationalities were comparable. Ethnic characteristics were considered as nationality differences.

Because textiles and apparel products are globalizing, studying the same nationalities at intervals to examine if similarities in aesthetic preferences increase might be a subject for future research. Studying with a larger sample size is also recommended. A comparison of multiple nationalities in geographical areas such as Asia and Europe might identify unique tendencies in aesthetic preferences for textiles. The results identified cross-cultural differences in aesthetic preferences for textiles. The results may suggest some explanations based upon previous research on how culture influences aesthetic preferences. However, unstudied variables influencing aesthetic preferences remain. An important contribution of this study is to provide opportunities for future research to explore why the differences in aesthetic preferences occur among nationalities. Potential variables to examine include cultural values and variations in symbolism and meanings associated with colour across culture. There were differences in the average low temperatures at the data collection sites. Therefore, it is suggested that researchers plan data collection carefully such that weather be minimized as a confounding variable when comparing aesthetic preferences across cultures. Additional research that enhances understanding of the effects of cultural differences on aesthetic preferences would further knowledge of consumer behaviour and contribute to a model or theory of the consumer decision-making process and consumer apparel selection. Thus, studying the effects of cultural differences with multiple factors and analysing data with a combination of statistical and qualitative approaches are recommended.

Biography

Makiko Takagi received her Master of Science in design and merchandising from Colorado State University. She joined Synovate Market Research as a researcher in 2008 through a brand consultancy in Tokyo. Her current research areas mainly include taste and package acceptances of consumers for beverages.

Molly Eckman is a professor in the department of design and merchandising at Colorado State University. After 10 years in retailing, she received her Master of Science from Iowa State University and Ph.D. from the University of Maryland. Her research interests include the effect of culture on consumer behaviour, internationalization of retailing, and social responsibility in the global apparel and footwear supply chain. Most recently, she has published journal articles in International Marketing Review, Journal of Fashion Marketing and Management, and Journal of Retail & Distribution Management. She is a former president of the International Textile and Apparel Association.

Kenneth R. Tremblay, Jr., is a professor in the department of design and merchandising at Colorado State University. He received his Master of Arts and Ph.D. from Washington State University. His research focuses on consumer issues related to design and housing. Recent articles have appeared in Housing and Society, Journal of Fashion Marketing and Management, and Journal of Family and Consumer Sciences. He is currently serving as president of the Housing Education and Research Association and is a 15-year member of the American Association of Family and Consumer Sciences.

References

- Bao, Y., Zheng Zhou, K., & Su, C. (2003). Face consciousness and risk aversion: Do they affect consumer decision-making? *Psychology & Marketing, 20*, 733-755.
- Blackwell, R. D., Miniard, P. W., & Engel, J. F. (2001). *Consumer behavior* (9th ed.). Chicago: Dryden Press.
- Cheng, C. (1997). Chinese aesthetics of human appearance. In A. M. Fiore & P. A. Kimle (Eds.), *Understanding aesthetics for the merchandising and design professional* (pp. 103-105). New York: Fairchild Publications.
- Compton, N. H. (1962). Personal attributes of color and design preferences in clothing fabrics. *The Journal of Psychology, 54*, 191-195.
- Cresswell, J. W. (2007). *Qualitative inquiry and research design: Choosing among five traditions*. Thousand Oaks, CA: Sage Publications.
- Datamonitor (2010, March). *Global textiles, apparel, & luxury goods*, 1-36. Retrieved March 10, 2010, from www.106&sid=214d6fe5-b8b8-4084-a742-4bd89e316359%40sessionmgr112
- Deutsch, E. (1975). Studies in comparative aesthetics. *Monograph of the Society for Asian and Comparative Philosophy, No. 2*.
- Duntley, L. K. D. (1982). *Color of dress as it relates to first impressions of personality traits* (Unpublished master's thesis). San Francisco State University, San Francisco, CA.
- Eckman, M., Damhorst, M. L., & Kadolph, S. J. (1990). Toward a model of the in-store purchase decision process: Consumer use of criteria for evaluating women's apparel. *Clothing and Textiles Research Journal, 8*, 13-22.
- Eckman, M., & Wagner, J. (1994). Judging attractiveness of product design: The effect of visual attributes and consumer characteristics. *Advances in Consumer Research, 21*, 560-564.
- Fehrman, K. R., & Fehrman, C. (2004). *Color: The secret influence* (2nd ed.). Upper Saddle River, NJ: Prentice Hall.
- Fiore, A. M., & Kimle, P. A. (1997). *Understanding aesthetics for the merchandising and design professional*. New York: Fairchild Publications.
- Fraser, J., & Oppenheim, J. (1997). What's new about globalization? *The McKinsey Quarterly, 2*, 168-179.
- Friend, L. A., Farney, J. C., & Rabolt, N. J. (1989). Clothing shopping behaviour of New Zealand and United States consumers: A cross-cultural comparison. *Australasian Textiles, 9*(5), 58-62.
- Harris, P. R., & Moran, R. T. (1996). *Managing cultural differences*. Houston, TX: Gulf Publishing Company.
- Hibi, S., & Fukuda, K. (2000). *The colors of Japan*. Tokyo: Kodansha International.

- Hines, J. D., & Swinker, M. E. (2001). Knowledge: A variable in evaluating clothing quality. *International Journal of Consumer Studies*, 25, 72-76.
- Hofstede, G. (1984). *Culture's consequences: International differences in working related value*. Beverly Hills, CA: Sage Publications.
- Holbrook, M. B. (1983). On the importance of using real products in research on merchandising strategy. *Journal of Retailing*, 59, 4-20.
- Hsiao, C. F., & Dickerson, K. (1995). Evaluative criteria for purchasing leisurewear: Taiwanese and U.S. students in a U.S. university. *Journal of Consumer Studies and Home Economics*, 19, 145-153.
- Hsu, H. J., & Burns, L. D. (2002). Clothing evaluative criteria: A cross-national comparison of Taiwanese and United States consumers. *Clothing and Textiles Research Journal*, 20, 246-252.
- Hyllegard, K. H., & Morgado, M. A. (2001). International visitors' aesthetic preferences for Hawaiian printed fabrics. *Clothing and Textiles Research Journal*, 19, 64-75.
- Kawabata, H., & Rabolt, N. J. (1999). Comparison of clothing purchase behavior between US and Japanese female university students. *Journal of Consumer Studies and Home Economics*, 23, 213-223.
- Kim, Y. K., & Kang-Park, J. (1995). The shopping patterns of ethnic consumer groups in the United States. *Journal of Shopping Center Research*, 2, 65-89.
- Kondo, D. (1995). The aesthetics and politics of Japanese identity in the fashion industry. In M. E. Roach-Higgins, J. B. Eicher, & K. K. P. Johnson (Eds.), *Dress and identity* (pp. 475-479). New York: Fairchild Publications.
- Lee, E. J., Fairhurst, A., & Dillard, S. (2002). Usefulness of ethnicity in international consumer marketing. *Journal of International Consumer Marketing*, 14(4), 25-48.
- Lee, M., & Burns, L. D. (1993). Self-consciousness and clothing purchase criteria of Korean and United States college women. *Clothing and Textiles Research Journal*, 11, 32-40.
- Lind, C. (1993). Psychology of color: Similarities between abstract and clothing color preferences. *Clothing and Textiles Research Journal*, 12, 57-65.
- Littrell, M. A. (1980). Home economists as cross-cultural researchers: A field study of Ghanaian clothing selection. *Home Economics Research Journal*, 8, 307-317.
- Madden, T. J., Hewett, K., & Roth, M. S. (2000). Managing images in different cultures: A cross-national study of color meanings and preferences. *Journal of International Marketing*, 8, 90-107.
- Marshall, S. G., Jackson, H. O., Stanley, M. S., Kefgen, M., & Touchie-Specht, P. (2004). *Individuality in clothing selection and personal appearance* (6th ed.). Upper Saddle River, NJ: Prentice Hall.
- Moreno, J. (1997). Social-cultural influences upon aesthetic preferences of indigenous Guatemalan women. In A. M. Fiore & P. A. Kimle (Eds.), *Understanding aesthetics for*

- the merchandising and design professional* (pp. 100-102). New York: Fairchild Publications.
- Office of Textiles and Apparel. (2006). *Trade data - U.S. imports and exports of textiles and apparel*. Retrieved February 19, 2006, from <http://www.otexa.ita.doc.gov/msrpoint.htm>
- O'Neal, G. (1997). African-American aesthetics of dress. In A. M. Fiore & P. A. Kimle (Eds.), *Understanding aesthetics for the merchandising and design professional* (pp. 108-109). New York: Fairchild Publications.
- Pantone. (2007). Trends. *Fashion and home*. Retrieved February 26, 2007, from <http://www.pantone.com/pages/pantone/pantone.aspx?ca=4&pg=20378#>
- Radeloff, D. J. (1991). Psychological types, color attributes, and color preferences of clothing, textiles, and design students. *Clothing and Textiles Research Journal*, 9, 59-67.
- Reynolds, K. E., & Beatty, S. E. (1999). A relationship customer typology. *Journal of Retailing*, 75, 509-523.
- Saito, M. (1996a). A comparative study of color preferences in Japan, China and Indonesia, with emphasis on the preference for white. *Perceptual and Motor Skills*, 83, 115-128.
- Saito, M. (1996b). Comparative studies on color preference in Japan and other Asian regions, with special emphasis on the preference for white. *Color Research and Application*, 21, 35-49.
- Shim, S. (1996). Adolescent consumer decision-making styles: The consumer socialization perspective. *Psychology & Marketing*, 13, 547-569.
- Shoyama, S., Tochiyama, Y., & Kim, J. (2003). Japanese and Korean ideas about clothing colors for elderly people: Intercountry and intergenerational differences. *Color Research and Application*, 28, 139-150.
- Soma, I., & Saito, M. (1996). Cross-cultural survey on color preferences in three Asian cities: Comparisons among Tokyo, Taipei, and Tianjin. In S. Wapner, J. Demick, T. Yamamoto, & T. Takahashi (Eds.), *Handbook of Japan-United States environment-behavior research: Toward a transactional approach* (pp. 101-112). New York: Plenum Press.
- Sproles, G. B., & Burns, L. D. (1994). *Changing appearances*. New York: Fairchild Publications.
- Stern, B. B., Barak, B., & Gould, S. J. (1987). Sexual identity scale: A new self-assessment measure. *Sex Roles*, 17, 503-519.
- Sternquist, B. (1998). *International retailing*. New York: Fairchild Publications.
- Wickliffe, V. P. (1998). *A cross-cultural analysis of the relationship between decision-making styles, consumer demographics, and product characteristics* (Unpublished doctoral dissertation), Michigan State University, East Lansing, MI.
- Wilkie, W. L. (1994). *Consumer behavior* (3rd ed.). New York: Wiley.

Willis, J. W. (2007). *Foundations of qualitative research*. Thousand Oaks, CA: Sage Publications

***Cook It Up!:* Formative evaluation of a community-based cooking program for at-risk youth in London, Ontario**

Heather M Thomas, Jennifer D Irwin

University of Western Ontario

Abstract

Cooking programs targeting at-risk Canadian youth are limited in scope and opportunity. There is the need to create community-based food literacy programs with this target population. A 15-month pilot project providing educational sessions for cooking, food literacy skills, and fieldtrips to local agri-food outlets was offered to an at-risk youth population living in London, Ontario. A formative evaluation on the intervention provided valuable information that will inform future cooking and food literacy programs for this population among others.

Objectives of the intervention included the application of food literacy and cooking skills education taught by local chefs and a registered dietitian. The intervention was enhanced with fieldtrips to local farms to foster an appreciation and understanding of food, from “farm to fork”. Youth, community partners, and parents/guardians who participated in the Cook It Up! program and its development were targeted for inclusion in the formative evaluation (n = 25). As of November 2010, eight at-risk youth (five girls and three boys, mean age = 14.6) had completed the intervention.

The Cook It Up! program can provide an effective template for other agencies and researchers to utilize for enhancing existing programs or to create new applied cooking programs based on contextual information from this formative evaluation. A community-based cooking program would be relevant for a wide range of populations. Additionally, there is an ongoing need for applied research focusing on food literacy and cooking skills.

Keywords: Food literacy, cooking skills, formative evaluation, at-risk youth

Introduction

Disadvantaged youth are at a higher risk of consuming an unhealthy diet compared to youth in stable family relationships (Anderson, Bell, Adamson, & Moynihan, 2002). For the purpose of this study the term “at-risk youth” refers to adolescents aged 13-18 years, whose socio-economic status and/or living arrangements puts them at increased risk for a variety of physical and psycho-social issues, including poor nutrition (World Health Organization, 2002). Other characteristics of at-risk youth include diverse racial backgrounds; negative influence from family, environment, or peers; social factors that restrict healthy mental and social growth; limited financial resources; difficulty achieving optimal education; and behavioural issues (Dobizl, 2002; Moore, 2006; Sussman et al., 2010). At-risk youth may also experience

challenges such as addiction and homelessness (Hadland, Kerr, Li, Montaner, & Wood, 2009; Rachlis, Wood, Zhang, Montaner, & Kerr, 2009).

Supporting at-risk youth by implementing food literacy and cooking skills program can facilitate the development of hands-on learning to enhance social determinants of health in a positive way, through addressing behavioural factors like the quality of dietary choices. As such, a food literacy program can strengthen at-risk youths' food culture for health "to foster [their] knowledge of food and nutrition, cooking skills, growing food, and the social value of preparing food and eating together" (World Health Organization, 2003, p. 27).

The provision of a hands-on, practical life skills program to build food-related self-efficacy, knowledge, and self-confidence is an important and unique intervention for at-risk youth (Thomas & Irwin, 2011). According to Bandura (1977), one's self-efficacy is enhanced when one has the practical and necessary skills for completion of the task and/or behaviour. *Cook It Up!* was a community-based cooking program targeting at-risk youth and designed to provide participants with food literacy and cooking skills. This program also included opportunities for at-risk youth to enhance their self-efficacy. Offering the program is only the first step: without knowing participants' receptiveness to and experiences with the program, it is hard to know whether it should continue, be expanded, or if it has any unanticipated negative effects. Therefore, the purpose of this formative evaluation was to gain an understanding of participants' experiences with the pilot offering of the *Cook It Up!* program, where participants include the at-risk youth, community partners, and parents/guardians. As Patton (2002) and Green and Kreuter (2005) noted, formative evaluations are particularly helpful for finding out what is working well with the program, how to improve and shape the program, and also to identify what needs to be done to make it optimally effective for its target audience. The desired results of a formative evaluation are "recommendations for improvements". This study was conducted in concert with the piloted administration of *Cook It Up!* and was used to "assess the relevance, comprehension, and acceptability of activities, materials, [and] methods" of the program (Green & Kreuter, 2005, p. 207).

For the formative evaluation, the at-risk youth participants were able to share feedback about their direct involvement in the program. The community partners (i.e., Program Coordinator, Steering Committee members, fieldtrip operators, guest chefs, volunteers) contributed to the research by sharing their experiences with the organizational processes and logistics of implementing the program components. Finally, the parents/guardians had an interesting "outsider" perspective and were able to share their perceptions of the impact of *Cook It Up!* on their children. It was important to gain some idea of the program's impact on participants' food literacy and self-efficacy; therefore, a simple, self-reported tool (pre-post) to assess each was implemented. A brief description of the *Cook It Up!* program is provided for context.

Program description

Cook It Up! was a community-based cooking program targeting at-risk youth in London, Ontario. This program focused on teaching vulnerable youth essential cooking skills and food

literacy by introducing them to the local agri-food industry through fieldtrips to local farms and farmers' markets. The overall purpose of the program was to enhance food literacy and cooking skills among this population. Guest chefs from local restaurants and other food service outlets facilitated 29 educational cooking sessions focusing on local foods. Eleven fieldtrips to local farms and farmers' markets also occurred. Ethical approval for this study was granted by the Office of Research Ethics at The University of Western Ontario.

Purpose

The objectives of this formative evaluation were three-fold. First, this evaluation assessed the strengths and weaknesses of the program and its delivery. Secondly, we uncovered obstacles, barriers, or unexpected opportunities that could make the program more effective. Finally, this formative evaluation generated understandings about how the program content and implementation could be improved. As a deliverable, the research facilitated the development of a "how-to" community resource manual available for local and provincial distribution. In addition to the qualitative component of this study, a demographic survey was administered and included an assessment of self-reported food skills, food literacy, and self-efficacy (pre- and post-test questionnaires). Results from the quantitative data are reported in Tables 1, 2, and 3.

Table 1: Demographic characteristics of at-risk youth in Cook It Up!

	Demographics	<i>n</i>
Sex	Male	3
	Female	2
Age	13	1
	14	1
	15	2
	16	1
Ethnicity	White	3
	Black	1
	White/Black mix	1
Family Structure	Double parent family	3
	Parent and step-parent	1
	Single parent	1
Employed	Yes	1
	No	4
Grade	8	1
	9	1
	10	2
	11	1

Table 2: Self-reported food skills rating for pre- and post-test questionnaire

Food Skill	Pre-Test Results.		Post-Test Results.	
	Very good skill + good skill	Basic skill + very limited/no skill	Very good skill + good skill	Basic skill + very limited/no skill
	<i>n</i>	<i>n</i>	<i>n</i>	<i>n</i>
Using a knife safely	3	2	5	0
Peeling, chopping, slicing vegetables or fruit	3	2	5	0
Cooking a piece of raw or frozen meat/chicken/fish (not processed)	4	1	4	1
Cooking a soup, stew, casserole using a pre-packaged mix	4	1	4	1
Cooking a soup, stew, casserole from "scratch"	2	3	3	2
Choosing a spice or herb that goes well with the food being cooked	2	3	4	1
Adjusting a recipe to make it healthier	2	3	2	3
Baking muffins or cake "from scratch"	4	1	4	1
Baking muffins or cake using a pre-packaged mix	4	1	2	3
Planning a quick, healthy meal using only the foods already at home	2	3	2	3
Freezing vegetables or fruit from raw to bagged in a home freezer	2	3	2	3
Canning fruit or salsa from raw ingredients to finished products in sealed glass jars	1	4	3	2

Table 3: Self-reported self-efficacy with respect to food literacy and cooking skills

Food skill identified	Self-efficacy	Pre-test results	Post-test results
		<i>n</i>	<i>n</i>
Preparing foods at home at least partly from "scratch"	I know I can	2	4
	I think I can	3	1
	I'm not sure I can	0	0
	I know I can't	0	0
	I don't know	0	0
Knowledge of what "local foods" means	I know I can	4	4
	I think I can	1	1
	I'm not sure I can	0	0
	I know I can't	0	0
	I don't know	0	0

Methodology

Youth, community partners (i.e., Steering Committee members, guest chefs, fieldtrip operators, and volunteers), and parents/guardians who participated in the program in any capacity were targeted for inclusion in this study. All eligible participants were invited to participate in the formative evaluation research through direct personal and/or telephone contact with the lead investigator and/or Program Coordinator of *Cook It Up!* The lead investigator and Program Coordinator explained the purpose of the formative evaluation, answered questions about the research, and provided all potential participants with the letter of information outlining the purpose of the formative evaluation and research parameters. Twenty-five participants (i.e., at-risk youths, community partners, and parents/guardians) participated in the in-depth interviews, which took place immediately following the conclusion of the *Cook-it-Up!* program, and which lasted approximately one hour; all interviews were audio-recorded and transcribed verbatim. Only the youth participants completed the demographic form and the pre-post assessments pertaining to their cooking and food literacy skills, and their cooking- and food-related self-efficacy (the pre-assessment was implemented during the second program session; the post-assessment was implemented immediately following the conclusion of *Cook-it-Up!* during the in-depth interview). The pre-post assessments were implemented orally to accommodate literacy challenges among at-risk youth.

Specific process of the formative evaluation

The in-depth interviews were conducted at a convenient and private community location as mutually decided and agreed upon by the participant and research team (e.g., local library, local community college, guest chef's restaurant, high school). Each formative evaluation participant was greeted by the lead investigator who provided him/her with another copy of the Letter of Information and re-explained the nature of the in-depth interview and research purpose. Participants were told their involvement was voluntary, that they could refuse to answer any questions, and that they could ask to stop the recording at any time during the interview. As noted above, in-depth interviews lasted approximately one hour and were audio-recorded and transcribed verbatim.

In-depth interviews were completed with a total of 25 participants (3 guest chefs, 5 Steering Committee members, 3 fieldtrip operators, 6 volunteers, 3 parents/guardians, and 5 at-risk youth participants). Saturation of the data occurred at 18 interviews; however, using principles of PAR (Kidd & Kral, 2005), the research team felt it was important to conduct interviews with *all* interested participants in order to maintain inclusiveness while furthering the opportunity to obtain rich, contextual data about *Cook It Up!*. A semi-structured interview guide was used to facilitate the in-depth interviews. Examples of questions from the semi-structured interview guides for at-risk youth, community partners, and parents/guardians appear in Table 4.

Table 4: Example questions from semi-structured interview guides for at-risk youth, community partners, and parents/guardians

At-Risk Youth	<ul style="list-style-type: none"> • What did you like best or value most about the cooking program? Why? • What did you like least or value least about the cooking program? Why? • If you could change anything about the program, what would it be? • What is different for you since being in the <i>Cook It Up!</i> program? What, if anything, is different about how you're eating? What, if anything, is different about where you're purchasing? • What recommendations would you make to improve this program so it could be adapted to other target groups in other communities?
Community Partners	<ul style="list-style-type: none"> • Why did you become involved in the <i>Cook It Up!</i> program? • How effective was the Steering Committee in meeting its objectives for this project? Please say more? • What recommendations would you make to improve this program? • How could this program be adapted to other target groups in other communities?
Parent/Guardians	<ul style="list-style-type: none"> • Why do you think your child wanted to participate in the cooking program? • What do you think your child liked best or valued most about the cooking program? Why? • What did you like best or value most about the cooking program? Why? • Why was it good for your child to be a part of <i>Cook It Up!</i> What did you gain from the program? • In what ways could the cooking program be improved? If you could change anything about the program, what would it be? • What is different for you since your child was involved in the <i>Cook It Up!</i> program? What, if anything, is different about how you and your family are eating? What, if anything, is different about where you're purchasing food?

Data analysis

Upon completion of data collection, descriptive statistics were conducted on the pre-post assessments, and inductive content analysis as described by Patton (2002) was utilized to analyze, code, and categorize emerging themes for the qualitative data. QSR NVivo 8 (QSR International, 2008) software was used to help code and categorize emerging themes. All themes were presented as group findings to keep confidentiality of identities intact. Several strategies, as outlined by Guba and Lincoln (1989), were employed to ensure the trustworthiness of the findings (see Table 5).

Table 5: Measures to facilitate data trustworthiness as outlined by Guba & Lincoln (1989)

Credibility	Member-checking was used between each question and at the end of the interview to ensure the responses from participants were correctly understood and recorded by the researcher. The lead investigator provided her perception of the participants' responses prior to moving onto the next question in the semi-structured interview guide.
Dependability	Following the interview, the lead investigator and a member of the research team met to debrief and summarize the interview. A colleague not involved in this study was recruited to engage in peer-debriefing sessions with the researchers following the interviews. Detailed notes from this discussion were recorded and any biases identified, documented, and considered to ensure the researchers' biases would not affect the data analysis. Detailed notes also provided an audit trail. During the data analysis, the lead investigator also engaged in reflexivity to help keep any biases in check.
Confirmability	Inductive content analysis was performed independently and simultaneously by two researchers with experience in qualitative research and the findings were then triangulated and analyses compared. Data were examined for similarities and differences and emerging themes identified. Another member of the research team reviewed the data and engaged in peer debriefing with the research team to ensure that any of the researchers' biases that were taken for granted have been uncovered. Additionally, through this process, the researcher can become aware of her position toward the data and its analysis.
Transferability	The entire research process has been documented in detail to allow other researchers to determine if the context and findings from this study are transferable to their contexts and settings.

Findings

A summary of participants' demographics is found in Table 1. In terms of the quantitative (descriptive) tools, a summary of the pre- and post-test cooking skills assessment is found in Table 2. In general, all participants identified an increase in their cooking skills acquisition from pre-test to post-test (see Table 2) and indicated an improvement in food literacy and self-efficacy with respect to cooking skills (see Table 3).

In terms of the qualitative findings, a number of themes emerged from the data related to the pilot program components and attributes, the impact of the program on at-risk youth participants, and future program considerations. These broad themes were not decided upon

prior to conducting the interviews, but instead materialized from the data and underscored key concepts related to the intervention, the utility of the intervention, and the value of the community-based cooking program for at-risk youth from the participants' perspectives. The specific themes that emerged from the data were food literacy, connections, confidence, youth engagement, relevance, at-risk youth behaviour, and location.

Food literacy

Nineteen of 25 participants (i.e., at-risk youth, community partners, parents/guardians) interviewed for the formative evaluation mentioned the importance of food literacy for the at-risk youth population, and among other populations. Comments related to food literacy focused on increased awareness of the relationship between the local agri-food industry (i.e., access and availability of foods from local farms and farmers' markets) and cooking, learning about food and cooking, and the progression of cooking skills. One volunteer summarized her view of the youths' understanding of food literacy by stating, "the light bulb goes off [with the youth when they say] 'oh this is how it's grown' and 'this is how I pick it and now I'm going to go back and prepare it'... every time you go you see the kids - they are blossoming." This was echoed by a parent, who stated:

I think it was a combination of following the fieldtrips with the produce and following it through and cooking it. I think she [daughter's name] really enjoyed that aspect of it, like going to the grocery store and getting the chicken and cutting it all up. She didn't really like that but she did it!

A Steering Committee member also appreciated the enhancement of food literacy experienced by youth participants through their involvement in *Cook It Up!* She stated:

...the participants that we have currently [are] coming away with a better understanding of the food that they eat and how to prepare it. The spin-off of that is that they are going to be an influencing factor in their own families and to their friends, and hopefully as they grow older and have families of their own these [skills] are going to live on and transfer down [to their children].

Several participants stated there were numerous opportunities to learn about food literacy and cooking skills, primarily championed by the guest chefs. When asked what she thought was the best part of *Cook It Up!*, the mother of one participant stated:

[T]hat he was learning. That he had the desire to go. He was more interested in foods. I know he talked to his grandmother and his aunts about his class... so he really liked it because he would talk about it.

One of the guest chefs involved in the program indicated:

[N]one of them [youth participants] had actually gone apple picking before. None of the kids had been on a real farm. They had never seen food grown;

they had never seen livestock up close.... We are trying to impart knowledge. We are trying to impart professionalism. We are trying to impart skills.

The opportunity to learn about food and cooking was explained by one guest chef through an explanation of skills acquired by at-risk youth thus:

[W]e've taught the kids how to respect a knife and how to respect their boards and keep things clean.... So we give them an idea of what they are going to make today and we talk to them a bit about the history of what we are making and why we are making it and then we go through the process of making it and then we give them the reasons why we are making the different processes and things to that effect.

It was important to the Program Coordinator and guest chefs to see that the participants had a good understanding of the historical context of the food they would be cooking as well as how it related to the seasonal availability of produce. One stated:

I like the mix of sessions between [cooking and] field trips because it's like practical outside of the kitchen and then in the kitchen. It does take the whole local foods concept...taking them on a field trip is really great... [t]hose are all strengths of the program.

Finally, the progression of the participants' cooking skills might be linked to enhancing their food literacy. If the program was to be successful, an outcome related to cooking skills progression would be revealed. The Program Coordinator stated, "It's been really fun to watch the kids' interest change through the program so it's been really fun to watch their skills grow." He explained, "[I] just listen to the way that they understand food, listening to them answer the guest chefs' questions faster and more enthusiastically than they were at the start which - it's been fun to watch them grow as a group." From an at-risk youth participant's perspective, the progression of cooking skills was evident as well. She stated:

[Chef] has even told me that [my skills have] improved, like my knife-handling skills and stuff like that. He said when I first grabbed a knife I could barely use it but now I'm a lot better with them and he doesn't think I'm going to cut myself anymore...I can follow a recipe a lot better now too. Before I could follow a recipe but now it's more, like, I don't have to read the recipe for each ingredient. Like, I can just look over it really quickly and then I can make it, type of thing.

Another youth participant indicated a similar sentiment regarding how her cooking skills progressed over the course of the intervention. She stated, "...having someone constantly critiquing [your cooking skills] and showing you 'do it this way'...they are constantly telling you that it kind of sticks in your head more." Similarly, one participant indicated, "[I liked the] hands-on aspect...I had to be shown it first and then it's ingrained in my head."

Connections

Related to food literacy is the theme of connections. Specifically, the themes of connections between farms and farmers, connections to community members, and connections to food each emerged from the data. The Program Coordinator succinctly summarized his perspective about connections, stating:

I think one of the big things that I personally believe when it comes to food is the more of a connection that a person has with the food that they are eating, the more into it they are going to be. It becomes an experience as opposed to just a meal.

Building on the connection to food, one at-risk youth participant, whose sentiments were consistent with her peers, said, “you got to see where all the food came from and like the process of how it’s grown, which is kind of cool because if you are not exposed to that [it’s not good].” A Steering Committee member agreed with the importance of connections to local farms and farmers, stating:

...it’s all about that connection with your food. So when you bring kids who have never really connected with anything they are eating before, especially when you are trying to get them to explore new ideas with food and new concepts with food...when they are the ones that prepared it, [it] really makes a huge difference in how they will look at that food and look at that experience when you can take it that step further and you actually bring them out to the source of the food and they see it growing. They can’t help but have that affect them in a way where they are like ‘Wow, this is something that I pulled from the ground.’

The importance of community connections also emerged. A member of the Steering Committee indicated that community involvement was the key reason for the success of *Cook It Up!* This person said:

I would say that if you take a look at the interest that has been shown by all of the different community partners and people who are involved, without all of them it would not work...there’s a whole network of people working together to make sure that this program is delivered and delivered well. And if you take any one of them out of the equation, I’m not sure how it would work.

Cook It Up! provided connections with the at-risk youth as well, mainly through the Program Coordinator and guest chefs, but also with the introduction of at-risk youth to local farms and markets. A volunteer noted, “the enthusiasm of the people that are involved and how that has—it sparks the enthusiasm in the kids... [i]t’s like turning on the light.” The youth participants felt similarly, as exemplified by one participant who stated,

[T]he field trips were really cool because we went to like organics farms and we went apple picking and strawberry picking and all kinds of stuff like that

so you got to see where all the food came from and like the process of how it's grown, which is kind of cool because you are not exposed to that.

Confidence

The theme of confidence was expressed by community participants, parents/guardians, and the at-risk youth themselves as they described the benefits of *Cook It Up!*. Throughout *Cook It Up!*, at-risk youth participants reportedly improved their self-esteem and correspondingly their confidence in the kitchen and in themselves. One at-risk youth participant stated, "It's made me more confident in the kitchen, definitely. I don't feel like I am going to burn the house down any more!" One of the volunteers who had professional experience as a teacher of children with special needs indicated:

[W]hen you see what's happening with the kids in the program and you see that you have been a part of helping them to see that they can achieve things and it's possible [for them] to feel good about themselves.

In discussing the positive impact *Cook It Up!* had on her child, one of the parents/guardians indicated, "This [program] was just 100%. If you reached one child during this whole thing...I think that this has changed [child's name] life... [increasing her] self-confidence and someone listened to her and discussed ideas with her. And she counted." A program volunteer indicated she had noticed youth "changed so much in this program...it's like them becoming responsible for themselves which is becoming an adult. Kids gained more confidence and comfort in their skill and their abilities."

Youth engagement

Youth engagement was another emerging theme. A parent of one at-risk youth participant indicated that his daughter enjoyed being:

...involved in the ideas of what some of the side trips were and cooking projects. She really liked the idea of that...I can see that this course has developed leadership qualities in her...she didn't have that incentive before this *Cook It Up!*

A guest chef involved in the program stressed the importance of youth engagement by the participants when he stated:

...it's a set of kids that are there to learn, not just there because of money. Their mom and dad didn't send them. They are here by choice. When you are here by choice, you have a tendency to learn more.

This chef felt that the participants' commitment to the program underscored their efforts for engagement throughout its duration. When it came to their perspective of engaging in the program and its various activities, youth themselves reported feeling interested and excited to participate. This was evident through the quote of one youth participant who said:

...now that I have these skills, I am going for my Food Handler [Training certificate] and I've been taking cooking at school...I have better confidence. I can get a job at a restaurant easier than say somebody who is just taking cooking at school...I have that much more experience.

Relevance to others

All participants in the formative evaluation were asked about the potential relevance of *Cook It Up!* to other populations and groups. All respondents indicated that a wide range of diverse groups could benefit from a cooking skills and food literacy program like *Cook It Up!*. One at-risk youth participant, whose sentiments reflected those of his peers, indicated, "I think that everyone can benefit from knowing how to cook their own food from scratch." Virtually every age group, from students in elementary school, high school, university and college to teenage mothers, professional adults, and older adults, were mentioned by participants in the formative evaluation as prospective groups to benefit from an intervention similar to *Cook It Up!*

At-risk youth behaviour

The Program Coordinator, guest chefs, volunteers, Steering Committee, and some at-risk youth participants experienced difficulties with the behaviours of some at-risk youth participants in the program. One of the volunteers with expertise working with at-risk youth kept challenging situations in perspective. She stated:

[W]ho knows what goes on at home, right, and who knows what kind of consistency they have in their life, so for the same people to show that dedication and come and spend that Monday night with them is probably maybe the only time that they have had that in their whole lives.

Her colleague added:

[T]here's times when we forget or don't really understand some of the challenges that the youth that we are dealing with have so there may be some behaviour or lack of attendance or focus at a session and we have to remember that we are dealing with youth that are probably facing some challenges that we are not all that privy to, so we are just, you know, and we have to keep that in mind. We have to remember who we are dealing with.

Having this perspective helped facilitators of the cooking sessions and fieldtrips have a better understanding of this unique population and increased their comfort level when working with at-risk youth, as evidenced by one volunteer who stated:

I think that there's a couple of kids that have had some issues with organization and with obviously have problems with authority. Probably they've had a lot of, I would think that they would have family issues, they have behavioural issues. And I think a couple of them we had to kind of fight to keep in the program because, you know, people were seeing them as

disruptive influences. I think it's worked out and it's been good for everybody to see that you don't give up right at the beginning. You know, you plough through and you persevere with those kids and you do get rewards...they need a little [tender loving care] to get them on the track.

A Steering Committee member agreed that the whole team handled the challenge of working with at-risk youth very professionally and effectively. She stated:

I think we've worked very well with dealing with all of these challenges...We are very fortunate there that we've got a diverse mix of people making that up who can come in and have expertise in dealing with youth either as a teacher or a service provider for at-risk youth.

As mentioned above, some of the youth themselves found behaviours of other participants to be challenging. One youth participant described this situation stating, "there are some kids that it was just like kind of avoid them...don't pretty much engage with them too much."

Location

The greatest challenge was securing a satisfactory location for the initiative. The *Cook It Up!* program participants (Program Coordinator, guest chefs, volunteers, and at-risk youth) needed to exercise flexibility with respect to the location as it was changed on four different occasions over the 18-month duration of the program. Finally, the Steering Committee was fortunate to secure a centrally-located industrial kitchen in a faith-based organization easily accessible by bus. One volunteer stated, "the biggest challenge has been finding a home for the program...it's difficult for kids and their parents to be in the different kitchen and the different venue, you know. I think it's hard - those kids crave familiarity and consistency."

Discussion

The findings from this formative evaluation suggest that the *Cook It Up!* community-based cooking program for at-risk youth was an important intervention to facilitate teaching at-risk youth about food literacy and cooking skills. This intervention might assist participants' connections to local agri-food industry while building essential life skills, self-confidence, and self-efficacy. The application of food knowledge from "farm to fork" (i.e., food literacy skills) is relevant not only to the at-risk youth population in the current study, but also for other populations. Having community connections with experts in the field working specifically with the new population would provide an enhanced understanding of the target populations' specific needs and facilitate program success. A centrally-located, accessible location was seen as a necessary component of the program for youth participants, volunteers, and guest chefs alike. An appropriate location was an ongoing concern during the *Cook It Up!* program; however, the Steering Committee eventually acquired the ideal site thus alleviating the stress of implementing the intervention in a less suitable location.

The findings of the current study are meaningful because they contribute to the limited evidence about food literacy and cooking skills. These findings also provide participants' perspectives of the need for continued skill development to many target groups. Educational

programs focusing on cooking skills provide the opportunity to enhance and improve participants' self-efficacy while teaching basic food preparation and healthy nutrition behaviours and practices in a hands-on environment. The literature indicates programs designed using these components are well received by participants and facilitators (Byrd-Bredbenner, 2004; Haley & McKay, 2004; Lai Yeung, 2007; Levy & Auld, 2004; Meehan, Yeh, & Spark, 2008; Winter, Stanton, & Boushey, 1999; Wrieden et al., 2007).

Throughout the entire intervention, confidence among at-risk youth participants was explored, developed, and enhanced, and confidence is one of several key ingredients for positive youth development (Lerner, Fisher, & Weinberg, 2000). Youth engagement can be defined as "the meaningful participation and sustained involvement of a young person in an activity, with a focus outside of him or herself" (Centres of Excellence for Children's Well-Being, 2009). Youth were consulted at all stages throughout the intervention, including for recipe selection, field trip ideas, and content development for the program curriculum.

Along with the outcomes of achieving enhanced cooking skills, food literacy, self-confidence, and self-efficacy, other outcomes of importance were realized in this intervention. For example, *Cook It Up!* facilitated the opportunity to explore the relationship of cooking skills and the possibility for improved nutrition and healthy eating outcomes. When individuals follow *Eating Well with Canada's Food Guide* (Health Canada, 2007a), they are better equipped to obtain sufficient vitamins, minerals, and other nutrients; reduce the risk of type 2 diabetes, obesity, heart disease, certain types of cancer, and osteoporosis; while achieving overall health and vitality (Health Canada, 2007b). However, consuming unhealthy diets has resulted in the increased incidence of excess weight and obesity, especially among Canadian children and youth (Biro & Wien, 2010; Lee & Cubbin, 2002; Shields & Tjepkema, 2006; Taylor, Evers, & McKenna, 2005). Greater risk of obesity in children is correlated with higher consumption of sweetened beverages (Ludwig, Peterson, & Gortmaker, 2001; Statistics Canada, 2008), increased intake of oils and fats (Statistics Canada, 2006), and increase in the total calories consumed (Statistics Canada, 2006).

While poorer eating patterns are associated with excess weight and obesity, *healthy* eating patterns are associated with positive outcomes including healthy weights. For example, eating more servings of vegetables and fruit is linked with healthy weights, weight loss, and better weight management (Rolls, Ello-Martin, & Tohill, 2004). One impediment to establishing healthy eating is related to the ability to prepare nutritious foods. A cooking skills and food literacy program similar to *Cook It Up!* might improve cooking skills and encourage the consumption of healthy foods. Consequently, cooking skills programs might help in the achievement and maintenance of healthy bodyweight.

Another implication of improved cooking skills relates to opportunities to enhance community food security. The Community Nutritionists Council of British Columbia (2004) stated that community food security "exists when all citizens obtain a safe, personally acceptable, nutritious diet through a sustainable food system that maximizes healthy choices, community self-reliance and equal access for everyone" (p. vii). The foundational goals of community food security are diverse and include components relevant to cooking initiatives. For example, the need to "enhance the dignity and joy of growing, preparing, and eating food"

(Dietitians of Canada, 2007, p. 2) and “build the capacity for people to create change through education and empowerment” (Dietitians of Canada, 2007, p. 2) reflects goals shared by food literacy and cooking skills programs. These programs can be designed to include education and awareness of food production and preparation, from the farm producing the food to an individual’s kitchen where it is prepared. Food literacy and cooking skills programs might improve opportunities to achieve food security, especially for vulnerable populations at greatest risk.

Food literacy and cooking skills are essential for a number of reasons. Lang and Caraher (2001) highlighted that cooking skills underscore one’s ability to acknowledge what constitutes a healthy diet; they also enable and empower individuals to make healthy and culturally preferred food choices both by having the ability to prepare food from “scratch” and by understanding the process by which ready-to-prepare foods are made (Lang, Caraher, Dixon, & Carr-Hill, 1999). Youth, especially those at-risk for failing to achieve the positive social determinants of health, require being equipped with an essential set of practical skills such as food literacy and cooking (Thomas & Irwin, 2011). These skills may facilitate at-risk youths’ ability to make healthy food choices while reducing their risk for chronic disease, achieving and maintaining a healthy bodyweight, and contributing to acquiring food security.

Limitations

Cook It Up! provided a hands-on initiative for at-risk youth to gain essential food literacy and cooking skills in a supportive environment which fostered their self-esteem and confidence. The limitations of this study focus on the small number of participants in the intervention itself. Of the 25 participants involved in the formative evaluation, only 5 participants were at-risk youth themselves, the main target population for the *Cook It Up!* intervention. There was a total of eight at-risk youth who were involved in *Cook It Up!* when it was conducted from August 2009 to November 2010. With this small number of at-risk youth participants in the formative evaluation, we cannot confirm the opinions of the other three participants, let alone those at-risk youth who did *not* become involved in *Cook It Up!* at any time throughout its duration. It would be interesting to know what other at-risk youth would have shared about this unique initiative, and if they did not become involved, why they were not interested in participating in this intervention. Perhaps there would be a more efficient or effective way to reach these at-risk youth, either in the community environment or alternatively through recruitment in a school setting.

Additionally, a small number of parents/guardians participated in the formative evaluation. It is difficult to make any recommendations based on perspectives from only a few parents/guardians. While this information was interesting, it would have been useful to have the opinions about the *Cook It Up!* program presented by other parents/guardians involved in the intervention. Their lack of involvement might reflect their at-risk characteristics as well, which may have contributed to their barrier to participation in the formative evaluation. Regardless of the small sample size of participants in this research, however, the contextual information provided shapes future food literacy and cooking skills development programs targeting at-risk youth.

Conclusion

This formative evaluation assessed the strengths and areas for improvement of the community-based cooking program for at-risk youth and its delivery. Through this assessment, we uncovered barriers and opportunities that served to make the program more effective. Finally, this evaluation engendered insight about how the program content and implementation could be improved. The research facilitated the development of a “how-to” community resource manual available for local and provincial distribution. To date, this initiative has been adapted by a number of agencies locally and provincially (i.e., Youth Opportunities Unlimited, Children’s Aid Society, Cross Cultural Learners Centre, and the North Bay and District Health Unit). *Cook It Up!* provided a useful template to be shared with other agencies and groups interested in improving food literacy and cooking skills among their target populations.

School- and community-based cooking programs for youth provide numerous benefits, including the development of necessary life, social, and economic management skills, and education about healthy eating in service of improving weight status and overall health (Byrd-Bredbenner, 2004; Lai Yeung, 2007; Larson, Perry, Story, & Neumark-Sztainer, 2006; Larson, Story, Eisenberg, & Neumark-Sztainer, 2006). With the cooking skills syllabus removed from the curriculum from several North American school systems, fewer opportunities exist for youth to learn and apply basic food-related skills such as proper food selection, preparation, storage, and usage. This “de-skilling” of food and cooking demonstrates the need to expose youth to cooking/culinary and food literacy programs. The creation of food literacy and cooking programs using existing culinary infrastructure and linking with experts in the community (e.g., local guest chefs and farmers) might be a solution to facilitate the provision of these important skills to this population and others. In the process, food literacy and cooking skills development programs also will improve attitudes, self-efficacy, nutrition knowledge, confidence, and perceived cooking ability (Thomas & Irwin, 2011).

Youth represents a key period for social and biological development which can impact health-related behaviours and beliefs (Ruland, 2005). Lang and Caraher (1999) acknowledge health promotion as paramount for changing knowledge, attitudes, and behaviour, and food literacy and cooking skills provide a catalyst for the intersection of all three. Health professionals are in a position to advocate for the inclusion of cooking skills programs to re-skill an already vulnerable youth population with limitations in food literacy and cooking skills development.

Biography

Dr Heather Thomas is a Registered Dietician at the Middlesex-London Health Unit and Adjunct Professor at Brescia University College, affiliated with Western University (formerly called The University of Western Ontario). Heather researches and writes about food literacy as it impacts youth and applies this program of study to her practice in public health nutrition. She is actively involved in her provincial association, the Ontario Society of Nutrition Professionals in Public Health, the official voice of Registered Dieticians working in public health in Ontario.

Dr Jennifer Irwin is an Associate Professor in the Faculty of Health Sciences, School of Health Studies, Western University (formerly called The University of Western Ontario). She is also a certified life coach with the International Coach Federation and has focused training in Motivational Interviewing. While her research focuses primarily on obesity prevention and treatment, her areas of specialization include: Motivational Interviewing and life coaching for health-related behaviour change (e.g., obesity- and smoking-related behaviours) and the promotion of physical activity and healthy dietary intake behaviours.

References

- Anderson, A. S., Bell, A., Adamson, A., & Moynihan, P. (2002). A questionnaire assessment of nutrition knowledge - validity and reliability issues. *Public Health Nutrition*, 5(3), 497-503. doi:10.1079/PHN2001307
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychology Review*, 84, 55-65. <http://www.jneb.org/>
- Biro, F. M., & Wien, M. (2010). Childhood obesity and adult morbidities. *American Journal of Clinical Nutrition*, 91, 1499S-1505S. doi: 10.3945/ajcn.2010.28701B
- Byrd-Bredbenner, C. (2004). Food preparation knowledge and attitudes of young adults. *Topics in Clinical Nutrition*, 19(2), 154-163. <http://journals.lww.com/topicsinclinicalnutrition/pages/default.aspx>
- Centres of Excellence for Children's Well-Being. (2009). *Youth engagement*. Retrieved from <http://www.engagementcentre.ca/vision.php>
- Community Nutritionists Council of British Columbia. (2004). *Making the connection - food security and public health*. Victoria, BC: Ministry of Health Services and the Health Authorities of British Columbia. Retrieved from http://www.healbc.ca/files/Making_the_connection_Food_Security_and_Public_Health.pdf
- Dietitians of Canada. (2007). *Community food security: Position of dietitians of Canada*. Retrieved from <http://www.dietitians.ca/Downloadable-Content/Public/cfs-position-paper.aspx>
- Dobizl, J. K. (2002). *Understanding at-risk youth and intervention programs that help them succeed in school*. Retrieved from <http://www2.uwstout.edu/content/lib/thesis/2002/2002dobizlj.pdf>
- Government of Canada (2011). *Childhood Obesity*. Retrieved from <http://healthycanadians.gc.ca/init/kids-enfants/obesit/index-eng.php>
- Green, L. W., & Kreuter, M. W. (2005). *Health promotion planning: An educational and ecological approach* (4thed.). New York, NY: McGraw-Hill Companies Incorporated.
- Guba, E. G, & Lincoln, Y. S. (1989). *Fourth generation evaluation*. London, UK: Sage.
- Hadland, S. E., Kerr, T., Li K., Montaner, J. S., & Wood, E. (2009). Access to drug and alcohol treatment among a cohort of street-involved youth. *Drug and Alcohol Dependence*, 101(1-2), 1-7. doi: 10.1016/j.drugalcdep.2008.10.012

- Haley, L., & McKay, E. A. (2004). "Baking gives you confidence": Users' views of engaging in the occupation of baking. *British Journal of Occupational Therapy*, 67(3), 125-128. Retrieved from <http://www.ingentaconnect.com/content/cot/bjot>
- Health Canada. (2007a). *Eating well with Canada's food guide*. Retrieved from http://www.hc-sc.gc.ca/fn-an/alt_formats/hpfb-dgpsa/pdf/food-guide-aliment/view_eatwell_vue_bienmang-eng.pdf
- Health Canada. (2007b). *Eating well with Canada's food guide: A resource for educators and communicators*. Retrieved from <http://hc-sc.gc.ca/fn-an/pubs/res-educat/res-educat-eng.php>
- Kidd, S. A., & Kral, M. J. (2005). Practicing participatory action research. *Journal of Counseling Psychology*, 52(2), 187-195. doi: 10.1037/0022-0167.52.2.187
- Lai Yeung, W. T. (2007). A study of perceptions of food preparation skills in Hong Kong adolescents. *Journal of the Home Economics Institute of Australia*, 14(2), 16-24. Retrieved from <http://heia.com.au/>
- Lang, R., & Caraher, M. (1999). Can't cook, won't cook: A review of cooking skills and their relevance to health promotion. *International Journal of Health Promotion & Education*, 37(3), 89-100. Retrieved from <http://heia.com.au/>
- Lang, R., & Caraher, M. (2001). Is there a culinary skills transition? Data and debate from the UK about changes in cooking culture. *Journal of the Home Economics Institute of Australia*, 8(2), 2-14. Retrieved from <http://heia.com.au/>
- Lang, R., Caraher, M., Dixon, P., & Carr-Hill, R. (1999). *Cooking skills and health*. Retrieved from http://www.nice.org/nicemedia/documents/cooking_skills_health.pdf
- Larson, N. I., Perry, C. L., Story, M., & Neumark-Sztainer, D. (2006). Food preparation by young adults is associated with better diet quality. *Journal of the American Dietetic Association*, 106(12), 2001-2007. doi:10.1016/j.jada.2006.09.008
- Larson, N. I., Story, M., Eisenberg, M. E., & Neumark-Sztainer, D. (2006). Food preparation and purchasing roles among adolescents: Associations with sociodemographic characteristics and diet quality. *Journal of the American Dietetic Association*, 106(2), 211-218. doi: 10.1016/j.jada.2005.10.029
- Lee, R. E., & Cubbin, C. (2002). Neighborhood context and youth cardiovascular health behaviours. *American Journal of Public Health*, 92(3), 428-436. Retrieved from <http://ajph.aphapublications.org/>
- Lerner, R. M., Fisher, C. B., & Weinberg, R. A. (2007). Toward a science for and of the people: Promoting civil society through the application of developmental science. *Child Development*, 71, 11-20.
- Levy, J., & Auld, G. (2004). Cooking classes outperform cooking demonstrations for college sophomores. *Journal of Nutrition Education and Behavior*, 36, 197-203. doi: 10.1016/S1499-4046(06)60234-0
- Ludwig, D. S., Peterson, K., E., & Gortmaker, S. L. (2001). Relation between consumption of sugar-sweetened drinks and childhood obesity: A prospective, observational analysis. *Lancet*, 357(9255), 505-508. doi: 10.1016/S0140-6736(00)04041-1

- Meehan, M., Yeh, M., & Spark, A. (2008). Impact of exposure to local food sources and food preparation skills on nutritional attitudes and food choices among urban minority youth. *Journal of Hunger & Environmental Nutrition*, 3(4), 456-471. Retrieved from <http://www.tandf.co.uk/journals/WHEN>
- Moore, K. A. (2006). *Defining the term "at risk."* Retrieved from http://www.childtrends.org/Files//Child_Trends-2006_10_01_RB_DefiningAtRisk.pdf
- Patton, M. Q. (2002). *Qualitative research & evaluation methods*. (3rd ed.). Thousand Oaks, CA: Sage Publications. QSR International. (2008). QSR NVivo (version 8) [Computer software]. Cambridge, MA: QSR International.
- Rachlis, B. S., Wood, E., Zhang, R., Montaner, J. S., & Kerr, T. (2009). High rates of homelessness among a cohort of street-involved youth. *Health & Place*, 15(1), 10-17. doi: 10.1016/j.healthplace.2008.01.008
- Rolls, B., Ello-Martin, J. A., & Tohill, B. C. (2004). What can intervention studies tell us about the relationship between fruit and vegetable consumption and weight management? *Nutrition Reviews*, 62(1), 1-17. doi: 10.1111/j.1753-4887.2004.tb00001.x
- Ruland, C. D. (2005). *Adolescents: Orphaned and vulnerable in the time of HIV and AIDS. Youth lens on reproductive youth issues* (Paper 6). Arlington, VA: Family Health International.
- Shields, M., & Tjepkema, M. (2006). *Regional differences in obesity*. Retrieved from <http://www.statcan.gc.ca/ads-annonces/82-003-x/pdf/4225223-eng.pdf>
- Statistics Canada. (2006). *Canadian Community Health Survey: Overview of Canadians' eating habits*. Retrieved from <http://www.statcan.gc.ca/daily-quotidien/060706/dq060706b-eng.htm>
- Sussman, S., Moran, M. B., Sun, P., Pokhrel, P., Gunning, M., Kniazev, V., & Masagutov, R. (2010). Peer group self-identification in samples of Russian and U.S. adolescents. *Journal of Drug Education*, 40(2), 203-215. doi: 10.2190/DE.40.2.g
- Taylor, J. P., Evers, S., & McKenna, M. (2005). Determinants of healthy eating in children and youth. *Canadian Journal of Public Health*, 96, S20-S26. Retrieved from <http://www.cpha.ca/en/cjph.aspx>
- Thomas, H. M., & Irwin, J. D. (2011). Cook It Up! A community-based cooking program for at-risk youth: Overview of a food literacy intervention. *BMC Research Notes*, 4, 495.
- Winter, M. J., Stanton, L., & Boushey, C. J. (1999). The effectiveness of a food preparation and nutrition education program for children. *Topics in Clinical Nutrition*, 14(2), 48-58. Retrieved from <http://journals.lww.com/topicsinclinicalnutrition/pages/default.aspx>
- World Health Organization. (2002). *The World Health Report 2002: Reducing risks, promoting healthy life*. Retrieved from http://www.who.int/whr/2002/en/whr02_en.pdf
- World Health Organization. (2003). *Social determinants of health: The solid fact*. (2nded.). Retrieved from http://www.euro.who.int/__data/assets/pdf_file/0005/98438/e81384.pdf

Wrieden, W. L., Anderson, A. S., Longbottom, P. J., Valentine, K., Stead, M., Caraher, M., & Dowler, E. (2007). The impact of a community-based food skills intervention on cooking confidence, food preparation methods and dietary choices - an exploratory trial. *Public Health Nutrition*, 10(2), 203-211. doi: 10.1017/S136980007246658

*Functional apparel for cosmetologists:
User assessment of developed product function*

Dorothy Thompson, Elizabeth U Anyakoha

University of Uyo, Nigeria; University of Nigeria, Nsukka

Abstract

The purpose of this study was to assess the functional attributes of apparel developed for cosmetologists in order to establish the acceptability of the product by potential consumers of small-, medium-, and large-size categories. The study was carried out in Lagos, Nigeria. The population comprised 3820 cosmetologists. Purposive sampling technique was employed to select 24 cosmetologists as study participants. The instrument of study was a 23-item Functional Apparel Design Assessment Instrument for Cosmetologists (FADAC). The internal consistency of the instruments was established using Cronbach alpha coefficient. One research question and one hypothesis guided the study. The research question was answered using means and standard deviations while the null hypothesis was tested using Analysis of Variance (ANOVA) at .05 level of significance. Results indicated that small-, medium-, and large-sized cosmetologists did not significantly differ ($p > .05$) in their mean ratings on mobility ($F = 2.227$; $p = .113$), comfort ($F = 1.400$; $p = .269$), or protection/safety ($F = 1.750$; $p = .198$). The implementation of the findings of this study will facilitate large scale production of occupational apparel that will meet design and human factors within the cosmetology workforce.

Keywords: Cosmetologists, functional apparel, user assessment, product function

Introduction

Cosmetology is the treatment of hair, skin, and nails, using cosmetic applications to beautify and improve appearance. It involves the use of equipment and tools which may pose work-related hazards if not handled and stored properly. Cosmetology affords enormous employment opportunities for numerous men and women both in Nigeria and globally. In the United States alone, according to the United States Board of Labour Statistics (2008), over 825,000 people are registered as workers in the cosmetology industry either as barbers, skin care specialists, or nail technicians. In Nigeria, the National Directorate of Employment (NDE) (Federal Republic of Nigeria, 2006) in collaboration with Ministry of Labour and Productivity (National Labour and Productivity Manual, 2006) reported an estimated 24,020 registered cosmetologists. Out of this number, Lagos State alone registered 3,820 cosmetologists. Cosmetology has remained a huge fashion-oriented and beauty care enterprise over the past decades, as it plays a key role in people's lives and well-being.

Within the cosmetology work environment the activities, facilities, equipment, tools, chemicals and other materials necessitate the use of special clothing that should be compliant with user needs. This is because clothing can enhance or hinder body functions

among different groups of people and in different occupations. In a needs-assessment study previously carried out on cosmetologists' functional apparel, participants indicated that they are exposed to water/chemical splash on the body and clothes, discomfort with regular clothing, problems with handling of tools, and repeated movements around the work environment. In a study carried out by Barker (2007) on police officers' vests, respondents indicated that the ballistic vests designed for them inhibited their movement on a number of activities. In a study of soccer uniforms, Holland (2007) observed that the need for increased research on measures of mobility to enhance performance and integrity of functional apparel products is pertinent.

According to Barker (2007), functional apparel serves as protection for the wearer from environmental conditions as well as work- or task-related conditions that expose wearers to certain risks in operation. Task-related protection requires a wide variety of clothing, each item designed for a specific end use. Branson and Sweeney (1991) therefore propose that person attributes, clothing attributes, and environment attributes influence comfort. McCullough, Kwon, and Shim (2003) state that protective clothing systems often contribute to heat stress when worn by people in hot and humid environments, and/or at high activity levels. Research, according to Fowler (2003), indicates that clothing that is not comfortable will not be worn or accepted in totality; however, such uncomfortable clothing items could be made more comfortable by the creative abilities of the wearers, or could be rejected outright. These conditions pose major challenges in selection and usage of functional apparel (apparel designed to meet special needs of persons in diverse situations). A design process framework is often used in the development of functional apparel.

The establishment of a school of Cosmetology in Nigeria as far back as 1959, about five decades ago, has resulted in the emergence of many individuals practising the trade. They operate in a free market situation where laws and regulations guiding the industry operation are not properly spelt out. As a result, this industrial sub-sector is flooded with all kinds of workers who are non-professionals and become exposed to various environmental hazards that may impede job performance and present a poor corporate image. It is therefore necessary for workers in this industrial sub-sector to have a corporate identity through the use of a common apparel to address uniformity in appearance and efficiency in operation (Osinsanya, 2005). It has also been observed that manufacturers of beauty supplies in the cosmetology trade have attempted to design various forms of protective clothing for cosmetologists but the total functionality and appropriateness of the product to the work environment is still not readily attained. It was also observed by the researcher that the occupation of cosmetology as practised in Lagos does not lay emphasis on dress code to cater for the activities and professional image of the trade. Consequently, cosmetologists in Lagos lack existing functional apparel for their operations.

The thrust of this study (which is part of a bigger study) utilizes the final stage of the functional design process framework (FDP) of Dejonge (1984). The preceding stages of the design process take the designer step-by-step from the initial idea through an evaluation of the final idea. The first step of Dejonge's design process is the general request, or a broad problem statement of the clothing need. The request can be a general statement of the objectives made by the designer or an expression of need from the wearer. This step can

incorporate brainstorming, user interviews, and observations of garments and the wearer (Dejonge, 1984; Fowler, 2003). The next step is the exploration of the design situation, which involves statement of objectives, literature search, and further definition of the problem. Further observations or market analysis could also be part of this step (Bergen, Capjack, McConnan, & Richards, 1996). The problem structure is perceived through an assessment of critical factors. A designer may find needs assessment, movement analysis, thermal assessment, impact assessment, and socio-psychological assessment helpful at this stage (Dejonge, 1984). The next step is that the design specifications and criteria are established, including functional and psychological requirements. It may be necessary to prioritise the criteria. When the prototype is developed, it should be evaluated against the design specifications and fit-tested for suitability in optimum performance. After the prototype is evaluated, the final design development occurs. There should be an objective evaluation of the final design, which may include a range of motion test, video analysis, comfort testing or movement analysis (Huck, Maganga, & Kim, 1997). There may also be a subjective user-evaluation to complement the objective evaluation of the design (Dejonge, 1984). This whole process framework is to make designing better and responsive to user needs.

The purpose of this study therefore was to subjectively assess the functional attributes of prototype apparel developed for cosmetologists in Lagos, Nigeria. Specifically, the study determined the mean ratings of functional apparel users (small, medium, and large) on functional criteria of movement/mobility, safety/protection, and comfort.

Methods

The study employed a research and development design. It was conducted in Lagos State. The population used for the study was 3,820 cosmetologists. Purposive sampling technique was used to select 24 cosmetologists who responded to the research instrument. The instrument, face-validated by five experts, was used for data collection. This was a 23-item Functional Apparel Design Assessment Instrument for Cosmetologists (FADAC). The internal consistency of the instrument was established using Cronbach alpha coefficient for various clusters of FADAC: mobility, comfort, and safety/protection criteria. The values were 0.81, 0.71, and 0.76. The research questions were answered using means and standard deviations, while the hypothesis was tested using Analysis of Variance (ANOVA) at .05 level of significance.

Product design and development

The researchers brainstormed over design ideas to arrive at a final design that could best capture the performances of cosmetologists regarding functional apparel for usage in their occupation (see Figures 1-6). Patterns were developed for this final design idea based on the mean measurements that were earlier obtained in the first phase of the study in small-, medium-, and large-size categories. The pattern-making principles of Armstrong (2010) were adopted and used to produce the final pattern for the prototype apparel. The apparel product was then constructed in small, medium, and large sizes, with apparel construction methods outlined by Glock and Kunz (2000). Study participants were thereafter asked to assess the developed product.



Figure 1: Cosmetologist with developed functional apparel set (shirt, pants and apron)



Figure 2: Cosmetologist without protective apron in a warm saloon environment

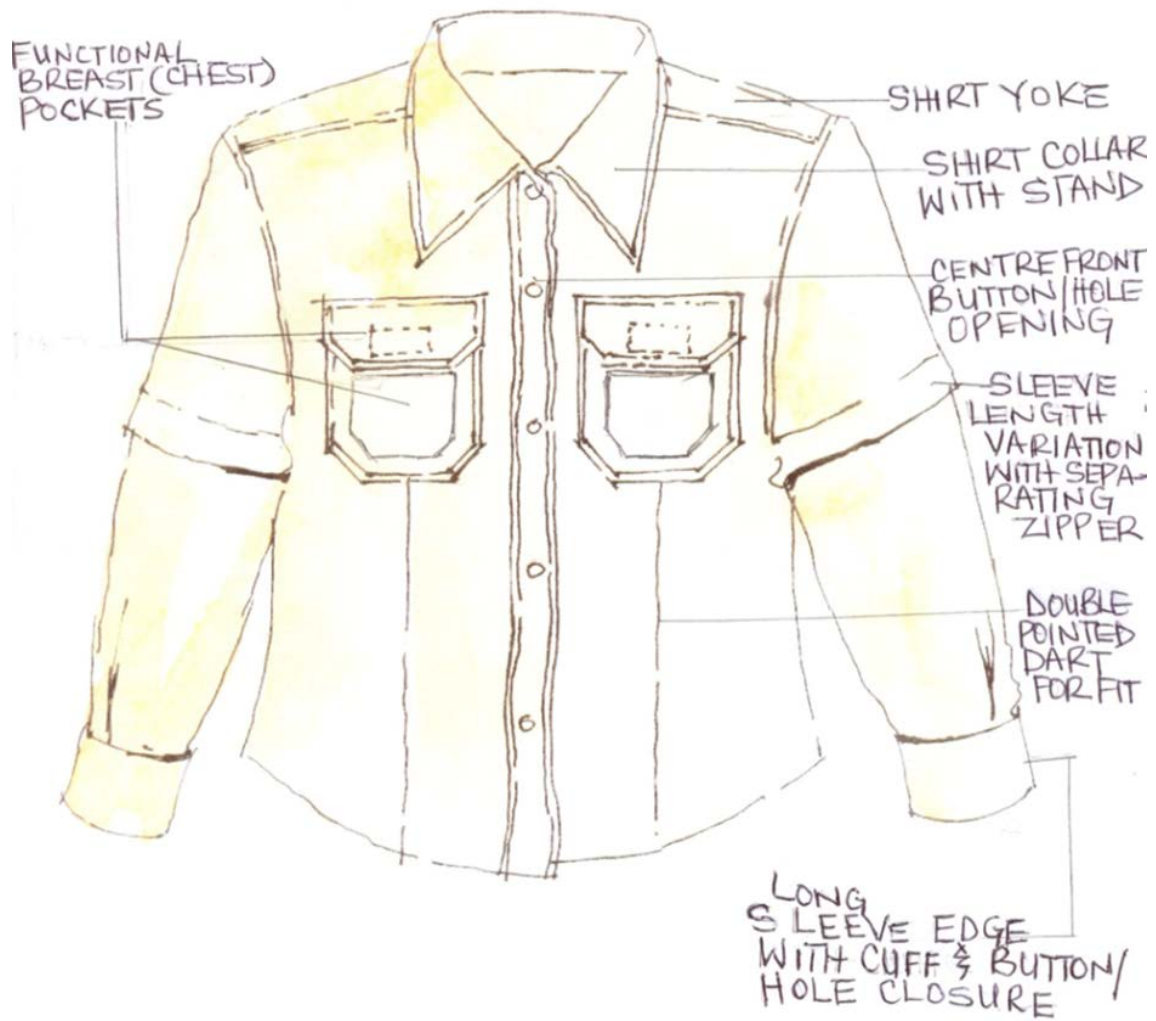


Figure 3: Shirt - front view



Figure 4: Pant - front view

SIDE VIEW OF PANT

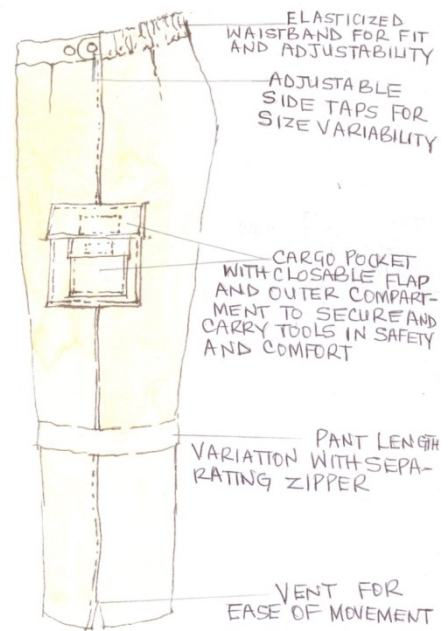


Figure 5: Pant - side view

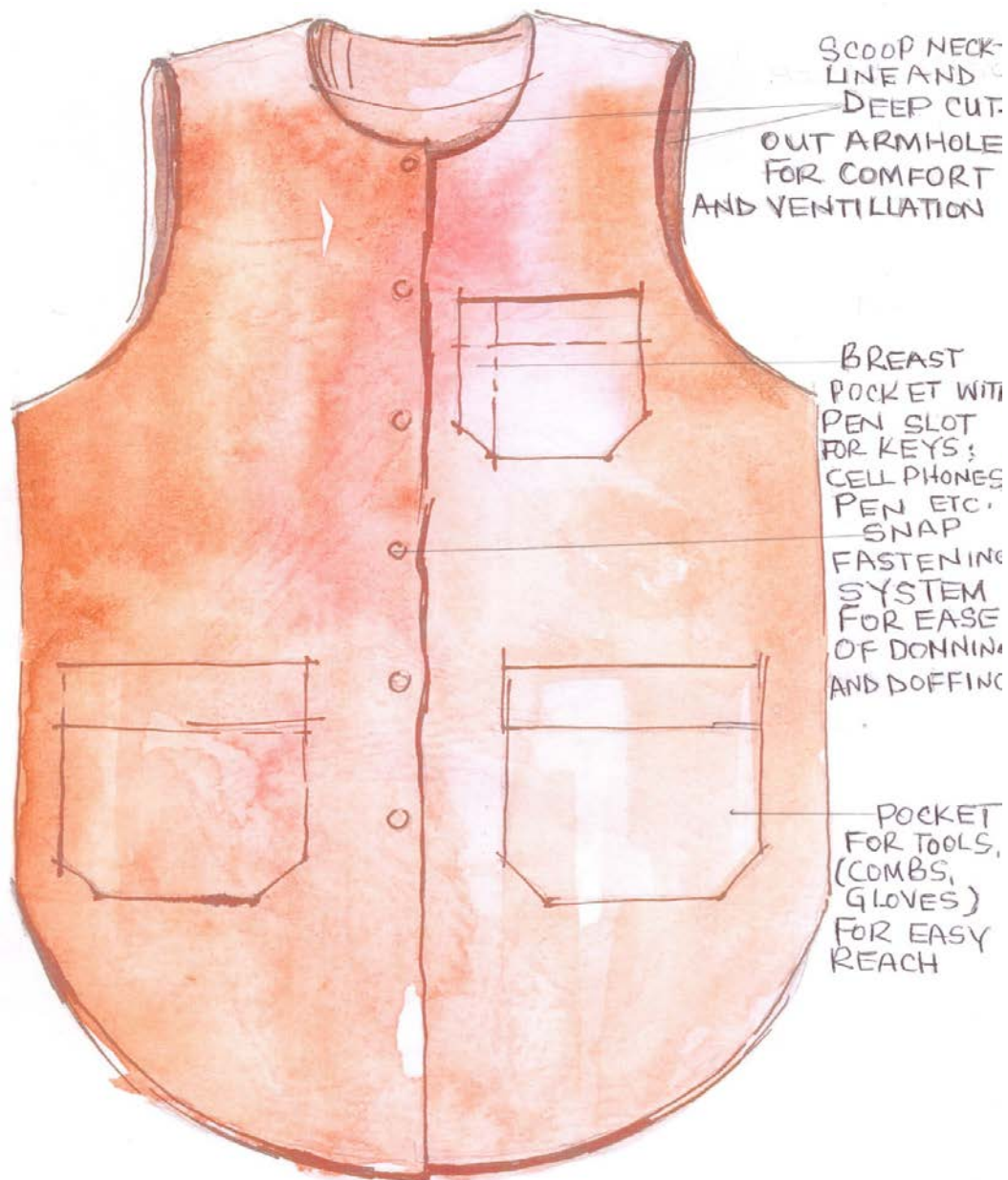


Figure 6: Apron made with water repellent fabric

Assessment/scoring of the functional apparel product

Each of the 24 cosmetologists' models was given the FADAC instrument to go through before completing it. The movement assessment interview was conducted by the researcher for the models. After each movement, subjects rated themselves on a 5-point Likert-type scale to determine "how easy or how hard" it was to perform the movements wearing the functional apparel product. After the interview session, subjects were allowed independent time to rate the functional apparel product on movement/mobility, comfort, and safety/protection attributes, in a laboratory setting. The subjects were again given the apparel to wear and asked to perform tasks in a field setting and to rate the prototype apparel function and

performance on a 5-point semantic differential scale on the parameters outlined for evaluation. All copies of the FADAC instruments were given back to the researcher after the two rating sessions. This represents a hundred percent return. The responses from the cosmetologists were collated and the average score was used for the analysis.

Data presentation and analysis

Research question

What are the mean ratings of cosmetologists on mobility, comfort, and safety/protection of the prototype functional apparel?

The data for answering this research question are summarised in Tables 1, 2, and 3.

Table 1: Mean ratings of cosmetologists on mobility variables

S/n	Mobility variables	\bar{X}	SD	Remark
1	Free movement of arms/Restricted movement of arms	3.67	.761	Positive
2	Free movement of torso/Restricted movement of torso	3.92	.654	Positive
3	Free movement of legs/Restricted movement of legs	3.83	.702	Positive
4	Ease of movement/confining	4.00	.590	Positive

Note: Variables were rated on a 5-point semantic differential scale where 5 was very positive and 1 was very negative

Table 1 shows the mean ratings of cosmetologists (small, medium, and large) on mobility variables regarding the functional apparel. There were four of these variables measured by having participants rate them on bipolar adjective sets on a 5-point semantic differential scale (5 = Very positive, 1 = Very negative). The adjective sets included "free movement of arms/restricted movement of arms", "free movement of torso/restricted movement of torso", "free movement of legs/restricted movement of legs", and "ease of movement/confining". Scores were tallied for each adjective set. Table 1 clearly illustrates these data by mean and standard deviation values. All of the four adjective sets received positive mean ratings from these scores, showing that cosmetologists experience appropriate ease of movement on all the body parts when they move with the prototype apparel. This further indicates that participants have acceptable mobility when wearing the functional apparel.

Table 2: Mean ratings of cosmetologists on comfort of functional apparel

S/n	Comfort variables	\bar{X}	SD	Remarks
1	Comfortable/uncomfortable	4.17	.702	Positive
2	Flexible/rigid	3.75	.847	Positive
3	Cool/hot	4.08	.776	Positive
4	Soft to the skin/harsh to the skin	4.25	.737	Positive
5	Breathable/not breathable	4.25	.608	Positive
6	Feels soft/feels stiff	4.17	.565	Positive
7	Non irritating/irritating	3.92	.504	Positive
8	Loose/tight	3.75	.737	Positive

Note: Variables were rated on a 5-point semantic differential scale where 5 was very positive and 1 very negative

Table 2 shows the mean ratings of cosmetologists on comfort of functional apparel. The table indicates that comfort was measured by having participants rate eight bipolar adjective sets on a 5-point semantic differential scale (5 = Very positive, 1 = Very negative). The adjective sets are "comfortable/uncomfortable", "flexible/rigid", "soft to the skin/harsh to the skin", "breathable/not breathable", "feels soft/feels stiff", "non-irritating/irritating", "cool/hot", and "loose/tight". The functional apparel received more positive ratings on five out of the eight adjective sets. There is a concern that the cosmetologists may not have been able to perceive whether the functional apparel was "flexible/rigid", "non-irritating/irritating", and "loose/tight". However, the mean scores on all items in the comfort scale were quite satisfactory which shows that cosmetologists were satisfied with the comfort of the functional apparel.

Table 3: Mean ratings of cosmetologists on safety/protection of functional apparel

S/n	Safety/Protection	\bar{X}	SD	Remarks
1	Easy to move in/Hard to move in	4.00	.590	Positive
2	Portable/Not portable	3.75	.737	Positive
3	Safe/Unsafe	3.67	.637	Positive
4	Provides protection/Lack of protection	4.25	.608	Positive
5	Lightweight/Heavyweight	4.17	.702	Positive
6	Not sturdy/Sturdy	3.67	.761	Positive
7	Functional/Not functional	4.25	.737	Positive

Note: Safety variables were rated on a 5-point semantic differential scale where 5 was very positive and 1 very negative

Data in Table 3 reveals that seven adjective sets were used to measure safety/protection variable of the functional apparel on a 5-point semantic differential scale where 1 was

associated with a very negative attribute assessment and 5 was associated with a very positive attribute assessment. The bipolar adjective sets included “easy to move in/hard to move in”, “portable/not portable”, “safe/unsafe”, “provides protection/lack of protection”, “lightweight/heavyweight”, “sturdy/not sturdy”, and “functional/non-functional”. Negative scores were tallied from ratings of 1.0 to 2.5, while positive scores were tallied from ratings 3.5 to 5.0. A rating between 3.0 and 3.5 was considered neutral. Table 3 further displays the mean and standard deviations for each adjective set. All of the adjective sets were positively rated showing that the design was successful. However two adjective sets were rated most positively, namely, “provides protection/lack protection” and “functional/non-functional”, with a mean score of 4.25 each. Each of these ratings shows that the functional apparel design was perceived to be safe and protective, optimal and well-constructed.

Hypothesis

There is no significant difference in the mean ratings of small-, medium-, and large-size-based users on mobility, comfort, and safety/protection requirements of the functional apparel. Data verifying this hypothesis are presented in Tables 4, 5, and 6.

Table 4: Result of one-way ANOVA of cosmetologists’ ratings on mobility requirements of functional apparel

S/n	Source of Variation		Sum of Squares (SS)	d f	Mean Squares (MS)	f.cal	Sig. .05	Decision
1.	Free movement of arms/ Restricted movement of arms	Between Groups	2.333	2	1.167	2.227	.133	Accept
		Within Groups	11.000	21	.524			
		Total	13.333	23				
2.	Free movement of torso/ Restricted movement of torso	Between Groups	2.333	2	1.167	3.267	.058	Accept
		Within Groups	7.500	21	.357			
		Total	9.833	23				
3.	Free movement of legs/ Restricted movement of legs	Between Groups	2.333	2	1.167	2.722	.089	Accept
		Within Groups	9.000	21	.429			
		Total	11.333	23				
4.	Ease of movement/ confining	Between Groups	1.000	2	.500	1.500	.246	Accept
		Within Groups	7.000	21	.333			
		Total	8.000	23				

Table 4 shows that the p-value for all the variables used in the assessment of mobility in functional apparel are $>.05$. The implication here is that the hypothesis which states that there is no significant difference in the mean ratings of small-, medium-, and large-size-based users on mobility requirements of functional apparel was accepted.

Table 5: Result of one-way ANOVA of cosmetologists' rating on comfort of the functional apparel

S/n	Source of variation		Sum of Squares (SS)	DF	Mean Square (MS)	F-cal	Sig. .05	Decision
1.	Comfortable/uncomfortable	Between Groups	1.333	2	.667	1.400	.269	Accept
		Within Groups	10.000	21	.476			
		Total	11.333	23				
2.	Flexible/rigid	Between Groups	4.000	2	2.000	3.360	.054	Accept
		Within Groups	12.500	21	.595			
		Total	16.500	23				
3.	Cool/hot	Between Groups	4.333	2	2.167	4.789	.019	Reject
		Within Groups	9.500	21	.452			
		Total	13.833	23				
4.	Soft to the skin/harsh to the skin	Between Groups	1.000	2	.500	.913	.417	Accept
		Within Groups	11.500	21	.548			
		Total	12.500	23				
5.	Breathable/not breathable	Between Groups	1.000	2	.500	1.400	.269	Accept
		Within Groups	7.500	21	.357			
		Total	8.500	23				
6.	Feels soft/feels stiff	Between Groups	4.333	2	2.167	15.167	.000	Reject
		Within Groups	3.000	21	.143			
		Total	7.333	23				
7.	Non-irritating/irritating	Between Groups	2.333	2	.1.167	7.000	.005	Reject
		Within Groups	3.500	21	.167			
		Total	5.833	23				
8.	Loose/tight	Between Groups	.250	2	.125	.214	.809	Accept
		Within Groups	12.250	21	.583			
		Total	12.500	23				

The hypothesis sought to compare the mean ratings of small-, medium-, and large-size-based users on the comfort of functional apparel. The rating was done on a 5-point semantic differential scale from very positive (5) to very negative (1). The scores were tallied and ANOVA was run to test the significant differences in the mean ratings of the 3 groups of respondents. Out of eight items on the scale, there was no significant difference ($P = >.05$) in five of the variables while there were significant differences ($P = <.05$) in the remaining three of the variables.

Table 6: Result of one-way ANOVA of cosmetologists' rating on safety/protection variables of functional apparel

S/n	Source of variation		Sum of Squares (SS)	DF	Mean Square (MS)	F-cal	Sig. .05	Decision
1.	Easy to move in/ Hard to move in	Between Groups	3.000	2	1.500	6.300	.007	Reject
		Within Groups	5.000	21	.238			
		Total	8.000	23				
2.	Portable/Not portable	Between Groups	.000	2	.000	.000	1.000	Accept
		Within Groups	12.500	21	.595			
		Total	12.500	23				
3.	Safe/Unsafe	Between Groups	1.333	2	.667	1.750	.198	Accept
		Within Groups	8.000	21	.381			
		Total	9.333	23				
4.	Provides protection/Lack of protection	Between Groups	.000	2	.000	.000	1.000	Accept
		Within Groups	8.500	21	.405			
		Total	8.500	23				
5.	Lightweight/ Heavyweight	Between Groups	5.333	2	2.667	9.333	.001	Reject
		Within Groups	6.000	21	.286			
		Total	11.333	23				
6.	Not sturdy/ Sturdy	Between Groups	2.333	2	1.167	2.227	.133	Accept
		Within Groups	11.000	21	.524			
		Total	13.333	23				
7.	Functional/Not functional	Between Groups	1.000	2	.500	.913	.417	Accept
		Within Groups	11.500	21	.548			
		Total	12.500	23				

Table 6 shows that the P-value for five out of the seven variables used in the assessment of safety/protection in functional apparel are $> .05$ while two are $< .05$. The null hypothesis was therefore accepted in five of the variables and rejected in two.

Findings

Mean ratings of cosmetologists on movement analysis revealed that both basic body movements and task-related movements were "easy to do", with mean values > 4.00 except in "torso twists" and "ladder climbing", which scored above the neutrality ratings with 3.92 and 3.75 mean values respectively. This indicates that the functional apparel did not impede the movements of cosmetologists during movement assessment. In addition to rating movements, general mobility was also rated while wearing the functional apparel. The mean values ranged from 3.67-4.00 on all four variables in the scale. This shows that cosmetologists experienced appropriate ease of movement and acceptable mobility when they wore the prototype functional apparel. The mobility variables were however perceived by judges higher than the cosmetologists. The grand mean values for the four groups of judges showed mean ratings ranging from 4.18-4.86. This indicates that judges rated the functional apparel higher in its ability to positively satisfy the mobility requirements of cosmetologists in their operation.

Functional apparel received more positive mean ratings on five out of the eight items on the comfort scale. The mean scores here ranged from 4.08 - 4.25. The other three items on the scale had values ranging from 3.75 - 3.92. There is a concern that the subjects may not have been able to appropriately perceive whether the apparel was "loose/tight", "flexible/rigid", or "non-irritating/irritating". However, mean scores on all items on the comfort scale were quite satisfactory, indicating that cosmetologists were quite satisfied with the comfort of the apparel. The collective mean ratings for the judges show that they had mean scores ranging from 4.05 - 4.73 on seven out of the eight variables on the comfort ratings scale. The variable "loose/tight" scored the least mean value of 3.32, indicating that judges were neutral in their perception of the apparel being loose or tight on the models.

The mean scores on all the items on the safety/protection rating scale were positively high. Out of the seven items on the semantic differential safety scale, four items received ratings ranging from 4.00-4.25. These items include "functional/non-functional", "provides protection/lack of protection", "light weight/heavy weight", and "easy to move in/hard to move in". The other three items show positive ratings between 3.67-3.75. The result shows that the functional apparel was perceived to be safe, protective, that it functioned well and was constructed well (see Table 14). Mean ratings of judges on safety/protection variables were higher than the cosmetologists on all the seven items on the safety scale. Values ranged from 4.23-4.73.

Discussion

The present study's purpose was targeted at the assessment of functional apparel product developed for cosmetologists by the users of the product. The study's discussion is based on the criteria of mobility, comfort and safety/protection. However, prior to the discussion of these variables, analysis of the movement assessment result is deemed necessary to support the mobility variable.

The mean scores of respondents on the movement assessment revealed that subjects rated both basic and task-related movements above 4.00, except in "torso twists" and "ladder climbing" which had satisfactory scores of 3.92 and 3.75 respectively. It could be inferred that the functional apparel did not impede the movements of cosmetologists during the movement assessment as was expected, as each of the movements outlined in the movement protocol is pertinent to cosmetology operation. Cosmetology practitioners are required to perform many of them on a regular basis. This finding negates the findings of a similar study carried out by Barker (2007) where police officers indicated that their ballistic vests inhibited their movement during a number of activities. This could be disconcerting as law enforcement agents are not supposed to experience limited movement while performing daily job-related tasks. The functional apparel designed for cosmetologists was successful in this regard and its implementation will not interfere with the performance of any task in the operational framework of the cosmetology occupation.

The findings of the study in Tables 1 and 4 revealed that all of the four adjective sets on the mobility scale received positive mean ratings. This finding lends support to the findings of the movement analysis to confirm that cosmetologists experienced appropriate ease of movement on all the body parts and during task-related movements when they wore the prototype

apparel. This is indicative of acceptable mobility and high levels of satisfaction. However, as Holland (2007) observes, there is need for increased research on measures of mobility to enhance performance and integrity of functional apparel products. Higher mean values recorded for the judges indicate that the judges perceived a higher integrity of the functional apparel sets in its ability to positively satisfy the mobility requirement needed by cosmetologists to function in their field. There were no significant differences found on all four variables in the mobility scale ($p > .05$).

Mean ratings of eight comfort descriptors on the comfort scale revealed that the functional apparel received more positive ratings from the three categories of cosmetologists in five out of the eight adjective sets (see Tables 2 and 5). The perception of the cosmetologists on the comfort descriptors of "flexible/rigid", "non-irritating/irritating", and "loose/tight" was a little lower than the rest even though all ratings revealed satisfactory scores in small-, medium-, and large-size categories. This judgement was also supported by the expert judges. Significant differences were found in certain variables, while in others, there were no significant differences. The judgements of comfort on all size categories of cosmetologists as satisfactory were surprising. Barker (2007) in her study asserts that it is generally expected that as a person's size increases in weight and/or height their comfort level will decrease due to increased fitting problems. This phenomenon was not evident in this assessment because the assessment was done under favourable environmental conditions which may not have allowed the cosmetologists to perceive any discomfort. This contradicts the findings of Branson and Sweeney (1991) and McCullough et al. (2003) which posit that clothing comfort results from the interactions of various physical and non-physical stimuli for a person wearing a given ensemble under given environmental conditions. It is suggested that a follow-up testing be done in hot-humid environments and with an extended testing period to properly determine any differences in comfort levels of study participants.

The protection/safety variables were positively rated with scores ranging from 3.67-4.25 for the three sets of cosmetologists and 4.23-4.73 for judges. Out of seven variables tested, there were significant differences found in two variables with $P < .05$ and no significant differences found in five of the variables ($P > .05$). This shows that the design was successful. However, two items on the scale were rated most positively - "provides protection/lack protection" and "functional/not functional (see Tables 3 & 6). Each of these ratings confirms that the functional apparel design was perceived to be protective, that it functions well, and is constructed well. This finding agrees with Fowler's (2003) findings with police officers' ballistic clothing which was perceived to be functionally protective. Since the variable "safe/unsafe" received the lowest positive score of 3.67 indicating that the mean is not on the negative side of the scale, it could be deduced that the design, though not unsuccessful, could benefit from improvements in the safety aspect, perhaps with the introduction of detachable suspended pockets for tools around the waist line.

Conclusion

Cosmetologists require functional apparel to address the complexities of needs in their occupation. Mean ratings of cosmetologists indicated that the criteria established for a meaningful and promising product for this population was actualized and therefore product accepted. However, since some of the variables received a little above neutrality rating,

there is room for improvement in the styling and fabrication of the functional apparel product with the omission of the shirt collar and subsequent modification of the shirt neck to account for greater comfort. Ethnic fabrics could also be used in the design of the functional apparel product to capture the geographical location where this study was carried out.

The implementation of the results of the findings will boost the Research and Development exhibitions currently introduced by the National Universities Commission (NUC). This will generate creative and problem-solving approaches to addressing design problems among the universities so as to gain competitive advantage in the functional apparel market both locally and globally, and to make available the findings of the study to apparel manufacturing industries in Nigeria to encourage the production of functional apparel products in other occupations.

There is urgent need to enhance apparel design knowledge and skills of students in tertiary institutions so as to (a) enable them to cope, on graduation, with the development of functional apparel problems for people in diverse situations; (b) enable clothing and textiles graduates to gain competitive advantage in the functional apparel market both locally and globally; and (c) enable graduates of clothing and textiles to exercise creativity in the research and development of apparel projects to meet user needs in many occupational sub-sectors.

Biography

Dorothy Thompson (PhD) is a senior lecturer in the Department of Home Economics, University of Uyo, Nigeria. Dorothy researches and writes about clothing and apparel design and home economics in general. Dorothy is a member of SAAFEC, IFHE. She has written many articles in reputable journals, she also engages in home economics community/extension services. Email: dorothompson@yahoo.com

Professor Elizabeth Anyakoha (PhD) is a professor of Home Economics in the Department of Vocational & Technical Education, University of Nigeria, Nsukka. Professor Anyakoha researches and writes about Home Economics Education and practice both in Nigeria and globally. She is a member of IFHE. She is the Editor of Home Economics Research Association of Nigeria, Journal of Consumer Education and serves on several other reputable editorial boards. Email: euanyakoha@yahoo.com

References

- Armstrong, H. J. (2010). *Patternmaking for fashion design*. (5th ed.). New York: Prentice Hall.
- Barker, J. F. (2007). *Comfort perceptions of police officers toward ballistic vests*. Unpublished Doctoral Thesis. Florida State University Tallahassee, FL.
- Bergen, M. E., Capjack, L., McConnan, L. G., & Richards, E. (1996). Design and evaluation of clothing for the neonate. *Clothing and Textiles Research Journal*, 14, 225-233.

- Branson, D. H., & Sweeney, M. (1991). Conceptualization and measurement of clothing comfort: Toward a metatheory. In S. Kaiser & M. L. Damhorst (Eds.), *Critical linkages in textiles and clothing: Theory, method and practice* (pp. 94-105). Monument, CO: International Textile and Apparel Association.
- DeJonge, J. O. (1984). Forward: The design process. In S. M. Watkins, *Clothing: The portable environment* (pp. vii-xi). Ames, IA: Iowa State University Press.
- Federal Republic of Nigeria, National Directorate of Employment (2006). Registration of Occupations and Persons, 2006.
- Federal Republic of Nigeria. *National Labour and Productivity Manual* (2006).
- Fowler, J. (2003). *The evaluation and testing of two ballistic vests: A comparison of comfort*. Unpublished Master's thesis, Florida State University, Tallahassee, Florida.
- Glock, R. E., & Kunz, G. I. (2000). Creation and technical design. In *Apparel manufacturing: Sewn product analysis* (3rd ed.). Upper Saddle River, New Jersey: Prentice Hall.
- Holland, N. M. (2007). *A needs assessment of soccer uniforms*. Unpublished Master's Thesis. Florida State University, Tallahassee, FL.
- Huck, J., Maganga, O., & Kim, Y. (1997). Protective overalls: Evaluation of garment design and fit. *International Journal of Clothing Science and Technology*, 9, 45-61.
- McCullough, E., Kwon, M., & Shim, H. (2003). A comparison of standard methods for measuring water vapour permeability of fabrics. *Measurement Science and Technology*, 14, 1402-1408.
- Osinsanya, E. (2005). *Introduction to cosmetology: Principles and practice*. Lagos, Nigeria: Random House Publishers Limited.
- United States Department of Labor, Bureau of Labour Statistics - Cosmetology (2008). Retrieved from <http://www.bls.gov/oes/current/oes395012.htm> on 20/5/2010.

Notes for contributors

Frequency of publication

The International Journal of Home Economics is published twice a year. Papers for review will be accepted throughout the year to e-mail: editor@IFHEJournal.org.

Focus

The International Federation for Home Economics is the only worldwide organisation concerned with Home Economics and Consumer Studies. It was founded in 1908 to serve as a platform for international exchange within the field of Home Economics. IFHE is an International Non Governmental Organisation (INGO), having consultative status with the United Nations (ECOSOC, FAO, UNESCO, UNICEF) and with the Council of Europe.

This refereed journal brings together emergent and breaking work on all aspects of Home Economics, and most importantly, how we might improve and renew the everyday work of Home Economists. It features quantitative and qualitative, disciplinary and trans-disciplinary, empirical and theoretical work and will include special editions on key developments. It aims to push the boundaries of theory and research—to seek out new paradigms, models and ways of framing Home Economics.

Contributors

The International Journal of Home Economics welcomes contributions from members and non-members, from a variety of disciplinary and theoretical perspectives.

Author's biography

Please provide a brief (less than 100 words) paragraph for each author, including current role or memberships and an E-mail address for correspondence. For example:

Professor Donna Pendergast, PhD is Dean of the School of Education and Professional Studies at Griffith University, Brisbane, Australia. Donna researches and writes about Home Economics philosophy, education and practice. Donna recently completed her 4 year term as Vice president of the Pacific Region and member of the IFHE Executive. She continues to serve the profession as Chairperson of the IFHE Think Tank Committee and Editor of the International Journal of Home Economics. She has served as National President of the Home Economics Institute of Australia, and President of the Queensland division.

Manuscripts

Manuscripts should be sent electronically to Professor Donna Pendergast, School of Education by e-mail at d.pendergast@griffith.edu.au. Please send files as a Microsoft Word document (doc, docx) or in Rich Text Format (rtf). Paper length should not exceed 6000 words. Each document should be double-spaced, with generous margins.

A standard coversheet must be submitted with all manuscripts. It is available from the IFHE website. Papers submitted without coversheets will be returned to authors. A separate first page should include the full title, a short title for use as a running head. The title should not exceed 10 words (50 characters), and should be followed by an abstract of 100-200 words and up to five keywords. Material which requires substantial editing will be returned to the author.

No footnotes or endnotes are permitted, only references. Please avoid using italics and bold. Spellcheck using UK English. All pages should be numbered. Contributors should be aware that they are addressing an international audience. Jargon should be avoided and local terminology clarified for an international audience. Authors should use non-discriminatory language. Measurements should be in metric units. Articles should be original work and where appropriate, should acknowledge any significant contribution by others.

Authors who want to refine the use of English in their manuscripts might consider utilising the services of SPi, a non-affiliated company that offers Professional Editing Services to authors of journal articles in the areas of science, technology, medicine or the social sciences. SPi specialises in editing and correcting English-language manuscripts written by authors with a primary language other than English. Visit www.prof-editing.com for more information about SPi's Professional Editing Services, pricing, and turn-around times, or to obtain a free quote or submit a manuscript for language polishing.

Please be aware that IFHE has no affiliation with SPi and makes no endorsement of the company. An author's use of SPi's services in no way guarantees that his or her submission will ultimately be accepted. Any arrangement an author enters into will be exclusively between the author and SPi, and any costs incurred are the sole responsibility of the author.

Tables, figures and illustrations

Figures, diagrams and images must be cited in text and captions provided. Figures should be at a professional standard and supplied as separate electronic files (e.g., TIF, JPG, GIF). Tables must be cited in text and captions provided. **Include all tables, figures and illustrations in the correct location in the manuscript.**

References

References should follow the American Psychological Association system (APA Publications Manual, 5th Edition).

The details required for books are:

Names of authors or editors (year of publication). Title of publication. Place of Publication: Publishers, for example:

Pendergast, D. (2001). *Virginal mothers, groovy chicks & blokey blokes: Re-thinking Home Economics (and) teaching bodies*. Sydney: Australian Academic Press

The details required for journals are:

Names of authors or editors (year of publication). Title of article. Title of journal, volume (issue), page numbers, for example:

McGregor, S. L. T. (2007a). Consumer scholarship and transdisciplinarity. *International Journal of Consumer Studies*, 31(5), 487-495.

Copyright

Manuscripts submitted for publication must not have been previously submitted or published. Accepted papers become the permanent property of IJHE. By submitting a manuscript, the author(s) agree that copyright for their articles are automatically transferred to the IJHE, if and when articles are accepted for publication. The copyright gives IJHE the exclusive rights to reproduce and distribute the article.

Proofs

Proofs will be sent electronically to the corresponding author for return within 72 hours. It is the author's responsibility to ensure the accuracy of these proofs. Correction other than printing errors should be kept to a bare minimum.

IJHE