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CLOTHING NEEDS, FABRIC PREFERENCES, AND DESIGN FEATURES FOR COMFORTABLE AND FUNCTIONAL APPAREL FOR ELDERLY WOMEN IN ORUMBA SOUTH LGA, ANAMBRA STATE, NIGERIA

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ABSTRACT

This study investigated the clothing needs, fabric preferences, and design features for developing comfortable and functional apparel for elderly women in Orumba South LGA, Anambra State, Nigeria, as part of a larger Research and Development project. The survey design involved 590 participants: 370 elderly women, 20 Clothing and Textiles lecturers, and 200 garment constructors. Instruments included the Comfortable Clothing Needs Assessment Questionnaire and Observation Checklist. Reliability Cronbach's Alpha coefficients were 0.772 and 0.694 (the latter acknowledged as acceptable for exploratory research). Data were analyzed using mean and standard deviation. Findings revealed elderly women experience challenges with mobility, dressing ease, and thermal comfort. Key activities influencing clothing needs included walking to community gatherings (mean=3.72), attending church meetings (mean=3.70), and sitting for long periods (mean=3.65). Preferred clothing types were loose-fitting boubou with front zip (mean=3.78), kaftan gown with side pockets (mean=3.70), and two-piece wrapper with Velcro fasteners (mean=3.66). Essential fabric characteristics included softness (mean=3.78), breathability (mean=3.82), lightweight properties (mean=3.71), and local affordability (mean=3.80). Critical design features included front openings (mean=3.80), loose-fitting designs (mean=3.82), Velcro fasteners (mean=3.77), and wider armholes (mean=3.76). The study concludes that elderly women's clothing must prioritize comfort, ease of dressing, and cultural appropriateness. Recommendations include integrating geriatric clothing design into Home Economics curricula and encouraging local garment producers to adopt user-centered design approaches.

Keywords: Elderly women, clothing needs, fabric characteristics, design features, functional clothing, Orumba South LGA, Nigeria

Introduction

The terms "elderly" and "aging" women refer to women who have attained an advanced stage of life, typically defined in numerical terms as those aged 60 years and above, although this threshold varies across cultural and institutional settings (World Health Organization [WHO], 2002). As Sonye and Boyo (2020) stated, elderly individuals include those who may have retired or remain actively engaged in careers outside the home, volunteer work, social activities (predominantly church-related functions), and other economic pursuits. These activities significantly influence the clothing needs of aging women. The WHO (2020) further described elderly individuals as those aged 60 years and above in most developing countries, where life expectancy tends to be lower than in developed nations. Similarly, the National Population Commission (NPC, 2019) categorizes elderly Nigerians as those aged 60 years and above, aligning with national retirement age policies. In traditional African societies, including Nigeria, the elderly woman is revered for her wisdom, social contributions, and maternal status. However, despite the respect accorded to them, elderly women often confront physical, economic, psychological, and social challenges, particularly concerning their health, lifestyle, and daily dressing routines. Ajala (2022) described elderly women as those approaching or having reached the post-menopausal phase of life, characterized by biological transitions such as declining estrogen levels, reduced bone density, and increased vulnerability to chronic illnesses.

Aging is a universal biological process that occurs in all living organisms, leading to gradual changes in physiological, psychological, and social functions. Although aging is a natural phenomenon, its definition and interpretation vary across disciplines and cultural contexts (Birren & Cunningham, 2015). WHO (2020) defined aging as "a gradual process of physiological decline in function that occurs with increasing chronological age, often associated with biological, social, and psychological changes." Kowal and Dowd (2015) described it as "a multidimensional process of physical deterioration and cognitive transformation that affects an individual's ability to adapt to daily activities." Aging is not merely a function of time but is influenced by genetics, lifestyle, environment, and socio-economic factors. Hooyman and Kiyak (2015) classified aging into three major dimensions: biological aging, psychological aging, and social aging. Biological aging refers to the physical changes occurring over time, such as declining sensory abilities, loss of muscle mass, reduced bone density, and decreased skin elasticity. These changes influence an individual's mobility, strength, and ability to perform everyday tasks, including dressing. Psychological aging involves cognitive and emotional changes that impact an individual's perception of self, memory, and adaptability to change (Cavanaugh & Blanchard-Fields, 2015). Social aging refers to the evolving roles, responsibilities, and expectations that society places on individuals as they grow older. In many African societies, including Nigeria and particularly in Anambra State, elderly individuals are expected to play advisory and caregiving roles within the family and community (Aboderin, 2015). While aging is inevitable, its experience differs between individuals, particularly between men and women. Walker and Maltby (2012) noted that women experience aging differently due to biological factors such as menopause, hormonal changes, and differences in life expectancy. According to the National Population Commission (NPC, 2019), the average life expectancy for Nigerian women is 56 years, which is slightly higher than that of men. However, because women often live longer, they experience prolonged exposure to age-related physiological and social challenges. This has implications for their clothing choices, as elderly women must prioritize comfort, functionality, and ease of wear over mere aesthetics.

Despite their declining physical strength, elderly women in Nigeria remain active in many spheres of life. They continue to engage in community development, religious leadership, family caretaking, and in some cases, economic activities such as farming, trading, or entrepreneurship. According to Okoye and Asa (2015), elderly Nigerian women contribute significantly to the

informal economy, particularly in rural and semi-urban areas, making them a socially and economically relevant population group. However, their day-to-day comfort is often compromised by clothing that does not reflect their current physical abilities. Most available clothing in the market is designed for the general adult population and is not adapted for the physical realities of aging women. As Tyagi and Alka (2015) noted, elderly individuals have unique clothing needs that are often overlooked by mainstream fashion industries. These needs include clothing that accommodates arthritic joints, poor eyesight, limited hand dexterity, and general bodily discomfort. Buttons, tight waistbands, and stiff materials often pose challenges, making daily dressing an unpleasant task due to aging-related limitations. The clothing needs of elderly women are shaped by a complex interplay of physiological, psychological, social, and cultural factors that evolve with age. As women advance in age, they undergo various physical and emotional changes that affect how they perceive, select, and utilize clothing. These needs extend beyond aesthetics and fashion they are deeply connected to comfort, dignity, functionality, safety, health, and social identity (Gilleard & Higgs, 2015).

In Nigeria, where traditional clothing forms an integral part of the elderly woman's identity, cultural sensitivity must be considered when developing clothing for this population. Traditional attire such as kaftans, wrappers, and headscarves are commonly worn by elderly women, offering comfort, modesty, and ease of movement. However, there is potential to incorporate modern design elements into these garments to enhance comfort without compromising cultural significance. Using softer, more breathable variants of fabrics or incorporating natural materials like cotton and bamboo can ensure that clothing is both comfortable and functional (Jones & Chadwick, 2017). Furthermore, since many elderly women in Nigeria live in multigenerational households or engage in community activities such as church services, clothing designs must be versatile enough for both indoor and outdoor settings, allowing elderly women to feel comfortable and dignified in any environment. The World Health Organization (WHO, 2020) projects that by 2050, the global population aged 60 years and older will reach approximately 2 billion, with most of this increase occurring in developing countries such as Nigeria. This demographic transition underscores the urgent need for research into age-appropriate clothing solutions that address both functional and cultural requirements.

Statement of the Problem

The process of aging is accompanied by a variety of physiological changes that significantly affect elderly women, particularly regarding their clothing needs. These changes include decreased mobility, muscle weakness, joint pain, and alterations in body shape, which make wearing conventional clothing increasingly uncomfortable and impractical. Furthermore, chronic health conditions such as arthritis, diabetes, hypertension, and osteoporosis are common among elderly women, exacerbating the discomfort caused by ill-fitting or inappropriate clothing (Franks & Rhee, 2019). In Nigeria, as in many other parts of the world, elderly women often struggle to find clothing that is both comfortable and functional, addressing their physical limitations while respecting cultural and traditional norms. Elderly women in Nigeria, particularly those residing in rural areas such as Orumba South LGA in Anambra State, face additional challenges when it comes to clothing. Despite growing global awareness of the need for specialized clothing for older adults (Chen & Reddivari, 2019; Twigg, 2013), a significant gap remains in the availability of clothing that addresses the specific needs of elderly women in many African communities.

Elderly women in Nigeria are often deeply influenced by cultural values and preferences that may conflict with contemporary clothing trends. The lack of clothing designs that consider both functionality and cultural appropriateness means that elderly women are forced to choose between comfort and maintaining their cultural identity (Akinwumi, 2018). In the same vein, the

elderly often find it difficult to access or afford clothing specifically made for their needs, resulting in reliance on poorly fitting or uncomfortable garments. The lack of comfortable and functional clothing options for elderly women presents a serious challenge to their dignity and quality of life, as many elderly women in Orumba South LGA continue to struggle with clothing that does not accommodate their physical limitations or reflect their cultural preferences.

Research Gap

Despite growing global awareness of adaptive clothing for aging populations, four critical gaps remain in the Nigerian context. First, no empirical study has documented the specific clothing needs of elderly women in rural Anambra State using a systematic, mixed-methods approach. Existing Nigerian research has focused predominantly on urban elderly populations (Boyo & Sonye, 2014 in Port Harcourt; Afolabi & Oyewole, 2018 in Oyo State), leaving rural communities such as Orumba South LGA unexamined. Second, while international research has established comprehensive design frameworks for geriatric clothing including Watkins and Dunne's (2015) functional design principles and McCann and Bryson's (2009) work on adaptive apparel—these frameworks have not been validated against Nigerian cultural dress norms or the specific climatic conditions of southeastern Nigeria. Third, no published Nigerian study has systematically measured the fabric preferences and design feature requirements of elderly women using standardized assessment instruments specifically developed for this demographic. Fourth, existing literature has not adequately addressed the intersection of three critical factors: age-related physiological changes, tropical climate considerations, and Igbo cultural dress expectations. This study addresses these gaps by providing empirical data specific to Orumba South LGA, Anambra State, thereby contributing to both the Nigerian and international literature on geriatric clothing design.

Purpose of the Study

Flowing from the identified gaps, the purpose of this phase of the study was to conduct a needs assessment to inform the development of comfortable and functional clothing for elderly women in Orumba South Local Government Area, Anambra State. Specifically, the study sought to:

1. Determine the activities that influence the clothing needs of elderly women in Orumba South Local Government Area, Anambra State
2. Determine the clothing types preferred by the elderly women in Orumba South Local Government Area, Anambra State
3. Determine the characteristics of fabrics needed for the development of clothing for elderly women in Orumba South Local Government Area, Anambra State
4. Determine the design features needed for the development of comfortable and functional clothing for elderly women in Orumba South Local Government Area, Anambra State

Research Questions

The following research questions guided this study:

1. What are the activities that influence the clothing needs of elderly women in Orumba South Local Government Area, Anambra State?
2. What are the clothing types preferred by the elderly women in Orumba South Local Government Area, Anambra State?
3. What are the characteristics of fabrics needed for the development of clothing for elderly women in Orumba South Local Government Area, Anambra State?
4. What are the design features needed for the development of comfortable and functional clothing for elderly women in Orumba South Local Government Area, Anambra State?

Hypotheses

The following null hypotheses, drawn from the prototype evaluation phase of the larger R&D study, were tested at 0.05 level of significance:

H_{01}: There is no significant difference in the mean responses of users and judges on the fit of the comfortable and functional clothing prototypes.

H_{02}: There is no significant difference in the mean responses of users and judges on the comfort of the clothing prototypes.

Methodology

Research Design

The design adopted for this phase of the study was a survey design. The survey design was suitable because it allowed the researcher to gather relevant information from elderly women on their clothing needs, preferences, and challenges through structured questionnaires. It was used to conduct the needs assessment for Research Questions 1, 2, 3, and 4. (The larger study from which this paper is drawn employed a Research and Development [R&D] design, which included prototype development and evaluation, the results of which are reflected in the hypotheses testing section).

Area of the Study

The study was conducted in Orumba South Local Government Area (LGA), which is located in Anambra State, Nigeria. Orumba South LGA is a rural area characterized by a mixture of urban and semi-urban settlements. The LGA is made up of various towns and villages, with a predominantly Igbo-speaking population. The area is known for its rich cultural heritage and agricultural activities, with many of its residents involved in farming, trade, and artisan work.

Population of the Study

The population for this study comprised three distinct groups. The primary population consisted of elderly women aged 60 years and above residing in Orumba South LGA. Based on projections from the 2006 National Population Commission (NPC) census data, adjusted using an annual growth rate of 2.6%, the current estimated number of elderly women in Orumba South LGA is 5,320 (NPC, 2006; National Bureau of Statistics, 2022). This projection method was necessary as no more recent census data are available for Nigeria. The second population group consisted of evaluators who served as a panel of judges. This panel included twenty (20) Clothing and Textiles lecturers drawn from tertiary institutions in and around Anambra State, including Nnamdi Azikiwe University, Awka; Nwafor Orizu College of Education, Nsugbe; and Federal College of Education (Technical), Umunze. Additionally, two hundred (200) experienced garment constructors from Orumba South LGA were included. The total population for this study was therefore 5,540.

Sample and Sampling Technique

The sample for this study consisted of three main groups. From the total population of 5,320 elderly women, a sample size of 370 was determined using Emaikwu's (2018) statistical table for large populations. To select the sample, a multi-stage sampling technique was used. First, purposive sampling was employed to select three major and centrally located communities within Orumba South LGA: Umunze, Umuchu, and Ezira. Within each selected community, stratified random sampling was used to categorize the elderly women into three age groups: 60 to 69 years, 70 to 79 years, and 80 years and above. This resulted in the selection of 204 women from the 60 to 69 age group, 111 women from the 70 to 79 age group, and 55 women from the 80 years and above category. The second group in the study included Clothing and Textiles lecturers and garment constructors who served as expert judges. Since the number of lecturers and garment constructors was relatively small and manageable, the study used a census approach by including all of them (20 lecturers and 200 garment constructors). The total sample size was 590.

Instrument for Data Collection

Three sets of instruments were used for data collection in this study. The Comfortable Clothing Needs Assessment Questionnaire (CCNAQ) was developed by the researcher to elicit information on the clothing needs and preferences of elderly women. The questionnaire was structured in sections. Section A gathered data on activities influencing clothing needs. Section B focused on clothing types preferred. Section C addressed fabric characteristics, and Section D covered design features. A four-point Likert scale (Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1) was employed. The Observation Checklist (OCL) was used to document the daily living activities of the elderly women that influence their clothing preferences. For the prototype evaluation phase (from which the hypotheses were drawn), the Clothing Fit Assessment Questionnaire for Users (CFAQ-U) and Judges (CFAQ-J) were also used.

Validity of the Instruments

The instruments underwent face and content validation. The validation exercise involved two clothing experts from Ignatius Ajuru University of Education Port-Harcourt and Nnamdi Azikiwe University, Awka, and a research methods expert from the Department of Educational Foundations at Ignatius Ajuru University of Education Port-Harcourt.

Reliability of the Instruments

To establish the reliability of the data collection instruments, a pilot study was conducted in Enugu State, which shares similar socio-cultural and demographic characteristics with Orumba South LGA. Internal consistency for sections B and C of the CCNAQ using Cronbach's Alpha coefficients yielded 0.694 and 0.772 respectively. While the coefficient of 0.694 falls slightly below the conventional threshold of 0.70, it is acknowledged as marginally acceptable for exploratory research in a specialized context, particularly given the unique population under study and the challenges associated with data collection among elderly respondents.

Method of Data Administration and Collection

Data for this study was collected in phases. The researcher identified and selected a representative sample of elderly women in Orumba South LGA who were willing to participate. The CCNAQ was used to collect data on the clothing needs of the elderly women, their garment preferences, and opinions on aesthetics and functionality. The OCL aided in systematically documenting the daily activities of the respondents. Scheduled visits were made to communities where the respondents gathered, and questionnaires were administered in-person.

Method of Data Analysis

Data collected were analyzed using mean and standard deviation. A mean score of 2.50 or higher was interpreted as a satisfactory response (Agree), while scores below 2.50 indicated insufficient justification (Disagree). For the hypotheses (drawn from the prototype evaluation phase of the larger R&D study), an independent samples t-test was used. The decision rule was that if p-value ≤ 0.05, the null hypothesis was rejected; if p-value > 0.05, the null hypothesis was retained.

Results

Research Question 1: Activities Influencing Clothing Needs

Table 1: Mean Ratings and Standard Deviations of Users and Judges on Activities that Influence the Clothing Needs of Elderly Women in Orumba South LGA

S/N	Activities	Users Mean (n=370)	Users Std.	Judges Mean (n=220)	Judges Std.	Remark
1	Walking and movement to community gatherings or religious centers	3.72	0.43	3.80	0.41	Agree
2	Sitting for long periods during religious or social meetings	3.65	0.52	3.73	0.45	Agree
3	Performing light household chores (sweeping, washing small items, cooking)	3.58	0.60	3.66	0.54	Agree
4	Attending outdoor events such as markets, weddings, or burials	3.49	0.58	3.55	0.50	Agree
5	Visiting health centers or hospitals for medical care	3.61	0.47	3.70	0.44	Agree
6	Performing light exercises such as stretching or walking within compound	3.56	0.64	3.63	0.56	Agree
7	Engaging in caregiving or taking care of grandchildren	3.44	0.63	3.52	0.58	Agree
8	Participating in traditional or cultural ceremonies	3.48	0.59	3.50	0.51	Agree
9	Relaxing at home or resting during the day	3.68	0.49	3.74	0.46	Agree
10	Attending church, women's meetings, or cooperative gatherings	3.70	0.46	3.77	0.42	Agree
	Grand Mean/Std.	**3.59**	**0.54**	**3.66**	**0.49**	

Source: Field Survey (2026)

The results in Table 1 reveal that all listed activities had mean ratings above 3.00 for both users and judges, indicating a high level of agreement that these activities strongly influence the clothing needs of elderly women. Activities with the highest ratings included walking to community gatherings (mean = 3.72 for users; 3.80 for judges), attending church and women's meetings (mean = 3.70 for users; 3.77 for judges), and sitting for long periods (mean = 3.65 for users; 3.73 for judges). The grand mean for users (3.59) and judges (3.66) demonstrates strong consensus that elderly women's clothing must be designed with consideration for their daily functional activities, particularly those involving mobility, social participation, and prolonged sitting.

Research Question 2: Clothing Types Preferred

Table 2: Mean Ratings and Standard Deviations of Users and Judges on Clothing Types Preferred by Elderly Women in Orumba South LGA

S/N	Clothing Types Preferred	Users Mean (n=370)	Users Std.	Judges Mean (n=220)	Judges Std.	Remark
1	Loose-fitting boubou/gown with front zip for ease of wearing	3.78	0.42	3.84	0.36	Agree
2	Two-piece wrapper and blouse set with Velcro or button fasteners	3.66	0.50	3.72	0.46	Agree
3	Kaftan gown with side pockets and lightweight fabric	3.70	0.45	3.76	0.42	Agree
4	Elastic-waist skirt with soft, breathable cotton blouse	3.61	0.52	3.68	0.49	Agree
5	Wrap-around gown with adjustable shoulder straps	3.55	0.57	3.62	0.51	Agree
6	Short-sleeve blouse and long skirt combination	3.47	0.59	3.55	0.54	Agree
7	Traditional Ankara wrapper and headtie ensemble	3.43	0.60	3.51	0.58	Agree
8	Housecoat or simple lounge wear for relaxation	3.58	0.55	3.64	0.50	Agree
9	Lightweight cardigan or over-garment for warmth	3.49	0.58	3.56	0.54	Agree
10	Simple tunic top and trousers made from soft fabric	3.52	0.56	3.60	0.50	Agree
	Grand Mean/Std.	**3.58**	**0.53**	**3.65**	**0.49**	

Source: Field Survey (2026)

The data in Table 2 reveal that all clothing types received high mean ratings above 3.00, showing strong agreement that these clothing types are preferred by elderly women. The most highly rated among users was the loose-fitting boubou with front zip (mean = 3.78), followed by the kaftan gown with side pockets (mean = 3.70) and the two-piece wrapper and blouse set with Velcro fasteners (mean = 3.66). The grand mean of 3.58 for users and 3.65 for judges confirms a uniform preference for clothing that prioritizes comfort, ease of wearing, modesty, and breathability. These preferences reflect the need for garments that accommodate reduced mobility and dexterity while maintaining cultural appropriateness.

Research Question 3: Characteristics of Fabrics Needed

Table 3: Mean Ratings and Standard Deviations of Users and Judges on the Characteristics of Fabrics Needed for Developing Clothing for Elderly Women

S/N	Characteristics of Fabrics Needed	Users Mean (n=370)	Users Std.	Judges Mean (n=220)	Judges Std.	Remark
1	Fabrics should be soft and smooth to prevent skin irritation	3.78	0.44	3.86	0.35	Agree
2	Fabrics should be lightweight to enhance comfort and movement	3.71	0.46	3.83	0.39	Agree
3	Fabrics should be breathable and allow proper air circulation	3.82	0.40	3.90	0.32	Agree
4	Fabrics should be absorbent and suitable for warm climates	3.69	0.49	3.78	0.42	Agree
5	Fabrics should be durable and resist frequent washing or wear	3.65	0.51	3.73	0.46	Agree
6	Fabrics should dry quickly after washing	3.62	0.53	3.69	0.48	Agree
7	Fabrics should be wrinkle-resistant and easy to maintain	3.66	0.50	3.71	0.44	Agree
8	Fabrics should have a moderate stretch for flexibility	3.54	0.58	3.62	0.51	Agree
9	Fabrics should be colourfast and maintain appearance after washing	3.70	0.47	3.75	0.45	Agree
10	Fabrics should be locally available and affordable	3.80	0.43	3.84	0.37	Agree
	Grand Mean/Std.	**3.70**	**0.48**	**3.77**	**0.42**	**Agree**

Source: Field Survey (2026)

The results in Table 3 show that all items received mean ratings above 3.50, indicating strong agreement that these fabric characteristics are essential. The highest-rated characteristics were breathability (mean = 3.82 for users; 3.90 for judges), local availability and affordability (mean = 3.80 for users; 3.84 for judges), and softness to prevent skin irritation (mean = 3.78 for users; 3.86 for judges). The grand mean of 3.70 for users and 3.77 for judges reveals high consensus across both groups that the choice of fabric significantly influences the comfort, appearance, and usability of garments made for the elderly. These findings reflect the physiological realities of aging skin and the climatic conditions of southeastern Nigeria.

Research Question 4: Design Features Needed

Table 4: Mean Ratings and Standard Deviations of Users and Judges on the Design Features Needed for Developing Clothing for Elderly Women

S/N	Design Features Needed	Users Mean (n=370)	Users Std.	Judges Mean (n=220)	Judges Std.	Remark
1	Clothing should have front openings for easy wearing and removal	3.80	0.42	3.88	0.34	Agree
2	Use of Velcro, large buttons, or zippers instead of small fasteners	3.77	0.45	3.84	0.38	Agree
3	Clothing should have adjustable waistbands or side ties for fit flexibility	3.69	0.49	3.74	0.45	Agree
4	Loose-fitting designs should be preferred for comfort and ventilation	3.82	0.41	3.90	0.33	Agree
5	Garments should include wider armholes and necklines for mobility	3.76	0.46	3.81	0.39	Agree
6	Clothing should have flat seams to avoid skin irritation	3.68	0.50	3.73	0.44	Agree
7	Clothing should include inner linings to reduce transparency and enhance comfort	3.61	0.53	3.66	0.48	Agree
8	Use of simple silhouettes that reduce dressing complexity	3.74	0.47	3.80	0.41	Agree
9	Garments should have moderate lengths to prevent tripping	3.70	0.48	3.78	0.43	Agree
10	Pockets should be easily accessible and securely positioned	3.67	0.52	3.73	0.46	Agree
	Grand Mean/Std.	**3.72**	**0.47**	**3.78**	**0.41**	**Agree**

Source: Field Survey (2026)

The data in Table 4 reveal that all design features received mean ratings above 2.50, with grand mean ratings of 3.72 for users and 3.78 for judges, showing strong consensus on the importance of incorporating functional and adaptive design elements. The most highly rated features were loose-fitting designs (mean = 3.82 for users; 3.90 for judges) and front openings for easy wearing and removal (mean = 3.80 for users; 3.88 for judges). These findings suggest that elderly women prefer clothing that minimizes physical effort during dressing and allows better air circulation—features that directly address age-related mobility limitations and comfort needs. The strong agreement on the use of Velcro or large fasteners (mean = 3.77 for users; 3.84 for judges) is critical for accommodating declining hand dexterity often associated with arthritis.

Hypothesis Testing

Table 5: t-test Analysis on the Fit of Comfortable and Functional Clothing Prototypes

Respondents	N	Mean	SD	t-cal	t-crit	p-value	Decision
Users	370	3.82	0.64	1.47	1.96	0.142	Not Significant
Judges	20	3.65	0.71				

Source: Field Survey (2026)

Table 5 reveals that users had a mean rating of 3.82 while judges had a mean rating of 3.65 on the fit of the clothing prototypes produced from the needs assessment. The computed t-value (1.47) is less than the critical value (1.96) at the 0.05 level of significance, with a p-value of 0.142 > 0.05.

This implies that there is no significant difference between the users' and judges' mean responses regarding the fit of the comfortable and functional clothing. Both groups agreed that the clothing provided appropriate fit, neither too tight nor too loose, ensuring ease of dressing and movement for elderly women.

Table 6: t-test Analysis on the Comfort of Clothing Prototypes

Respondents	N	Mean	SD	t-cal	t-crit	p-value	Decision
Users	370	4.06	0.58	0.83	1.96	0.408	Not Significant
Judges	20	3.94	0.63				

Source: Field Survey (2026)

Table 6 shows a mean score of 4.06 for users and 3.94 for judges on comfort. The calculated t-value of 0.83 is lower than the t-critical value (1.96) with $p = 0.408 > 0.05$, indicating no significant difference between both groups. This means that both users and judges perceived the clothing to be highly comfortable. The elderly women reported that the garments allowed free air circulation and did not cause body irritation, while the judges confirmed that the fabric selection and loose construction supported thermal comfort and wearability.

Discussion of Findings

The findings from Research Question 1 revealed that elderly women in Orumba South commonly experienced clothing problems related to their daily activities, including tight-fitting garments, difficulties in dressing, and discomfort during movement. Activities such as walking to community gatherings (mean = 3.72), attending church meetings (mean = 3.70), and sitting for long periods (mean = 3.65) received the highest ratings, indicating that clothing must accommodate both mobility and prolonged seated positions. These findings align strongly with Afolabi and Oyewole (2018), who observed that elderly women in Southwestern Nigeria often experience clothing discomfort due to improper fit and lack of easy-access features. Similarly, Okoro and Chukwuma (2020) reported that poor garment adaptability to body changes contributes significantly to dissatisfaction among Nigerian elderly women. The high ratings for activities involving social participation (church, community gatherings, women's meetings) underscore that clothing for elderly women must not only be functional but also culturally appropriate and presentable for public settings.

The findings from Table 2 revealed strong preference for loose-fitting, modest, comfortable, and easy-to-wear garments. The loose-fitting boubou with front zip (mean = 3.78) and kaftan gown with side pockets (mean = 3.70) were most highly preferred. These results agree with Sonye and Boyo (2020), who reported that elderly women prefer garments that are simple, breathable, and easy to put on or take off. The preference for front-opening garments supports Nwafor and Ezenwafor (2018), who emphasized that elderly women value front-opening garments because they minimize dependence on others for dressing. The continued preference for traditional styles such as the wrapper and blouse set (mean = 3.66) reflects the cultural importance of maintaining identity and modesty, even as functional adaptations like Velcro fasteners are incorporated.

The findings in Table 3 confirmed that soft, breathable, lightweight fabrics are essential for elderly women's comfort. Breathability (mean = 3.82) and softness to prevent skin irritation (mean = 3.78) received the highest ratings from users. These results are consistent with Eze and Umeh (2020), who reported that soft, breathable fabrics such as cotton and linen were most preferred because they prevent heat accumulation and skin irritation. The preference for locally available and affordable fabrics (mean = 3.80) supports Okeke and Nwosu (2021), who argued that accessibility and affordability are critical determinants of clothing choices among elderly women

in southeastern Nigeria. This finding is particularly significant given the economic constraints faced by many elderly women who are retirees or depend on family support.

The findings in Table 4 showed strong agreement on essential design features including front openings (mean = 3.80), loose-fitting designs (mean = 3.82), and Velcro or large fasteners (mean = 3.77). This finding supports Okafor and Nwoye (2020), who emphasized that front-opening designs reduce dependence on caregivers. The inclusion of flat seams and inner linings resonates with Onwuka and Ume (2016), who recommended that clothing for older adults feature smooth seams and soft linings that minimize friction against fragile, aging skin. The high rating for wider armholes and necklines (mean = 3.76) reflects the need to accommodate reduced shoulder flexibility and joint stiffness, while adjustable waistbands (mean = 3.69) address the body shape changes that accompany aging.

All hypotheses tests showed no significant differences ($p > 0.05$) between users and judges on fit and comfort. Users rated fit at 3.82 compared to judges' 3.65, and comfort at 4.06 compared to judges' 3.94. The lack of statistical significance indicates strong agreement between the end users (elderly women) and expert judges (lecturers and garment constructors) regarding the quality of the prototypes. Consistent with the conclusions of Ogunleye and Ajayi (2021) and Onwuka and Ume (2021), these findings underscore the value of participatory design processes that actively include feedback from older adults. The convergence of perspectives validates the user-centered approach taken in this study, demonstrating that garments developed based on thorough needs assessment can successfully meet both technical standards and user expectations.

Conclusion

Based on the findings of this study, it can be concluded that elderly women in Orumba South Local Government Area experience significant challenges related to comfort, mobility, and cultural expression in their clothing. The physiological changes associated with aging including reduced flexibility, muscle weakness, joint stiffness, and skin sensitivity necessitate garments that are easy to wear, comfortable, and modest. The study established that elderly women prefer garments made from soft, breathable fabrics such as cotton and linen, designed with simple fasteners like front zippers or Velcro, and elastic waistbands that allow ease of dressing. The high level of agreement between users and judges on the fit and comfort of the prototype garments confirms that the needs identified in this assessment were successfully translated into appropriate clothing designs. The study demonstrates that clothing for elderly women can successfully balance functionality, comfort, and cultural appropriateness when design decisions are grounded in empirical needs assessment.

Recommendations

Based on the findings, the following recommendations were made:

1. Clothing and Textiles educators should integrate adaptive and functional clothing design for the elderly into their teaching and research activities to build capacity for innovation in this area. This includes incorporating geriatric clothing design into Home Economics curricula at all levels.
2. Fashion designers and garment producers should consider the physiological and cultural needs of elderly women when designing clothing, prioritizing features like front openings, elastic waists, soft breathable fabrics, and easy-to-manipulate fasteners such as Velcro or large buttons.
3. Government and non-governmental organizations should promote local production of comfortable clothing for elderly persons through training programs, funding initiatives, and community-based empowerment programs that support local garment constructors.
4. Home Economics departments should collaborate with healthcare providers to develop awareness programs on the importance of appropriate clothing in elderly comfort, well-being, and independence, particularly for those with chronic health conditions.

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