

Functional Apparels Design Features for Lactating Mothers in Nigeria

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Abstract

The study determined functional apparels features for lactating mothers. Three specific purposes and three null hypotheses were formulated. The population of this study was 1475 lactating mothers between the ages of 18-34, nurses, Home economics extension workers and registered fashion designers. Multi-stage and simple random sampling techniques were used to select 288 respondents for the study. Functional Apparel Needs Assessment Questionnaire for Lactating Mothers (FANAQLM) was used for data collection. Reliability index of instrument was 0.85. ANOVA was used to test hypotheses at 0.05 level of probability. The following findings were made: Fifteen (15) various activities involved in lactation, Twelve (12) apparels needs of lactating mothers and five (5) aesthetic design features preferred by lactating mothers. Recommendations include; creating awareness for lactating mother in post-natal clinics, calling out to pattern/apparel designers to produce patterns/apparels that can take care of the needs and activities of lactating mothers. Designers can use the findings of this study when developing apparels for lactating mothers.

Keywords: Functional, Apparels, Design, Features, Lactating, Mothers

Introduction

Lactation is the breastfeeding of the baby directly from the mother's breast. It is a biological activity that can only

be assumed by the female folks. Breastfeeding is very important for both mothers and babies.

According to WHO (2012) exclusive breastfeeding (EBF) means giving breast milk alone with no water or other substitutes to babies for a period of six months. In line with this, UNICEF (2010) defines exclusive breastfeeding as giving baby breast milk only and nothing else, not even sips of water except for medicines prescribed by the doctor or nurse for the first six months of life.

Exclusive breastfeeding is encouraged and recommended to all mothers worldwide with efforts being made both in the private and public sector as a way of achieving the Millennium Development Goal (MDG) on improving maternal health. These efforts are also directed at reducing infant morbidity and mortality related to mixed-feeding as breast milk is very vital for the newly born babies.

A research done by Johns Hopkins Bloomberg school of public health under the School of Public Health at the University of Zimbabwe in 2005 states that exclusive breastfeeding reduces the risk of diarrhea, respiratory tract infections and allergies three times as compared to mixed feeding, (Humphrey, 2005).

World Health Organization (2006), United Nations International Children's Fund (UNICEF) and World Health Organization (WHO) began an international campaign called Baby Friendly Hospital Initiative to promote,

protect and support breastfeeding. This is made mandatory for all lactating mothers, except those with ill-health. This therefore has prompted the need for the development of functional apparels to enhance lactating mothers' modesty, comfort and security during breastfeeding.

Functional apparel represents the evolutionary segment of the technical textiles market, representing an area where clothing crosses the conventional boundaries and integrates with the domains of medicine, biotechnology, nanotechnology, physics and computing among others, to meet the multifaceted and complex requirements of the user. Functional apparel by definition is user-requirement specific and designed or engineered to meet the performance requirements of the user under extreme conditions. A variety of functional apparel products are available in the market as protective clothing, medical clothing or sports clothing, even though little or no information is available regarding the production of functional apparel for lactating mothers (Deepti, 2016).

Functional apparels for lactating mothers are such clothing items that are designed and constructed to meet the functional expectation of lactation. Such clothing items are designed and constructed with the consideration of the activities involvement and characteristics of the lactating mothers

in mind. These considerations give birth to apparels made with functional design features that aid easy lactation and modesty. Functional design features such as openings with closures are good examples for constructing functional apparels for lactating mothers.

Though functional apparels differ from other forms of clothing due to the fact that its primary focus is functionality, some writers hold that the aesthetic values should not be over reading. Such writers includes Dunne (2004) when she states that though functional apparels focus mainly on function, however, the functional approach does not disregard aesthetics or expression as these can also be considered user needs of functions of clothing. This is even truer of lactating mothers because of their characteristics which include the desire for fashionable aesthetic apparels.

As mentioned earlier functionality is the basic principles of developing and designing in apparels construction but it cannot be expressed to directly otherwise the apparels will not be beautiful and elegant. Skillful designs can augment functionality with aesthetic details. This is achieved by the application of esthetic features. Aesthetic features are purely beautifying items used in the construction of apparels. In functional lactating apparels, the aesthetic features

that forms the integral part of the garment include tucks, pleats, creases, motive and so on.

Brown and Rice (2001) states that an aesthetic feature of apparel enhance its acceptance by users; it also brings out the values and harmony of the apparels and add to its quality. Base on the literature clothing for special needs which lactating mothers is among, should utilize both functional and aesthetic feature in the production. In lactating apparels openings and closures should be suitably made with decorative items.

Deducing from the above explanation is it evidence that aesthetic criteria are central to consumer evaluation of apparels and lactating mothers are not an exception. Therefore based on this note there is a need for the study that will provide inside on how functional apparels could be developed for lactating mothers to meet both functional and aesthetic needs. This is the gap in scholarship that this current study seeks to fill. Therefore this study seeks to develop functional apparels to aid lactating mothers carry out their function of lactation discreetly to avoid exposure in Nigeria.

Purpose of the Study

The general purpose of this study was to determine the functional apparels

design features for lactating mothers. Specifically the study determined:

1. various activities involved in lactation/breast feeding.
2. functional apparel needs of lactating mothers.
3. aesthetic design features preferred by the lactating mothers.

Hypotheses

The following null hypotheses were formulated for the study and were tested at 0.05 level of probability:

There is no significant difference in the mean ratings of lactating mothers with small, medium and large bust on:

H₀₁ various activities involved in lactation

H₀₂ functional apparel needs of lactating mothers

H₀₃ aesthetics design features preference of lactating mothers

Methodology

Design of the Study

A survey design was adopted for the study.

Population of the Study: The population of this study was 1475 lactating mothers between the ages of 18-34, nurses, Home economics extension workers and registered fashion designers.

Sample and Sampling Techniques: Multi-stage and simple random sampling techniques were used to select 288 respondents for the study.

Instruments for Data Collection: Structured Questionnaire titled Functional Apparel Needs Assessment Questionnaire for Lactating Mothers (FANAQLM) was used for data collection.

Data Collection Techniques: Mean was used of 3.30 to answer the research question.

Data Analysis Techniques: Reliability of index instrument, was 0.85, ANOVA was used to test hypotheses at 0.05 level of probability.

Findings of the Study

Activities involved in Lactation/Breast Feeding

Table 1: Mean and Standard Deviation (SD) on various activities involved in lactation
N= 288

S/N	Activities involved in breast feeding	SD	\bar{X}	Remarks
1	Cleaning the nipple	3.88	.39	SA
2	Holding the baby in different positions to lactate	3.59	.79	SA
3	Calming the baby to settle before breast feeding	3.79	.53	SA
4	Supporting the breast for the baby to suck	3.90	.31	SA
5	Breastfeeding the baby	3.84	.42	SA
6	Caressing the baby to be awake to continue sucking			

if he or she is trying to sleep-off	3.56	.69	SA
7. Expressing breast milk for the baby	3.77	.46	SA
8. Cuddling the baby after lactation to keep warm	3.84	.39	SA
9. Changing the baby's pampers if wet or dirty	3.92	.29	SA
10. Backing the baby to be able to do other house tasks	3.89	.38	SA
11. Settling the baby in the bed/pram	3.82	.43	SA
12. Playing with the baby to show love during lactating	3.95	.22	SA
13. Bathing the baby	3.90	.29	SA
14. Washing the baby's clothes	3.96	.19	SA
15. Winding/burping the baby to remove air after lactation	3.85	.43	SA
Cluster Mean	3.83	.19	SA

Table 1 indicates that the various activities involved in lactation all had mean ratings of 3.88, 3.59, 3.79, 3.90, 3.84, 3.56, 3.77, 3.84, 3.92, 3.89, 3.82, 3.95, 3.90, 3.96 and 3.85 for item 1-15 respectively. The clusters mean rating of 3.83. Each mean is greater than

2.50(> 2.50). This shows that 15 activities are carried out in lactation. Therefore, lactating mothers engage in various operations/activities in lactation.

Table 2: ANOVA on significant difference in the mean rating of lactating mothers with small, medium and large bust on various activities involved in lactation
N= 288

Categorical Variables	No	\bar{X}	SD		Sum of Squares	Df	F	Sig	Decision
Small	97	3.82	.19	Between	.132	2	1.705	.185	NS
Medium	136	3.82	.21	groups					
Large	55	3.91	.13	Within	6.711	173			
				groups					
				Total	6.843	175			

No = number of respondents; SD = Standard Deviation Df = Degree of Freedom Sig = Significance Level

Table 2 shows that there is significant mean difference in the mean rating of lactating mothers with small, medium and large bust on various activities involved in lactation $F(2, 288) = 1.705$

$p < .185$. The null hypothesis was accepted indicating that there was no significant difference in the mean ratings of lactating mothers with small,

medium and large bust on various activities involved in lactation.

Functional Apparels' needs for Lactating mothers in Nigeria

Table 3: Mean (\bar{X}) and Standard Deviation (SD) on the functional apparels' needs for lactating mothers in Nigeria? N =288

Items	Sd	Rmhs	\bar{X}
1 Apparels with Special openings with closures	3.89	.31	SA
2 Apparels with proper means of coverage to enhance modesty	3.89	.31	SA
3 Apparels that fit well to aid lactation	3.81	.42	SA
4 Apparels that are fashionably made to meet mother's need for fashion	3.79	.42	SA
5 Apparels that are aesthetically made to win mother's acceptance	3.78	.46	SA
6 Apparels with functional features that are convenient to use	3.84	.37	SA
7 Apparels that are comfortable to the skin	3.75	.52	SA
8 Apparel designs that are flexible to manipulate with ease to avoid struggling during lactation	3.79	.46	SA
9 Apparel designs that can offer support to the heavy weight of the breast & body during lactation	3.89	.30	SA
10 Functional apparel with absorbing capacity to suck up leaking breast milk	3.86	.47	SA
11 Functional apparel with good workmanship and quality material to withstand frequent use and washing	3.86	.34	SA
12 Functional apparels made of stretchy materials to accommodate body and breast size changes	3.85	.38	SA
Cluster Mean	3.83	.22	SA

SA = Strongly Agree; A = Agree; UD = Undecided; D = Disagree; SD = Strongly Disagree.

Table 3 indicates that items on functional apparels' needs for lactating mothers in Nigeria all had mean ratings of 3.89, 3.89, 3.81, 3.79, 3.78, 3.84, 3.75, 3.79, 3.89, 3.86, 3.86 and 3.85 respectively. The cluster means rating

of 3.83. Each mean is greater than 2.50 (>2.50). This shows 12 functional apparel needs for lactating. Therefore, lactating mothers have 12 functional apparels' need.

Table 4: ANOVA on significant difference in the mean rating of lactating mothers with small, medium and large bust on functional apparel needs of lactating mothers N = 288

Categorical Variables	No	\bar{X}	SD		Sum of Squares	Df	F	Sig	Decision
Small	97	3.80	.23	Between groups	.317	2	3.503	.032	S
Medium	136	3.87	.18						
Large	55	3.75	.32						
				Within groups	7.822	173			
				Total	8.139	175			

No = number of respondents; SD = Standard Deviation Df = Degree of Freedom Sig = Significance Level

Table 4 shows that there is significant difference in the mean rating of lactating mothers with small, medium and large bust on functional apparels' needs of lactating mothers $F(2, 288) = 3.503$ $p > .032$. The null hypothesis was rejected indicating that there was

significant difference in the mean of lactating mothers with small, medium and large bust on functional apparels' needs of lactating mothers

Aesthetic Design Features Preferred by the Lactating Mothers in Nigeria

Table 5: Mean (\bar{X}) and Standard Deviation (SD) on aesthetic design features preferred by the lactating mothers in Nigeria

Aesthetic Design features	\bar{X}	Sig
1 Gathers / Frills / Pleats / Tucks	3.79	.49
2 Lace attachment / Ribbon / Bias	3.76	.54
3 Decorative motifs / Patches / Appliques	3.81	.46
4 Caftan with decorative pocket like closure	3.81	.42
5 Magyar with decorative diamond strip shape closure	3.84	.39

Table 5 indicates that aesthetic design features preferred by the lactating mothers in Nigeria all had mean rating of 3.79, 3.76, 3.81, 3.81 and 3.84 for items 1- 5 respectively. The cluster means rating of 3.72. Each mean is greater than 2.05, (>2.50). This shows

that the 5 items represent the aesthetic design features preferred by the lactating mothers in Nigeria. Therefore, all are aesthetic design features preferred by the lactating mothers in Nigeria.

Table 6: ANOVA on significant difference in the mean rating of lactating mothers with small, medium and large bust on aesthetics design feature preference

N = 288

Categorical Variables	No	\bar{X}	SD		Sum of Squares	Df	F	Sig	Decision
Small	97	3.67	.32	Between groups	.595	2	3.671	.027	S
Medium	136	3.77	.26						
Large	55	3.67	.28						
				Within groups	14.012	173			
				Total	14.607	175			

No = number of respondents; SD = Standard Deviation Df = Degree of Freedom Sig = Significance Level

Table 6 shows that there was no significant main difference in the mean rating of lactating mothers with small, medium and large bust on aesthetics design feature preference $F(2, 288) = 3.671$ $p > .027$. The null hypothesis was rejected indicating that there was significant difference in the mean of lactating mothers with small, medium and large bust on aesthetics design feature preference.

Discussion of Findings

In this study, activity assessments for lactating mothers were carried out. According to Watkins (1995), this involves an in-depth observation of the activity as it is being performed in the natural setting. The findings of this study in respect to what are the various operations or activities involved in lactation as evident from responses from the questionnaire showed that, the respondents agreed that the various

activities outlined in the questionnaire are operations involved in lactation. Also during the focus group discussions, the women outlined those operations as activities they engage in during the periods of lactation. Motherhood is a period in life that is characterized by so many activities which range from giving birth to a child, breast feeding the child and taking care of the child's overall needs. Below are some of the activities performed by lactating mothers that demand the needs for functional lactating apparel: cleaning the nipple, holding the baby at different positions to lactate, calming the baby to settle before breast feeding, supporting the breast for the baby to suck, breastfeeding the baby, caressing the baby to be awake to continue sucking if he or she is trying to sleep-off, expressing breast milk for the baby, cuddling the baby after lactation to

keep warm, changing the baby's pampers if wet or dirty, backing the baby to be able to do other house tasks, settling the baby in the bed/pram, playing with the baby to show love during lactating, bathing the baby, washing the baby's clothes and winding/burping the baby to remove air after lactation.

The findings of this study as regards to apparels needs' of lactating mothers from the responses from the questionnaire showed that the respondents agreed on the apparels' needs outlined in the study. Functional apparels' needs of lactating mothers basically revolves around coverage, fashion, style, comfort, convenience fit, flexibility, quality, support, easy access for lactation, absorbency, easy to wash, easy to mass production and of course affordability. The finding of the study is in agreement with the opinion of Smith (2009) who relates the Apparel Need of the lactating mothers and their sexual risk in Chicago.

The finding of the study showed that lactating mothers agreed on the 5 aesthetic design features preferences outlined in the study. The craving for beauty is another characteristic common among lactating mothers as identified in their dress codes. The element of aesthetics design may be seen as vividly replacing the existing societal patterns with new ones. Another aesthetic of clothing is

adornment. Personal decoration can be used to increase attractiveness, symbolizes status and identity or raise the individual's self-esteem. It is evident from researches that aesthetic criteria are central to consumers' evaluations of apparel. This research shows that the aesthetic attribute of styling is a significant criterion that lactating women use in evaluating the aesthetic of the apparels on their bodies. This finding is in line with the expressions of Suh (2010) and Rudd and Lennon (2001) about the needs for aesthetic features in functional apparels. Fiore et al (1996) states that aesthetics is the study of human response to the non-instrumental quality of the object or event, specifically, aesthetic addresses the activation internal processes, the object or event's multi-sensory characteristics, psychological and socio-cultural factors affecting the responses of the creator or appreciator of the object or event.

Hypothesis one stated that there is no significant difference in the mean rating of lactating mothers with small, medium and large bust on various activates in lactation. But this study finds that there is significant difference in the mean rating of lactating mothers with small, medium and large bust on various activates in lactation. This is in line with the natural observation that sizes should not have any significant difference in the activities which is

contrary to the study conducted by Katherine (2012) that shows no significant difference in the activities of lactating mothers in breast feeding practices among the young mothers in USA in relation to apparel they wear. Igbo and Iloeje (2012) noted that products or services may propose the need design model and need assessment of participants may lead to advancement of efficiencies. Similarly, a need assessment for functional clothing by bicycle patrol officers is used to guide the functional design process for improved bicycle patrol uniform (Ibrahim 2011) that shows that no significant difference in the activities of lactating mothers in breast feeding practices among the young mothers in USA in relation to appearance they wear.

Hypotheses two states that there is no significant different in mean rating of lactating mothers with small medium and large bust on functional apparels needs of lactating mothers. The study shows there was significant deference in small, medium and large bust on functional apparels needs of lactating mothers. Which contradict with the study conducted by Jacobs (2007) on adolescent soccer uniform needs and specific garment types of the soccer uniforms. Which states that satisfaction of needs has relationship with functions, this is why the study highlighted none significance

difference in the needs of the users. Also the study has significant relationship between the apparel needs of the young lactating mothers and their sexual risk in Chicago. This positive correlation was due to the fact that when lactating mothers during the function of breast feeding exposes their breast it attracts the opposite sex.

Conclusion

Lactating mothers are continuously loaded with the problematic of what to clothing. Many of them purchase large amounts of cloths both imported and locally made clothing which do not enhance modesty and easy lactation. As a result, some mothers resort in discontinued lactation earlier than it supposed to be. Worst still, mothers that manage to use those clothing items ended up exposing essential parts of the body while breastfeeding in public. This attitude may create societal problems hence the need for development of functional apparels for lactating mothers in Nigeria becomes most imperative. Furthermore, some of the lactating mothers seems to be carried away by fashion and would not want to compromise their fashion lifestyle. This trend seems to lead the mothers to abandonment of the culturally accepted clothing code of the state.

Recommendations

1. Creating awareness for lactating mother in post-natal clinics for pregnant women.
2. Creating awareness for expectant mother in ante-natal clinics.
3. Calling out to pattern/apparel designers to produce patterns/apparels that can take care of the needs and activities of lactating mothers.

References

- Katherine, N. M. (2012). Characteristic of breastfeeding practice among US mothers. *Family and Consumer Sciences Research Journal*, 28(2), 167-192.
- Rudd, N. A & Lennon, S. J. (2001). Body Image: Linking aesthetics and social psychology of appearance. *Clothing and Textiles Research Journal* 19(3), 120-133.
- Smith (2009). Relationship between the apparel need of the young lactating mothers and their sexual risk in Chicago. *Family and Consumer Sciences Research Journal* 28(2), 167-192.
- Suh, F.G. (2010). Clothing and physical impairment: Joint effects on person perception. *Home Economics Research*
- Harrison, A. & Thompson, K. (2001). Speed training: compression clothing. *Clothing and Textiles Research Journal*, 27.
- Ibrahim, I. (2011). Establishment of the relationship between the body measurements of school age girls in the ages of 7 - 14 years in Kano State for the development of basic garment patterns for use. *Clothing and Textiles Research Journal* 15 (4), 193-202.
- Igbo, C. A. & Iloeje, C. I. (2012). *The basics of dress pattern drafting*. Enugu: Inselberg
- Deepti Gupta (2016): Functional clothing- Definition and classification. Indian Institute of Technology Delhi. *Indian Journal of Fibre and Textile Research*, 36, 321-326.