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Impact of pharmaceutical packaging on consumer buying behaviour of otc drugs in port harcourt, Nigeria

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Abstract

This study investigates the role of pharmaceutical packaging on consumer buying behavior of over-the-counter (OTC) drugs in Port Harcourt. The research is based on consumers visiting community pharmacies within Port Harcourt. A well structured questionnaire using a 5-point Likert scale was designed and used for this study to obtain primary data from respondents. Section A of the questionnaire includes questions pertaining to respondents demographic data such as age, sex and educational qualification while Section B contains questions on packaging color, background image, packaging material, design of wrapper, and other innovations which are all pharmaceutical packaging dimensions (independent variable) and consumers buying behaviour (dependent variable). Due to changing consumers' lifestyle the interest in package as tool of sales promotion and stimulator of impulsive buying behavior is increasing. The result showed that pharmaceutical packaging has a great influence on consumer buying behavior. As such it can be concluded that packaging has an important role in marketing communications, especially at the point of sale and could be treated as one of the most important factors influencing consumer's purchase decision.

Keywords: Consumer behavior, pharmaceutical packaging

Introduction

Packaging is the technology of enclosing or protecting products for distribution, storage, sale and use. In the pharmaceutical parlance, it can be seen as the collection of different components (eg bottles, vials, closures, ampoules, caps, blisters etc) which surround the pharmaceutical product from the time of production until it is being used. Packaging requires so much attention in the production processes of pharmaceuticals as it plays an important role in sustaining the efficacy of manufactured pharmaceuticals. It is appealing to the end user when done well in an elegant manner and it also attracts criticism when done unethically. In today's health care industry, emphasis has shifted to effective and meaningful packaging hence pharmaceutical packaging is recognised as an integral part of the drug delivery system as well as an essential element of the marketing mix through which manufacturers can differentiate their products from those of their competitors ^[1]. Packaging plays a crucial role in the provision of life saving drugs, medical devices and nutritional supplements (nutraceuticals) to all nooks and crannies of the world in different acceptable dosage forms such as tablets, powders, suspensions, capsules, drops, pessaries etc. Elegant packaging of pharmaceuticals might appeal to the sensibilities of the end users and reinforce a positive buying behaviour. Besides, getting it wrong may have an economic implication for manufacturing firms.

There has been a paradigm shift from the traditional point of sales service to self service system globally. This together with the ever dynamic consumer lifestyle lend credence to the interest in packaging as a tool of sales promotion. Elegant packaging could also elicit impulsive buying. Packaging therefore performs an important role in marketing communications, especially at the point of sale and could be treated as one of the most important factors in influencing consumer's purchase decision ^[2].

Packaging could also stimulate impulse buying hence increase sales turnover and market share. Packaging attracts consumers' attention to particular brands hence enhances its image and influences consumers perceptions about product ^[3]. Packaging also imparts unique value to products ^[4, 5]. It works as a tool for differentiation ie. Helps the consumers to choose the product from wider range of similar products, stimulates consumers buying behaviour ^[6].

Drug appearance in terms of colour, form etc has played a key role in their expected or

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perceived therapeutic outcome right from the early days of medicine. Patients avowed belief in the efficacy of the treatment being taken and the trust they have in the physician contributes immensely to the observed therapeutic outcome. Among the manifest signs influencing this belief is the drug appearance (colour and form) and its packaging may have some influence in its efficacy of treatment [7]. Similarly, the very brand name of a drug will have differential therapeutic effects according to its consonance or its notoriety [8]. The primary function of packaging is to contain and protect the product from its point of production, distribution, storage and usage. Packaging however become part of marketing policy [2]. Different types of packaging materials are used in the pharmaceutical industry. The commonly used packaging materials include glasses, rubbers, metal containers and closures. There are many types of glasses that are employed in the packaging of pharmaceuticals. Glasses must not interact with the formulation component of the drugs. Its colour is determined by the drug to be packaged. Amber coloured glasses are used to shield ultraviolet radiation from enclosed or packaged drugs that are photo labile. Photo-degradation of photo labile drugs may occur when such drugs are packed in clear transparent glasses and will compromise the quality of the packaged medicament.

Metal containers are used solely in the packaging of medicinal products for non-parenteral administration. Closures are used for the purpose of covering drug containers after the filling process and they should be as inert as possible. They should not give rise to undesirable interactions with the drugs and should provide a complete seal from the environment. They may be tamper-proof to guard against adulteration and pilfering. Tamper proof closures could also serve as child-resistant measures to guard against accidental drug intoxication involving children. Pharmaceutical packaging is an important aspect of the pharmaceutical production process so much so that pharmaceutical industries spend millions of dollars globally on research and development in a bid to provide excellent packaging whose quality and physical elegance will impact on the aesthetic sensibilities of would be users to their economic advantage. Elegant packaging with excellent label attracts consumers and impacts positively their buying behavior. Besides other factors that may influence the consumer buying behavior, elegant packaging and decent labeling are crucial [9].

This lends credence to the importance of packaging as a quality control strategy that can be harnessed by pharmaceutical manufacturers not only to improve the acceptability of their products but also to improve business growth. The World Health Organization (WHO) also recognized the importance of pharmaceutical packaging hence came up with a unified guideline for pharmaceutical packaging which all regulatory agencies in the world use as a template for pharmaceutical production regulation in all countries of the world.

An overview of available literature shows that there is no agreement on the classification of the dimensions of packaging with respect to its impact on consumers purchasing decisions [5, 10, 11]. Some researchers such as Vila & Ampuero, 2007 [12]; Madden, Hewett & Roth, 2000 [13] focused on separate elements of packaging and their impact on consumer behaviour while others investigate impact of package and its elements on consumer's overall purchase decision. Butkeviciene *et al*, 2008 [11] focused their research on every stage of consumers decision making process.

Models Of Buyer Decision Making

There are three models of analyzing consumer buying decisions.

- Economic Models- This is based on the assumptions of rationality and near perfect knowledge about the product. It is quantitative and the consumer is construed to maximize their utility.
- Psychological Models- This involves some psychological and cognitive processes such as motivation and need recognition. They are qualitative and built on sociological factors such as cultural influences and family values.
- Consumer Behaviour Models- This is the practical model used by marketers and involves the blending of both economic and psychological models.

The buying decision process is the decision making process used by consumers regarding market transactions before, during and after the purchase of goods or services. It can be based on a rational cost benefit analysis in the presence of multiple alternatives.

Stages of the consumer buying process has been identified as follows:

- Problem/Need Recognition – The consumer recognises what the problems/needs are and identifies what product or product type that is appropriate in satisfying the identified need(s).
- Information search - the consumer searches for the product which he rationally thinks would satisfy the recognised needs.
- Evaluation of Alternatives - information search reveals multiple products and the consumer evaluates the available alternatives to understand and identify which products would be most appropriate.
- Purchase Decision: After due evaluation of the alternatives, an intention to buy a given product is established. However, this is subject to two variables – the decision of the consumer if buying the product could be influenced his peers impression of the product and other unforeseen circumstances such as financial limitations etc.
- Post Purchase Behaviour – A post purchase dissonance feeling could be felt by the consumer after buying a product making him feel that buying another product would have been better. Addressing post purchase dissonance feelings create goodwill for the product and also increases prospect of frequent repurchase of the product [14].

These five stages merely forms a framework to evaluate customers buying decision process. It is however, not imperative that consumers get through every stage, nor is it necessary that they proceed in any particular order. For instance if a consumer wishes to buy acetaminophen, he/she might go straight to the purchase decision stage, skipping information search and evaluation stages.

Justification of the Study

Despite the abundance of literature on the impact of packaging on consumer buying decisions, none has actually focused on pharmaceutical packaging of OTC drugs with respect to consumer buying behaviour in Port Harcourt Nigeria. It is this gap in knowledge that this research is intended to address.

Significance of the Study

Since packaging has been recognised as an important part of

marketing policy ^[2], this study will enable pharmaceutical manufacturing companies understand the impact that various packaging dimensions considered in this research will have on consumers buying decisions.

Objectives of The Study

- To assess the influence of pharmaceutical packaging design on product identification and differentiation
- To determine the extent pharmaceutical packaging design influences consumers brand loyalty
- To determine the extent pharmaceutical packaging design strengthens consumers’ confidence in product quality and corporate image of the manufacturing company.

Hypotheses

Ho 1: There is no significant relationship between pharmaceutical packaging design and consumer’s product identification and differentiation

Ho 2: There is no significant relationship between pharmaceutical packaging design and consumers brand loyalty

Ho 3: There is no significant relationship between pharmaceutical packaging design and consumers’ confidence in product quality and corporate image of the manufacturing company

Methods

Study design: A descriptive research design in form of a survey questionnaire was adopted.

Study instrument: A well structured questionnaire using a 5-point Likert scale was designed and used for this study to obtain primary data from respondents. Section A of the questionnaire includes questions pertaining to respondents demographic data such as age, sex and educational qualification while Section B contains questions related to pharmaceutical packaging (independent variable) and

consumers buying behaviour (dependent variable).

A total of 160 questionnaires were distributed to respondents who are the target and accessible population.

Sampling technique: A purposive sampling technique was used to select six major retail community pharmaceutical outlets while the questionnaires were distributed randomly to respondents.

Selection criteria: Respondents were selected based on their willingness to participate in the study and being adults who are literate enough to understand the content of the questionnaire.

Results

Out of the one hundred and sixty questionnaires that were distributed, one hundred and fifty was successfully completed, returned and used for study thus having a retrieval rate of 93.75%. The independent variable, Pharmaceutical packaging was evaluated from the perspectives of packaging colour, design of wrapper and also innovative packaging while the dependent variable, consumers buying behaviour was evaluated using (a) Product identification and differentiation by consumers (b) Consumers confidence in product quality (c) Consumers perception of the corporate image of the manufacturer and (d) Consumers brand loyalty.

Table 1 shows results for respondents’ views on the level of influence; pharmaceutical packaging design has on consumers buying behaviour in relation to product identification and differentiation. 39.3% of the respondents strongly agree, while 50% only agree to the fact that the colour and design of wrapper of a pharmaceutical brand packaging would serve as a trade mark for identifying and differentiating a pharmaceutical product. Others vary in their disagreement to the fact

For item 2, up to 68.6% of the respondents accepted the fact that pharmaceutical packaging colour matters in the choice of brands of product to purchase.

Table 1: Responses on extent to which Pharmaceutical Packaging influence Product identification and differentiation

S/N	ITEMS	Strongly disagree (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	Total no. of Respondents
1	The colour and design of wrapper of a pharmaceutical brand packaging would serve as a trade mark for identifying and differentiating a pharmaceutical product	10 (6.7)	6 (4.0)	75 (50.0)	59 (39.3)	150
2	The pharmaceutical packaging colour matters in making a choice of pharmaceutical brand product to purchase	29 (19.3)	18 (12.0)	86 (57.3)	17 (11.3)	150

Table 2 shows results for respondents’ views on the level of influence, pharmaceutical packaging design has on consumers buying behaviour in relation to consumers brand loyalty.

For item 3, those that strongly agree as well as agree to the fact that ‘the wrapper design pattern and packaging material colour influences the loyalty to a particular pharmaceutical brand’ summed up to 74.7%. Others disagree at different levels. While for item 4, 19 (12.7%) strongly agree,

87(58.0%) agree, 34(22.7%) disagree and 10(6.7%) strongly disagree to the assertion that ‘Ease of use of pharmaceutical packed products would influence consumers loyalty to the product’. Response to item 5 indicated that 13(8.7%) strongly agree, 100 (66.7) agree, 30(20.0%) disagree and 7(4.7%) strongly disagree. Similarly, respondents’ views on item 6 indicated that 30(20.0%) strongly agree, 83(55.3%) agree, 30(20.0%) disagree and 7(4.7%) strongly disagree.

Table 2: Responses on the extent Pharmaceutical packaging design would influence Consumers’ brand loyalty

S/N	ITEMS	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	No. of Respondents
3	The wrapper design pattern and packaging material colour influences the loyalty to a particular pharmaceutical brand	23 (15.3)	24 (16.0)		18 (12.0)	150
4	Ease of use of pharmaceutical packed products would influence consumers loyalty to the product	10 (6.7)	34(22.7)		19 (12.7)	150
5	The Wrapper design of pharmaceutical brand packaging is considered important in purchasing decision	7 (4.7)	30(20.0)		13 (8.7)	150
6	The design of product wrapper would inspire the purchase of a brand product	7 (4.7)	30 (20)		30 (20.0)	150

Table 3 shows results for respondents' views on the level of influence, pharmaceutical packaging design has on consumers buying behaviour in relation to consumers' confidence in product quality and corporate image of the manufacturing company. From the table, in response to item 7, 26(17.3%) respondents strongly agree, 95 (63.3%) agree, 23(15.3%) disagree and 6(4.0%) strongly disagree. While 41 (27.3%)

strongly agree, 86(57.3%) agree, 16(10.7%) disagree and 7(4.7%) strongly disagree in response to item 8. Response to the fact that, 'The quality of a pharmaceutical product can be accessed from the type of packaging material used', indicated that 25(16.7%) strongly agree, 77(51.3%) agree, 33(22.0%) disagree and 15(10.0%) strongly disagree.

Table 3: Responses on the extent Pharmaceutical packaging design would strengthen consumers' confidence in product quality and image of product manufacturer

SN	ITEMS	Strongly disagree n (%)	Disagree n (%)	Agree	Strongly agree n (%)	Total score	No. of Respondents
8	Brand products are evaluated according to printed information while making purchasing decisions	6 (4.0)	23 (15.3)	95 (63.3)	26 (17.3)	441	150
9	Pharmaceutical brand packaging having an attractive background tells about the quality and corporate image of the manufacturing company	7 (4.7)	16 (10.7)	86 (57.3)	41 (27.3)	461	150
10	The quality of a pharmaceutical product can be accessed from the type of packaging material used.	15 (10.0)	33 (22.0)	77 (51.3)	25 (16.7)	412	150

Hypotheses Testing

H₀₁: There is no significant relationship between

pharmaceutical packaging design and consumers product identification and differentiation

Table 4: Spearman Rank Correlation Analysis Computed for Hypothesis 1

	Pharmaceutical packaging design		Consumers product identification and Differentiation
Pharmaceutical packaging design	Correlation Coefficient	1	0.519
	Sig. (2-tailed)	.	0.049
	N	150	150
Consumers product identification and Differentiation	Correlation Coefficient	0.519	1
	Sig. (2-tailed)	0.049	.
	N	150	150

*Correlation is significant at 0.05 probability level Source: Researcher's Field Analysis

Decision

The results of the analysis revealed that the correlation coefficient (r) was 0.519 and it showed a very high relationship. The correlation was significant because the level of significance of 0.049 was lower than the p-value of 0.05 (95%) probability level. This means that the null hypothesis

(H₀) was rejected, thus, there is significant relationship between pharmaceutical packaging design and consumers product identification and differentiation

Hypothesis 2: H₀₂ - There is no significant relationship between pharmaceutical packaging design and consumers brand loyalty

Table 5: Spearman Rank Correlation Analysis Computed for Hypothesis 2

	Pharmaceutical packaging design		Consumers brand loyalty
Pharmaceutical packaging design	Correlation Coefficient	1	*0.202
	Sig. (2-tailed)	.	0.014
	N	150	150
Consumers brand loyalty	Correlation Coefficient	*0.202	1.000
	Sig. (2-tailed)	0.014	.
	N	150	150

*Correlation is significant at 0.05 probability level **Source:** Researcher's field analysis

Decision

The results of the analysis revealed that the correlation coefficient (r) was 0.202 and it showed a weak relationship. However, the correlation was significant because the level of significance of 0.014 was lower than the p-value of 0.05 (95%) probability level. This means that the null hypothesis (H₀) was rejected, while the alternative hypothesis (H₁) accepted. Therefore, there is a significant relationship

between pharmaceutical packaging design and consumers brand loyalty.

Hypothesis 3

H₀₃: There is no significant relationship between pharmaceutical packaging design and consumers' confidence in product quality and corporate image of the manufacturing company

Table 6: Spearman Rank correlation analysis computed for Hypothesis 3

	Pharmaceutical Packaging and design		Consumers' confidence in Product quality
Pharmaceutical Packaging and design	Correlation Coefficient	1	0.033
	Sig. (2-tailed)	.	0.693
	N	150	150
Consumers' confidence in product quality and corporate image of manufacturer	Correlation Coefficient	0.033	1
	Sig. (2-tailed)	0.693	.
	N	150	150

*Correlation is significant at 0.05 probability level
Source: esearcher's field analysis

Decision

The results of the analysis revealed that the correlation coefficient (r) was 0.033 and it showed a very weak relationship. The correlation was also not significant because the level of significance of 0.693 was higher than the p -value of 0.05 (95%) probability level. This means that the null hypothesis (H_0) was accepted. Therefore, there is no significant relationship between pharmaceutical packaging design and consumers' confidence in product quality and corporate image of the manufacturing company.

Discussion of Findings

The results obtained revealed that there exists a strong and significant relationship between Pharmaceutical Packaging and consumers' product identification and differentiation. This observation is in line with the findings of Wells, Forley & Armstrong that packaging has the potential of serving as a tool for differentiation by aiding consumers' ability to choose a product from a wide variety of similar products [6]. Consumers' ability to identify and differentiate products has a bearing on their perception about products and to a large extent may influence purchases [3].

A weak but significant relationship was observed between Pharmaceutical Packaging Design and Consumers' Brand Loyalty. This result is in line with the postulations that drugs appearance in terms of colour and form and to a greater extent its Packaging may influence patients' belief in the efficacy of the treatment being taken or received [7]. However, their repeat purchases especially for OTC Drugs may be positively reinforced by the observed therapeutic outcome.

The results of the study showed that there is no significant relationship between Pharmaceutical Packaging Design and Consumers' confidence in Product Quality and Corporate Image of the manufacturing company. This could be explained by the peculiarities of Pharmaceutical products as highly regulated products as against other commodities of trade or merchandise. This lends credence to the fact that the respondents did not misconstrue elegant Pharmaceutical Packaging for Quality and as such did not accord any relevance to the corporate image of the manufacturing company.

Although it is widely believed that Packaging imparts value to products [4, 5] such value might have been perceived by the respondents to have aesthetic connotations which may not have a direct bearing on the therapeutic outcome they observe by taking the drugs. The growing awareness that has been created by the National Agency for Foods, Drugs Administration and Control (NAFDAC) - the agency responsible for the regulation of Drugs, Foods and other related products in Nigeria - in upholding their mandate of safe guarding the health of the nation, has to a greater extent sensitized the teeming Nigerian public to the prevalence and dangers of fake, adulterated and unwholesome drug products in the country. This has made the educated Nigerian public to be more vigilant and view pharmaceutical products offered for sale with circumspection.

Conclusion

The result of this study shows that packaging not only perform its traditional role of containment and protection but has also, taken on sales promotional role through its propensity for attracting clients' attention and positively giving identity to the product(s).

- Thus packaging of a product aids brand identification and

impacts on the sensibilities of buyers to make an informed choice/preference for buying particular products.

- Packaging can positively reinforce brand hence brand loyalty. Brand image and advertisement may have significant positive influence on consumers buying behaviour.
- Packaging design of Pharmaceutical products does not guarantee consumers' confidence in the quality of Pharmaceutical products and the corporate image of the Pharmaceutical product manufacturers.

Recommendations

Based on the findings and conclusions of this study, the following recommendations were made,

1. Pharmaceutical manufacturing companies should place much importance on their Pharmaceutical packaging designs as it aids the identification and the differentiation of their brands.
2. Pharmaceutical manufacturing companies should see packaging design as a means of strengthening their brand image which could improve brand loyalty and a positive consumer buying behaviour.

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