British Journal of Marketing Studies
Vol.3, No.7, pp.30-49, September 2015
Published by European Centre for Research Training and Development UK (www.eajournals.org)

SOCIAL MARKETING COMMUNICATIONS FOR CHECK-MATING SALES OF FAKE AND ADULTERATED DRUGS IN NIGERIA

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ABSTRACT: *Over the years, the problem of adulterated and counterfeit drugs has proved a daunting task to handle in Nigeria, despite the efforts of the country's National Drug Law Enforcement Agency (NDLEA). In one incident, over 150 children reportedly died as a result of paracetamol syrup containing diethylene glycol. Twenty years later, many babies also died from the consumption of adulterated baby food, Mypikin, imported into the country. It was such problems that led to the establishment of NAFDAC in the first place, with the goal of eliminating counterfeit pharmaceuticals and ensuring that available medications are safe and effective. Have the efforts of NAFDAC significantly curtailed the problem of sales of fake and adulterated drugs in Nigeria; and could marketing communications strategy go a long way as antidote for the problem? This study tried to find the answers. Survey design was adopted in gathering data. The data so gathered were statistically analyzed using the SPSS. Results indicate that NAFDAC has really tried in some areas, but the problem still persists in other areas, needing the cooperation of other agencies like the customs. Thus, social marketing strategies could serve as antidote to effectively dissuade Nigerians from importing, producing and sales of counterfeit drugs. Social Marketing communication tools will also be effective in curtailing if not eliminating the sales and distribution of fake and adulterated drugs using the appropriate strategies including the right media, adequate publicity, mass education of members of the channels for the distribution and sales and the promotion of anti-adulterated and counterfeit drugs.*

KEYWORDS: Social Marketing, Sales, Fake drugs, Adulterated drugs, Nigeria.

INTRODUCTION

The World Health Organization (WHO) defines counterfeit drugs as "drugs that have been deliberately or fraudulently mislabelled with respect to identity and/or source" (WHO, 2011). This may include incorrect ingredients, misstatement of the amount of the active ingredients, or drugs manufactured under circumstances that lack quality control. According to Akinyandenu (2013), counterfeit drugs in Nigeria include preparations without active ingredients, toxic preparations, expired drugs that are relabelled, drugs issued without complete manufacturing information and drugs that are unregistered with the National Agency for Food and Drug Administration and Control (NAFDAC).

For some years now, sales of fake and adulterated drugs have been a major problem in Nigeria. The menace of fake drugs became prevalent in the 1990s and the present situation is

ISSN 2053-4043(Print), ISSN 2053-4051(Online)

alarming in the West African sub-region, including Nigeria (Erhun et al, 2001). Empirical records show that there may be more fake than genuine drugs in circulation in some of the cities (Osibo, 1998). A disturbing aspect of the counterfeit drug menace is that the effects of consuming such drugs go unnoticed most of the times except in such cases where it results in mass deaths. There are generally no reliable data on the mortality or morbidity arising from the consumption of counterfeit drugs in Nigeria (Erhun et al, 2001). In 1990, 109 children reportedly died after being administered with fake paracetamol (Aluko, 1994). Again, there is no reliable statistics on the level of incidence of fake drugs in Nigeria. According to Bamitale (2013), estimates of the extent of counterfeit medicines in circulation in Nigeria ranged from 25% to 80% from various studies before 2001. A study by Poole in Nigeria in 1989 indicated that 25% of samples studied were fake, 25% genuine and 50% inconclusive (Muoghalu, 2009). Lambo (2006), also reported that in 1990, 54% of drugs in every major pharmacy in Lagos were fake, and that the figure rose to 80% in the subsequent year. Antimalarials, antibiotics, and vitamins are among the most abused drugs in Nigeria. Out of the three, antimalarials as a group had the least proportion of products with standard active ingredients, added Lambo (2006).

It is in the bid to remedy this ugly situation that the Federal Government promulgated the counterfeit and fake drugs (miscellaneous provisions) Decree No. 21 of 1988, which prohibited the sale and distribution of counterfeit, adulterated, banned, and fake drugs in open markets and without a license of registration. It also created penalties for the breach of the provisions of the decree, while a taskforce was established in each state of the federation charged with the responsibility of seizing any drug or poison illegally displayed in unlicensed or unregistered premises. Shortcomings in the decree led to its being repealed by Decree No. 21 of 1989 and other subsequent amendments (Ohuabunwa, 2002; Akiny, 2013). This culminated in the establishment of the National Agency for Foods and Drugs Administration and Control, (NAFDAC) by Decree No. 15 of 1993, to assist its sister organization, the Standard Organisation of Nigeria (SON) in arresting the rising incidence of faking/adulteration of sub-standards products in the country. NAFDAC was, however, meant to be fully responsible for regulating and controlling the manufacture, importation, exportation, advertisement, distribution, sale and use of food, drugs, cosmetics, medical devices, chemicals and packaged water which then had high records of fakes in circulation (Akunyili, 2005). Dissatisfied with progress in combating fake drugs in Nigeria, a new management team, with Dora Akunyili as Director-General, was inaugurated in April 2001. Notwithstanding the fierce fight engaged by Akunyili, which drove most of the drug merchants underground, Nigerians and the international community are today wondering if the performances of this vital agency of government have actually helped in significant measures in reducing the menace of manufacture, importation and sales of fake and substandard drugs in the country. Has NAFDAC use of the mass media in its anti-fake drugs social-marketing campaigns been potent enough, or could the inculcation of word-of-mouth, e-word of mouth and social media into the campaign prove more effective? This study tried to find out.

Statement of the Research Problem

Adulterated and counterfeit drugs are a problem in Nigeria. In one 1989 incident, over 150 children died as a result of paracetamol syrup containing diethylene glycol. The problem of fake drugs was so severe that neighboring countries such as Ghana and Sierra Leone officially banned the sale of drugs made in Nigeria (Chinwendu, 2007). Efforts to check the

ISSN 2053-4043(Print), ISSN 2053-4051(Online)

smuggling of such lethal substances into the country in the past through the Nigerian Customs Services proved abortive due the country's porous borders and collusion by corrupt Custom's officials. This led to the establishment of NAFDAC with the goal of eliminating counterfeit pharmaceuticals and ensuring that available medications are safe for the citizens (Chinwendu, 2007).

Moreover, there is the problem of high rate of deterioration of even good drugs due to poor storage habits in a country where over 90 percent of the population depend on patent medicine dealers without much safe-drug storage cultures, and also deterioration from the impact of harsh tropical conditions. When pharmaceutical drugs are unduly exposed to the harsh tropical climate, not only do they become worthless therapeutically, the products also often become toxic. It is thus imperative in a tropical region to devote resources to the provision of facilities for proper storage of drugs under conditions which minimize contamination and deterioration in order to enhance shelf-life, guarantee efficacy and prevent waste of resources and human morbidity and mortality due to consumption of expired drugs (Bamitale, 2013).

Thus, the formation of NAFDAC was inspired by global concern, especially a 1988 World Health Assembly resolution requesting countries' help in combating the global health threat posed by counterfeit pharmaceuticals. Under one of its Director Generals, Professor Dora Akunyili, NAFDAC was perceived to have performed creditably well and won international approvals. Despite her efforts, however, it is being argued in some quarters that the sale and use of fake drugs has not abetted significantly in Nigeria, especially in recent years.

Meanwhile, Social Marketing communications is the application of salient marketing communications media, tools and techniques in promoting a wholesome social course or in discouraging/demarketing an anti-social course. It is usually executed through a multi-media approach for reaching the target publics like sales promotion, publicity, personal selling, advertising, word of mouth, social media, among others. In this study's context, they are geared towards educating and enlightening the public on the vices of fake and adulterated drugs in Nigeria. Therein, lies the focus of this study to appraise the social marketing communications strategies employed by NAFDAC so far for check-mating sales of fake and adulterated drugs in Nigeria.

Research Objectives

The specific objectives sought were:

i. To ascertain the relationship between word-of-mouth social marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

ii. To determine the relationship between e-word-of-mouth as a social marketing tool and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

iii. To examine the relationship between social-media as a social marketing communications tool and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

iv. To ascertain the relationship between mass media advertising as a social marketing communications tool and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

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Research Hypotheses

To find answers to the above, the following null-hypotheses were tested:

i. There is no significant relationship between word-of-mouth social marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

ii. There is no significant relationship between e-word-of-mouth social marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

iii. There is no significant relationship between social-media marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

iv. There is no significant relationship between mass media advertising social marketing strategies and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

Significance of the Study

The study will enable the Public Relations Department of NAFDAC and other anti-drug agencies in Nigeria, Africa and the world to appreciate better the need for the use of social marketing communications models, techniques and strategies in their behavior-change campaigns rather than the use of force in eradicating fake and sub-standards drugs. It will help us to understand the reasons behind the complex behavioral changes that occur in the lives of our citizens who engage in the importations, manufacture or sales of fake and sub-standards drugs. It will help the Nigerian government in prioritizing its policies and resources geared towards winning this fake drugs war better.

Scope of the Study

The study was restricted in scope to a survey of the staff of NAFDAC, drug importers, drug manufacturers, pharmaceutical drug stores' staff, patent medicine dealers and a select cross section of educated Nigerians in Abuja and Lagos, two of the countries' major cities, and present and former capitals, which were considered as a true representative sample of the entire nation, based on the ethnic diversity of people living and working there.

REVIEW OF RELATED LITERATURE

Theoretical Framework

Social Marketing health-communications models form the basis for theoretical framework in this study and specifically directed at behavioral change of individuals. This would serve as potent tool for understanding the behaviour of social deviants like fake and sub-standards drugs importers, manufacturers and dealers in society better and the best ways of correcting them. The models and theories examined include:

The Health Belief Mode (HBM)

The Health Belief Model (HBM), developed by Hochbaum et al (1950), is based on the premise that one's personal thoughts and feelings control one's actions. It proposes that:

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i. Health behaviour, preventive or curative, is determined by internal cues (perceptions, knowledge) or external cues (reactions of friends, mass media or interpersonal communication) that trigger the need to act.

ii. Once an individual is motivated to act, the actual behavior undertaken will be determined by personal perception of "cost benefit." Before deciding to act, individuals consider whether or not the benefits (positive aspects) outweigh the barriers (negative aspects) of a particular behaviour.

iii. Individual's beliefs or personal perception of his/her ability to undertake a particular action can affect their motivation to take such action.

The implication of this to NAFDAC is that they must continue to drum into the ears of the fake drug culprits that the cost of imprisonment, loss of freedom, estrangement from ones friends and family and the loss of good name, image and prestige arising from being caught will be quite greater than any gains from fake drugs importations or sales. Thus, the need to desist from such anti-social behaviour.

The Theory of Reasoned Action

This is by Fishbein and Ajzen (1980). It introduced the concept of "behavioural intent" as a critical factor in determining whether individuals will actually perform a desired action. According to this theory, behaviour is determined by:

i. "Personal attributes" such as beliefs, attitudes and expected outcome.

ii. Perceived social pressure, norms and beliefs which individuals have about what opinions their "significant others" or reference groups hold related to a desired behaviour, combined with the extent to which they feel that they are motivated by or should go along with the opinions of others, and

iii. The perceived behaviour control such as belief individuals have about the availability of resources and obstacles to performing a behaviour combined with perceptions of the impact of these, can either facilitate or inhibit desired behavior.

The marketing communications implications of this to the NAFDAC is that they must enlist the cooperation of church leaders, royal fathers and leaders of other social groups, associations and unions in the country to "sing" continuously against illicit acquisition of wealth. That is the "igbuozu consciousness" (materialism), and its endorsement by "prosperity preachers" and "chieftaincy marketing" traditional rulers in the country, that motivate people going into importation of fake and adulterated drugs.

Social Experience Modal (SEM)

Expounded by Bloombury et al, this emphasizes that human behaviour is the result of interaction with significant others, and the ways that one is treated due to one's status or membership of a particular group. The model explains that:

i. The social contexts and relations in which one is involved influence his/her self-perception of personal competence and expectations.

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ii. Individual socio-demographic background, acting in conjunction with his/her own personal traits, determines the social context of interactions with others.

iii. Factors such as environmental resources, parental education, family income, occupational strains, opinions and behaviours of the significant others influence one's own personal perceptions and actions.

The implications of this theory to NAFDAC and other agencies all over the world that are charged with the responsibility of regulating and ensuring safe food and drugs for their citizens is that they must factor into their social-marketing and behaviour-change communication messages issues that discourage peer pressures for materialism and get-rich-quick mentality. Social groups, town unions and associations, professional associations, religious bodies should also be enlisted to voice out against ignoble acquisition of wealth in their meetings. Traditional rulers should also be barred from selling chieftaincy titles to 'money-bags' with ill-gotten wealth, in order to restore wholesome societal values. People must not make money at the peril of other peoples' lives.

The ACADA Model

The ACADA model is a development communication model developed by the United Nationals Children Fund (UNICEF). It is anchored on three strategies: advocacy, social mobilization and programme communications. According to UNICEF (2000), ACADA is an alternative development communication planning model that emphasizes thorough, realistic, practical and sustained approach to the evolution, design and delivery of social change campaigns. In the acronym, ACADA:

"A" Stands for Assessment (Pre-Project Analysis)

"CA" Stands for Communication Analysis

"D" Stands for Design (designing the communication messages for social change).

"A" Stand for Action (Programme Implementation).

The ACADA model emphasizes that it is impossible to have true development anywhere people refuse to change. Therefore, attitude and behaviour have to change if development must be achieved. The goal of the ACADA model of development communication is therefore behaviour change. Undesirable behaviours must give way to desirable ones so that progress can be made in any society, the ACADA model maintains.

Social Marketing

Social marketing is the use of marketing principles and techniques to advance a social cause, idea or practice. Social marketing seeks to increase the society's acceptability of a social idea, cause or practice. This is achieved through consumer research, segmentation, communications concept development, etc, Adirika et al (1997:152). Examples of social marketing include:

1. Public health campaigns to reduce the spread of HIV/AIDS, smoking, alcoholism, drug abuse, importation of fake products, etc.

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2. Environmental campaigns to reduce deforestation, environmental pollution, and to promote conservation of natural resources.

3. Other campaigns such as family planning, emancipation of women, helping the poor and the disabled in the society, population control, etc. (Adirika et al, 1997: 152).

The social marketer through research tries to understand why people use drugs, the pleasures they get from using drugs, and the difficulties they have in trying to stop using drugs. These information are necessary in developing an effective marketing plan aimed at stopping people from abusing drugs. Social Marketers advocate the use of marketing principles to further social goals such as population control, (Kotler, 1997:490). Social marketing is not just social advertising that is aimed at promoting public interest. Social marketing apart from promoting public cause also brings in other elements of the marketing mix such as product, price and place. A campaign about family planning for example is backed with family planning kits such as condom, and other contraceptives. The primary objective of social marketing is to produce a social change that will lead to social growth in the society.

Reasons for the Prevalence of Fake Drugs in Nigeria

In a study by Erhun et al (2001), in which seven pharmaceutical organizations were surveyed, the respondents were unanimous that the problem of counterfeit drugs in Nigeria was real and was capable of undermining the health care delivery efforts of the federal and state governments. The reasons given by the organizations for the preponderance of counterfeit drugs in Nigeria are reflected in table 1 below:

Table1: Reasons Adduced for Availability of Counterfeit Drugs in Nigeria

REASONS	NUMBER OF RESPONDENTS (N=7)
Laws are inadequate	85.71%
Ineffective enforcement of existing laws	100%
Non Health Professionals in Drug Business	85.71%
Loose control systems	28.57%
High cost of drugs	71.43%
Greed	42.86%
Ignorance	100%
Corruption	57.14%

Source: Erhun, W.O.; Babalola, O.O. & Erhun M.O. (2001), Drug Regulation and Control in Nigeria: The Challenge of Counterfeit Drugs, *Journal of Health & Population in Developing Countries;* 2001, 4(2):23-34.

From table 1 above, 85.71 percent of the respondents believed that inadequate Laws is responsible for the for the availability of counterfeit drugs in Nigeria**.** 100% said the laws are not inadequate, but rather the ineffective enforcement of existing laws is the problem. 85.71% blamed the predominance of non-health professionals in the drug business in the country for the problem. 28.57% fingered loose control systems, while 71.43% believed the problem is rooted in the high cost of drugs in the country. 42.86% blamed it on greed on the parts of the culprits. 100% said the persistence of the problem in spite of government's efforts is rooted in widespread ignorance arising from high illiteracy levels, while 57.14%

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fingered corruption amongst the relevant governmental agencies like the Customs and NAFDAC for the problem.

Word-of-mouth (WOM) social marketing communications

Word-of-mouth communications (WOM) is defined as the passing of information by verbal means or person-to-person manner. It is oral, person-to-person communication between a receiver and a communicator whom the receiver perceives as either commercial or non-commercial, regarding a brand, product or service. It also involves the exchange of ephemeral oral or spoken messages between a contiguous source and a recipient who communicates directly in real life (Bao and Chang, 2014).

Word-of-mouth communication is again when people share their evaluations of ideas, services or products they have encountered to their friends or family members, thus, becoming indirect sales persons or change agents to concerned organizations (Zabaniotou, 2008). It has been acknowledged for many years as a major influence on what people know, feel and do (Zabaniotou, 2008). As a communications and marketing process, word-of mouth communication can be effective in health-marketing campaigns like the social-marketing programme to discourage people from the manufacture, importation and sales of fake, adulterated, expired or sub-standard drugs.

E-word-of-mouth social marketing communications

Electronic word-of-mouth (eWOM) communication refers to any positive or negative statement made by potential, actual, and former customers about a product or a company via the Internet (Hennig-Thurau et.al., 2004). It was promoted by the advances of the Internet revolution. The opportunities offered by this media include: online discussion forums, consumer review sites, weblogs, social network sites, and many more (Lee, Park and Han, 2008). Bao and Chang (2014) observed that in recent years, online social networks and social media platforms have further helped the spread of eWOM. What sets eWOM apart from traditional WOM is the combination of (1) unprecedented scale, (2) the possibilities for eWOM designers to control and monitor eWOM operation, and (3) unique properties of online interaction. One of the most important capabilities of the Internet is interactive communication at a larger scale: "for the first time in human history, individuals can make their personal thoughts, reactions, and opinions easily accessible to the global community of Internet users", and the interactive communication provides an online feedback mechanism to serve multiple functions (Cheung & Thadani, 2010; Bao & Chang, 2014). This media, nodoubt, could therefore serve as another veritable tool for the social-marketing programme to discourage people from the manufacture, importation and sales of fake, adulterated, expired or sub-standard drugs in developing countries like Nigeria.

Social-Media Marketing Communications

This include all the new Internet communications media for social networking like the Twitter, Facebook, LinkedIn, Foursquare, Youtube and many more, (Yoxall et al, 2006; Choi and Burgess, 2007). Unlike the traditional tools which allowed for only one-way communication, social media outlets allow you to engage in two-way communication and to receive immediate feedback from your various stakeholders and publics (Zabaniotou, 2008). Furthermore, it offers organizations the opportunity to join discussions with multiple users so

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as to create a positive image of the company or market their products, services, ideas, programmes or projects (Wilcox et al, 2002:149).

Again, through mobile-phone marketing, behavior-change agents can engage with fake drugs importers, manufacturers and dealers through a mobile device or network, such as a cellphone, smartphone, or tablet. Available tools and media here include: SMS: (short message service) — marketing communications are sent in the form of text messages, also known as texting. MMS: (multi-media message service) — These messages use elements such as images, video, and audio; Mobile Applications: Smartphone-based mobile apps contain several types of messages. Push Notifications are direct messages sent to a user either automatically or as part of a campaign. Location-Based Marketing: marketing messages delivered directly to a mobile device based on the user's location (Wunderman, 2011; Oguinn, 2008:624). They are therefore highly recommended for a successful behavior-change campaign to get people desist from the lure into the manufacture, importation, distribution and sales of fake, adulterated or sub-standard drugs, for quick money purposes.

Steps by the World Health Organization (WHO) to Combat Counterfeit Medicines in the World

In order to mobilize awareness and action in the fight against fake drugs, in February 2006, WHO created a global partnership known as the International Medicinal Products Anti-Counterfeiting Taskforce (IMPACT). IMPACT is comprised of all 193 WHO Member States on a voluntary basis and includes international organizations, enforcement agencies, national drug regulatory authorities, customs and police organizations, non-governmental organizations, associations representing pharmaceutical manufacturers and wholesalers, health professionals and patients' groups. These groups have joined to improve coordination and harmonization across and between countries so that eventually the production, trading and selling of fake medicines will cease. To accomplish this mandate, IMPACT focussed on five key areas: Legislative and regulatory infrastructure, Regulatory implementation, Enforcement, Technology and Risk communication (WHO, 2006).

METHODOLOGY

Survey design was adopted for the study with structured hard copy and E-questionnaire as the main instrument for data collection. Each item in the questionnaire had five response choices ranging from "to no extent" (1) to "to a great extent" (5). To increase the response rate, multiple data collection methods (internet and hand-delivery survey) were employed. In total, 160 citizens of diverse social classes and backgrounds participated in the study. The response rate was 134 respondents or 83.75 percent, distributed as follows: 59% male and 41% female; 25% were in the age bracket of 21 to 30 years, 28% in the age range of 31 to 40 years; 29% in the age group of 41 to 50 years, while the remaining 18% were 51 years or above. 10 % were NAFDAC staff, 31% were drug importers, 30% were drug manufacturers in the country, 10% were pharmaceutical drug store owners, 9% were patent medicine dealers, while the remaining 10% were a cross section of selected members of the Nigerian public. The data were analyzed with the statistical tools of chi-square (X^2), Spearman's correlation coefficient and Pearson correlation coefficient with SPSS version 21, at 95% confidence level and 5% margin of error, to explore the relationship between each of the

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social marketing communications variables as tools for check-mating sales of fake and adulterated drugs in Nigeria.

Data Presentation and Analysis

A total of 160 copies of the structured questionnaire were distributed to the target respondents. 134 (83.75%) of them filled and returned theirs, wile 26 (16.25%) could not. The respondents were aged between 21 to 65 years.

Test of Hypothesis One

Ho: There is no significant relationship between word-of-mouth social marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

Test Statistic: Chi-square (X^2) with SPSS version 21.

Decision Rules

If X^2cal> X^2 tab, the null hypothesis (Ho) will be rejected while the alternative hypothesis (Hi) will be accepted. If X^2 cal <X^2 tab, the null hypothesis (Ho) will be accepted while alternative Hypothesis (Hi) will be rejected.

Frequencies

Table 2: Effect of Word-of-Mouth among Friends

	Observed N	Expected N	Residual
To no extent	3	26.8	-23.8
To a little extent	8	26.8	-18.8
To a fair extent	8	26.8	-18.8
To a moderate extent	48	26.8	21.2
To a great extent	67	26.8	40.2
Total	134		

Table3: Effect of Word-of-Mouth among Family

	Observed N	Expected N	Residual
To no extent	3	26.8	-23.8
To a little extent	13	26.8	-13.8
To a fair extent	18	26.8	-8.8
To a moderate extent	34	26.8	7.2
To a great extent	66	26.8	39.2
Total	134		

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Table 4: Effect of Word-of-Mouth among professional colleagues

	Observed N	Expected N	Residual
To a little extent	5	33.5	-28.5
To a fair extent	18	33.5	-15.5
To a moderate extent	42	33.5	8.5
To a great extent	69	33.5	35.5
Total	134		

Table5: Effect of Word-of-Mouth among office colleagues

	Observed N	Expected N	Residual
To no extent	4	26.8	-22.8
To a little extent	18	26.8	-8.8
To a fair extent	24	26.8	-2.8
To a moderate extent	36	26.8	9.2
To a great extent	52	26.8	25.2
Total	134		

Table 6: X^2 Test Statistics

	Word-of-Mouth among Friends	Word-of-Mouth among Family	Word-of-Mouth among professional	Word-of-Mouth among office colleagues
Chi-Square	124.582[a]	90.403[a]	71.194[b]	49.433[a]
df	4	4	4	4
Asymp. Sig.	.000	.000	.000	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 26.8.
b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 33.5.

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Result Interpretation

From table 6 above, the chi-square test statistics shows that X^2calculated value for word-of-mouth among friends is 124.582, which is greater than X^2 table value of 9.49 at 4 degree of freedom, showing that this social marketing communications option is highly significant for the reduction of fake and adulterated drugs by NAFDAC in Nigeria. Again, X^2 calculated value for word-of-mouth among family members is 90.403, which is greater than the X^2 table value of 9.49 at 4 degree of freedom; X^2 calculated value for word-of-mouth among word-of-mouth among professional colleagues is 71.194, which is greater than the X^2 table value of 7.81 at 3 degree of freedom; X^2 calculated value for word-of-mouth among Word-of-Mouth among office colleagues is 49.433, which is greater than the X^2 table value of 9.49 at 4 degree of freedom. All these meant that the null-hypothesis is rejected and the alternative hypothesis accepted which says that: "There is significant relationship between word-of-mouth social marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria."

Test of Hypothesis Two

Ho: There is no significant relationship between e-word-of-mouth social marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

Test Statistic: Spearman's correlation coefficient with SPSS version 21.

Table 7: Spearman's Correlations

			Online Discussion Forums	Weblogs Strategies
Spearman's rho	Online Discussion Forums	Correlation Coefficient	1.000	.521**
		Sig. (2-tailed)	.	.000
		N	134	134
	Weblogs Strategies	Correlation Coefficient	.521**	1.000
		Sig. (2-tailed)	.000	.
		N	134	134

**. Correlation is significant at the 0.01 level (2-tailed).

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CORRELATIONS
  /VARIABLES=Online_discuss Weblogs
  /PRINT=TWOTAIL NOSIG
  /STATISTICS DESCRIPTIVES
  /MISSING=PAIRWISE.
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Result Interpretation

Results on table 7 indicate that both online discussion forums and weblogs strategies were significant at 0.01 levels < 0.05, hence, a rejection of the null hypothesis and acceptance of the alternative hypothesis which states that: "There is significant relationship between e-

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word-of-mouth social marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria."

Test of Hypothesis Three

Ho: There is no significant relationship between social-media marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

Test Statistic: Pearson's correlation coefficient with SPSS version 21.

Table 8: Descriptive Statistics

	Mean	Std. Deviation	N
Online Discussion Forums	4.04	1.130	134
Weblogs Strategies	3.64	1.159	134

Table 9: Correlations

		Online Discussion Forums	Weblogs Strategies
Online Discussion Forums	Pearson Correlation	1	.529**
	Sig. (2-tailed)		.000
	N	134	134
Weblogs Strategies	Pearson Correlation	.529**	1
	Sig. (2-tailed)	.000	
	N	134	134

**. Correlation is significant at the 0.01 level (2-tailed).

Result Interpretation

Tables 8 and 9 reveal that the relationship between six social marketing communication tools of Online discussion forums, weblogs strategies, social network sites, E-mails, Voice-mails and Text-messages and the reduction of fake and adulterated drugs in Nigeria were examined. Online discussion forums had $r = 1$, which means a perfect positive correlation; weblogs strategies had r = 0.529, which means a positive correlation; social network sites had r = 0.37 which means a positive correlation; E-mails had a result of $r = 0.378$, which means a positive correlation; Voice-mails had result of a weak positive correlation $r = 0.216$; while text messages also had a weak positive correlation of $r = 0.020$. Over all, the result indicates a rejection of the null-hypothesis and acceptance of the alternative hypothesis which says that "There is significant relationship between social-media marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria."

Test of Hypothesis Four

Ho: There is no significant relationship between mass media advertising social marketing strategies and the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

Test Statistic: Pearson's correlation coefficient with SPSS version 21.

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Table 10: Descriptive Statistics

	Mean	Std. Deviation	N
Online Discussion Forums	4.04	1.130	134
Weblogs Strategies	3.64	1.159	134
Social Network Sites	4.23	1.054	134
E-mails	3.71	1.175	134
Voice-mails	3.34	1.201	134
Text-messages	3.94	1.116	134

Table 11: Correlations

		Online Discussion Forums	Weblogs Strategies	Social Network Sites	E-mails	Voice-mails	Text-messages
Online Discussion Forums	Pearson Correlation	1	.529**	.307**	.378**	.216*	.020
	Sig. (2-tailed)		.000	.000	.000	.012	.818
	N	134	134	134	134	134	134
Weblogs Strategies	Pearson Correlation	.529**	1	.413**	.293**	.292**	.059
	Sig. (2-tailed)	.000		.000	.001	.001	.499
	N	134	134	134	134	134	134
Social Network Sites	Pearson Correlation	.307**	.413**	1	.279**	.205*	.306**
	Sig. (2-tailed)	.000	.000		.001	.017	.000
	N	134	134	134	134	134	134
E-mails	Pearson Correlation	.378**	.293**	.279**	1	.395**	.055
	Sig. (2-tailed)	.000	.001	.001		.000	.524
	N	134	134	134	134	134	134
Voice-mails	Pearson Correlation	.216*	.292**	.205*	.395**	1	.155
	Sig. (2-tailed)	.012	.001	.017	.000		.073
	N	134	134	134	134	134	134
Text-messages	Pearson Correlation	.020	.059	.306**	.055	.155	1
	Sig. (2-tailed)	.818	.499	.000	.524	.073	
	N	134	134	134	134	134	134

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

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Result Interpretation

Data displayed on tables 10 and 11 reveal that the relationship between three mass media social marketing communication tools and the reduction of fake and adulterated drugs in Nigeria were examined.

Television advertising had a result of $r = 1$, which means a perfect positive correlation; Radio advertising had r = 0.350, which means a positive correlation; while Printmedia advertising had a result of r = 0.277 which means a positive correlation. Over all, the result indicates a rejection of the null-hypothesis and acceptance of the alternative hypothesis which says that: "There is significant relationship between mass media advertising social marketing strategies and the reduction of fake and adulterated drugs by NAFDAC in Nigeria."

Discussion of Results

The results of this study point to the fact an integrated multi-media social communications' approach is necessary for de-marketing the ugly habit of importation, production and sales of fake and adulterated pharmaceutical drugs in Nigeria. For instance, the result number one reflects that there is a significant relationship between word-of-mouth social marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria. This is in agreement with the study by Zabaniotou (2008), where he found that for many years, word-of-mouth communications had served as a major influence on what people know, feel and do. Hence, word-of mouth communication will definitely be effective in the health-marketing campaigns by NAFDAC to discourage people from the manufacture, importation and sales of fake, adulterated, expired or sub-standard drugs in the country.

On the other hand, e- word-of-mouth social marketing communications would serve as potent complements in the campaign as revealed by the number two result which showed a significant relationship between e-word-of-mouth social marketing communications and the reduction of fake and adulterated drugs by NAFDAC in Nigeria. This receives support in the findings of Bao and Chang (2014) that what sets eWOM apart from traditional WOM is the combination of (1) unprecedented scale, (2) the possibilities for eWOM designers to control and monitor eWOM operation, and (3) unique properties of online interaction, coupled with the capabilities of interactive communication at a larger scale. Apart from that it also offer effective feedback opportunities by allowing individuals to make their personal thoughts, reactions, and opinions easily accessible to the global community of Internet users, who can also react on that, thus, this interactive communication provides an online feedback mechanism that serves multiple functions (Bao & Chang, 2014).

Added to these, social media social marketing communications are actually enlarged version of eWOM, since the communication opportunities it offers transcend the eWOM, as could be seen in the six variables (online discussion forums, weblogs strategies, social network sites, e-mails, voice-mails and text-messages) used in testing hypothesis three. Hence, this media is very crucial in the health-marketing campaigns by NAFDAC to discourage people from the manufacture, importation and sales of fake, adulterated, expired or sub-standard drugs in the country.

Finally, the mass media can never be relegated to the background since the result number four also revealed a significant relationship between mass media advertising social marketing communication and the reduction of fake and adulterated drugs by NAFDAC in Nigeria. Hence, the war against importations, manufacture and sales of fake, adulterated, expired or

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sub-standard drugs in the country demands a wholistic multi-media social marketing communications attention.

CONCLUSION

Over the years, some unwary members of the country have fallen victims to the consumption of fake, adulterated, expired or sub-standard drugs. The Late mother of one of the authors of this paper, Ben Odigbo, was one of such unfortunate victims who lost their lives to the menace. While a few citizens may be smiling to the banks over such illicit businesses, millions of others are being thrown into indelible grief, while the social and economic losses to the nation cannot be quantified. It is our candid belief, therefore, that if the findings of this study is given due attention by the Nigerian authority, it will go a long way in helping to find enduring solution to the problem.

RECOMMENDATIONS

Based on the findings and other revelations of this study, it is recommended as follows:

i. The use of word-of-mouth social marketing communications' media and strategies should be stepped up in the war for the reduction of fake and adulterated drugs by NAFDAC in Nigeria.

ii. Since majority of Nigerians are now keyed into social-networking, the use of e-word-of-mouth social marketing communications' media be used in complementing the word-of-mouth campaigns for the eradication of fake and adulterated drugs by NAFDAC in Nigeria.

iii. However, since the Ewom media do not embrace all the social-media channels, the use of other social-media marketing communications approaches should also be highly accommodated in the campaign.

iv. Mass media advertising social marketing communications should also be employed in reinforcing the gains achieved from the other aforementioned media strategies in order to sustain this in the minds of the target publics.

v. The use of opinion leaders, peer groups' networks, social groups' networks, family members' networks, professional group networks, religious groups' networks and such others, must be factored into the campaign.

vi. Finally, while employing these subtle persuasive communication approaches, the law enforcement agencies must be strengthened with adequate facilities and remuneration, and their cooperation fully secured in order to track down obstinate, hardliner culprits who might turn deaf ears to the messages.

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Appendix 1: The Questionnaire

CLUSTER A: Relationship between word-of-mouth social marketing communications strategies and the reduction of fake and adulterated drugs by NAFDAC in Nigeria

S/N	Issues	To a Great Extent	To Moderate Extent	To Fair Extent	To Little Extent	Not at all
1	Word-of-mouth social marketing communications strategies amongst friends will help NAFDAC significantly reduce fake and adulterated drugs in Nigeria					
2	Word-of-mouth social marketing communications strategies amongst family members will help NAFDAC significantly reduce fake and adulterated drugs in Nigeria					
3	Word-of-mouth social marketing communications strategies amongst professional colleagues will help NAFDAC significantly reduce fake and adulterated drugs in Nigeria					
4	Word-of-mouth social marketing communications strategies amongst office colleagues will help NAFDAC significantly reduce fake and adulterated drugs in Nigeria					

CLUSTER B: Relationship between e-word-of-mouth social marketing communications strategies and the reduction of fake and adulterated drugs by NAFDAC in Nigeria

S/N	Issues	To a Great Extent	To Moderate Extent	To Fair Extent	To Little Extent	Not at all
1	The use of **e-word-of-mouth social marketing communications strategies of** online discussion forums by NAFDAC will significantly help reduce fake and adulterated drugs in Nigeria					
2	The use of **e-word-of-mouth social marketing communications strategies of** weblogs by NAFDAC will significantly help reduce fake and adulterated drugs in Nigeria					
3	The use of **e-word-of-mouth social marketing communications strategies of** social network sites like facebook, LinnkedIn, youtube, etc, by NAFDAC will significantly help reduce fake and adulterated drugs in Nigeria					

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CLUSTER C: Relationship between social-media marketing communications strategies and the reduction of fake and adulterated drugs by NAFDAC in Nigeria

S/N	Issues	To a Great Extent	To Moderate Extent	To Fair Extent	To Little Extent	Not at all
1	The use of social-media marketing communications strategies of e-mails by NAFDAC will significantly help reduce fake and adulterated drugs in Nigeria					
2	The use of social-media marketing communications strategies of voice-mails by NAFDAC will significantly help reduce fake and adulterated drugs in Nigeria					
3	The use of social-media marketing communications strategies of text-messages by NAFDAC will significantly help reduce fake and adulterated drugs in Nigeria					

CLUSTER D: Relationship between mass media advertising as a social marketing communications tool and the reduction of fake and adulterated drugs by NAFDAC in Nigeria

S/N	Issues	To a Great Extent	To Moderate Extent	To Fair Extent	To Little Extent	Not at all
1	The use of mass media television advertising as a social marketing communications tool by NAFDAC will significantly help reduce fake and adulterated drugs in Nigeria					
2	The use of mass media radio advertising as a social marketing communications tool by NAFDAC will significantly help reduce fake and adulterated drugs in Nigeria					
3	The use of print-media advertising as a social marketing communications tool by NAFDAC will significantly help reduce fake and adulterated drugs in Nigeria					

Thank you for the cooperation.

ISSN 2053-4043(Print), ISSN 2053-4051(Online)