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EFFECT OF HEALTH EDUCATION ON NAFDAC COMPLIANCE AND COLLABORATION AMONG MEDICAL EQUIPMENT DEALERS IN ONITSHA, ANAMBRA STATE

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Abstract

This study investigated the effect of health education intervention on regulatory compliance and collaboration between medical equipment dealers and the National Agency for Food and Drug Administration and Control (NAFDAC) in Onitsha, Anambra State. The study was anchored on the Health Belief Model (Rosenstock, 1955), which posits that individuals' health-related behaviors are influenced by their perceived susceptibility, severity, benefits, and barriers. A quasi-experimental pre-test–post-test non-equivalent control group design was adopted. The population comprised 1,786 registered medical equipment dealers at Ogbo Ogwu Bridge Head Market, Onitsha. A sample of 360 dealers was selected using the Taro Yamane formula and stratified random sampling technique. The experimental group received a six-week health education intervention focusing on NAFDAC guidelines, registration procedures, and regulatory compliance strategies, while the control group received no intervention. Data were collected using the NAFDAC Compliance and Collaboration Questionnaire *(NCCQ), which was validated by experts and yielded a reliability coefficient of 0.82. Data were analyzed using mean, standard deviation, and analysis of covariance (ANCOVA) at the .05 level of significance. The study sought to determine the pre-intervention level of NAFDAC regulatory compliance and collaboration among medical equipment dealers and to examine the effect of health education intervention on regulatory compliance and collaboration after the intervention. The findings revealed that the pre-test mean scores for regulatory compliance were low for both the experimental group ($M = 42.35$, $SD = 8.12$) and the control group ($M = 41.90$, $SD = 7.98$). Following the intervention, the experimental group recorded a significantly higher compliance score ($M = 78.64$, $SD = 6.45$) than the control group ($M = 43.20$, $SD = 8.01$),* $F(1, 357) = 215.43$, $p < .001$, $\eta^2 = .38$. *Similarly, collaboration with NAFDAC improved significantly among participants in the experimental group ($M = 81.22$, $SD = 5.90$) compared with the control group ($M = 44.50$, $SD = 7.33$),* $F(1, 357) = 198.76$, $p < .001$, $\eta^2 = .36$. *The study concluded that health education intervention is an effective strategy for improving regulatory compliance and strengthening collaboration between medical equipment dealers and NAFDAC. It was recommended that NAFDAC institutionalize periodic health education and training programmes for medical equipment dealers at Bridge Head Market to sustain compliance, enhance collaboration, and minimize regulatory conflicts.*

Keywords: health education, regulatory compliance, collaboration, medical equipment dealers, NAFDAC.

Introduction

Medical equipment plays a critical role in healthcare delivery by supporting diagnosis, treatment, monitoring, and rehabilitation of patients. The quality, safety, and effectiveness of medical equipment depend largely on compliance with regulatory standards established by relevant authorities. In Nigeria, the National Agency for Food and Drug Administration and Control (NAFDAC) is responsible for regulating the manufacture, importation, distribution, advertisement, sale, and use of medical devices and equipment to safeguard public health (NAFDAC, 2024). Despite these regulatory responsibilities, reports continue to indicate the circulation of unregistered, counterfeit, and substandard medical equipment in major commercial centres, thereby posing significant risks to healthcare providers and patients (World Health Organization [WHO], 2023).

Health education has increasingly been recognized as an effective strategy for improving knowledge, attitudes, and practices related to regulatory compliance. It equips individuals with relevant information and practical skills needed to adopt desirable behaviours and comply with established regulations (WHO, 2022). Among medical equipment dealers, health education interventions can enhance awareness of registration procedures, documentation requirements, quality assurance measures, and legal obligations associated with medical device distribution. Such interventions also strengthen communication and cooperation between regulatory agencies and traders, thereby promoting safer healthcare systems.

Regulatory compliance among medical equipment dealers remains a major concern in Nigeria. Although NAFDAC has intensified surveillance, inspections, and enforcement activities, many dealers continue to operate without adequate knowledge of regulatory requirements or fail to comply with existing guidelines (NAFDAC, 2024). Non-compliance contributes to the proliferation of counterfeit and uncertified medical equipment, undermining public confidence in healthcare services and increasing the burden of preventable health risks (WHO, 2023).

Collaboration between regulatory agencies and business operators is equally important for achieving effective regulatory outcomes. Productive collaboration encourages information sharing, voluntary compliance, prompt reporting of suspicious products, and participation in regulatory training programmes. However, relationships between medical equipment dealers and regulatory agencies are often characterized by distrust, inadequate communication, and limited stakeholder engagement, which reduce the effectiveness of regulatory interventions (Federal Ministry of Health, 2022).

Bridge Head Market (Ogbo Ogwu) in Onitsha, Anambra State, is one of the largest pharmaceutical and medical equipment markets in southeastern Nigeria. The market serves as a major distribution hub for medical products across the country. Given the large volume of transactions and the diversity of medical equipment traded within the market, ensuring compliance with NAFDAC regulations is essential for protecting public health. Nevertheless, empirical evidence on the effectiveness of health education interventions in improving regulatory compliance and fostering collaboration among medical equipment dealers in this setting remains limited.

Although previous studies have examined regulatory compliance in pharmaceutical practice and health education interventions in various public health contexts, few have investigated whether structured health education programmes can significantly improve both regulatory compliance and collaborative relationships between medical equipment dealers and NAFDAC. This gap necessitated the present study, which evaluated the effect of a health education intervention on regulatory compliance and collaboration among medical equipment dealers in Onitsha, Anambra State.

The study specifically sought to:

1. determine the pre-intervention level of NAFDAC regulatory compliance among medical equipment dealers in Onitsha;
2. assess the pre-intervention level of collaboration between medical equipment dealers and NAFDAC;
3. determine the effect of health education intervention on NAFDAC regulatory compliance among medical equipment dealers; and
4. examine the effect of health education intervention on collaboration between medical equipment dealers and NAFDAC.

The study tested the following null hypotheses at the .05 level of significance:
H_{01}: Health education intervention has no significant effect on NAFDAC regulatory compliance among medical equipment dealers in Onitsha.
H_{02}: Health education intervention has no significant effect on collaboration between medical equipment dealers and NAFDAC in Onitsha.
The findings of this study are expected to provide evidence for NAFDAC, policymakers, public health educators, and medical equipment dealers on the effectiveness of health education as a strategy for improving regulatory compliance and strengthening collaborative partnerships within Nigeria's medical device distribution sector.

Literature Review

Conceptual Review

Health education is a planned process of providing individuals and communities with information and skills that enable them to make informed decisions and adopt behaviours that promote health and well-being. Beyond disease prevention, health education facilitates behavioural change by increasing awareness, improving attitudes, and encouraging adherence to recommended standards and regulations (World Health Organization [WHO], 2022). In regulatory environments, health education serves as a preventive strategy that empowers stakeholders to understand legal requirements, quality standards, and the consequences of non-compliance. For medical equipment dealers, structured health education programmes can improve knowledge of product registration, documentation, quality assurance, and post-market surveillance, thereby promoting voluntary compliance with regulatory guidelines.

Regulatory compliance refers to the extent to which individuals or organizations adhere to laws, policies, standards, and guidelines established by regulatory authorities. In the Nigerian healthcare sector, the National Agency for Food and Drug Administration and Control (NAFDAC) is mandated to regulate the manufacture, importation, distribution, advertisement, sale, and use of medical devices to ensure their safety, quality, and effectiveness (NAFDAC, 2024). Compliance among medical equipment dealers involves

registering products with NAFDAC, maintaining proper documentation, sourcing products from approved manufacturers, cooperating during inspections, and adhering to approved marketing and distribution practices. High levels of compliance contribute to improved patient safety, reduced circulation of counterfeit products, and enhanced confidence in healthcare services.

Collaboration between regulatory agencies and regulated stakeholders is another important component of effective regulatory systems. Collaboration involves mutual communication, trust, information sharing, and joint participation in activities that promote regulatory objectives. Effective collaboration enables medical equipment dealers to understand regulatory expectations, seek clarification on compliance issues, report suspicious products, and participate in capacity-building programmes organized by regulatory authorities. Regulatory agencies also benefit from collaboration through improved intelligence gathering, increased voluntary compliance, and reduced enforcement costs (Federal Ministry of Health, 2022).

Health education interventions have been identified as effective mechanisms for strengthening both compliance and collaboration. Educational interventions provide opportunities for stakeholders to clarify misconceptions, improve their understanding of regulations, and develop positive attitudes toward regulatory authorities. Interactive approaches such as workshops, seminars, demonstrations, and stakeholder engagement meetings promote dialogue and encourage sustained behavioural change. Consequently, health education not only improves knowledge but also strengthens relationships between regulators and business operators, thereby enhancing overall regulatory effectiveness.

Theoretical Framework

This study was anchored on the **Health Belief Model (HBM)** developed by Rosenstock (1952) and subsequently expanded by Becker and colleagues. The model explains that individuals are more likely to adopt desirable health-related behaviours when they perceive themselves as susceptible to a problem, recognize the seriousness of its consequences, believe that the benefits of action outweigh potential barriers, and receive cues that motivate action.

The constructs of the Health Belief Model are applicable to regulatory compliance among medical equipment dealers. Dealers are more likely to comply with NAFDAC regulations when they understand the public health risks associated with counterfeit or unregistered medical equipment, appreciate the legal and economic consequences of non-compliance, perceive the benefits of compliance, and receive adequate education and guidance from regulatory authorities. Health education intervention therefore serves as a cue to action by increasing awareness, reducing misinformation, and strengthening confidence in regulatory procedures. The model provides an appropriate framework for explaining how educational intervention can influence compliance behaviour and collaborative engagement with NAFDAC.

Empirical Review

Several empirical studies have demonstrated the effectiveness of educational interventions in improving regulatory compliance and professional practice within healthcare systems. **Okafor and Nwosu (2021)** reported that structured educational programmes significantly improved healthcare providers' adherence to regulatory guidelines in southeastern Nigeria. Participants who received targeted training demonstrated higher levels of compliance than those who did not receive the intervention.

Similarly, **Adewale and Adebisi (2022)** examined the influence of stakeholder education on regulatory compliance among pharmaceutical distributors in southwestern Nigeria. The study found that continuous education increased knowledge of regulatory requirements, improved documentation practices, and strengthened voluntary compliance with national regulations.

International evidence also supports the effectiveness of educational interventions. **WHO (2022)** reported that capacity-building programmes targeting healthcare supply-chain stakeholders improved compliance with quality assurance standards and reduced the circulation of substandard medical products in several low- and middle-income countries. Educational strategies were found to be more sustainable when combined with stakeholder engagement and regular communication between regulators and regulated organizations.

In another study, **Nnaji et al. (2023)** investigated collaboration between regulatory agencies and healthcare product distributors in Nigeria. The researchers found that regular communication, stakeholder workshops, and participatory regulatory activities significantly improved trust, information sharing, and compliance among regulated businesses. The study concluded that education-based interventions promote cooperative relationships that facilitate regulatory effectiveness.

Despite these findings, most previous studies focused on pharmaceutical products, healthcare professionals, or regulatory enforcement mechanisms. Limited empirical evidence exists regarding the effectiveness of health education interventions among medical equipment dealers, particularly in southeastern Nigeria. Furthermore, few studies have simultaneously examined the effects of health education on both regulatory compliance and collaboration with NAFDAC. This gap provided the justification for the present study.

Summary of Literature Review

The reviewed literature established that health education enhances knowledge, attitudes, and behaviours that promote compliance with regulatory standards. Regulatory compliance is essential for ensuring the safety and quality of medical equipment, while effective collaboration between dealers and regulatory agencies strengthens regulatory performance and public health protection. The Health Belief Model explains how educational interventions influence compliance behaviour by increasing perceived benefits and reducing barriers to action. Empirical studies consistently indicate that educational programmes improve compliance and stakeholder engagement; however,

evidence focusing specifically on medical equipment dealers in Onitsha remains limited. The present study therefore contributes to the literature by evaluating the effect of health education intervention on both regulatory compliance and collaboration between medical equipment dealers and NAFDAC in Onitsha, Anambra State.

Methodology

Research Design

This study adopted a **quasi-experimental pre-test–post-test non-equivalent control group design** to determine the effect of a health education intervention on regulatory compliance and collaboration between medical equipment dealers and the National Agency for Food and Drug Administration and Control (NAFDAC) in Onitsha, Anambra State. The design was considered appropriate because it enabled the researcher to compare outcomes between an experimental group that received the intervention and a control group that did not, while measuring participants before and after the intervention. This design is widely used in public health intervention studies where random assignment of participants is impractical or impossible (Creswell & Creswell, 2023).

Area of the Study

The study was conducted at **Ogbo Ogwu Bridge Head Market**, Onitsha, Anambra State, Nigeria. The market is one of the largest commercial centres for pharmaceutical products and medical equipment in southeastern Nigeria. It serves as a major distribution hub for healthcare products to hospitals, pharmacies, clinics, and medical facilities across Nigeria. Because of its strategic role in healthcare supply chains, the market provides an appropriate setting for assessing regulatory compliance and collaboration between medical equipment dealers and NAFDAC.

Population of the Study

The target population comprised **1,786 registered medical equipment dealers** operating within Ogbo Ogwu Bridge Head Market, Onitsha, according to the official register of the market association and NAFDAC (2024).

Sample Size and Sampling Technique

A sample size of **360 respondents** was determined using the **Taro Yamane (1967) formula** at a 5% margin of error:

n=N1+N(e)2n=\frac{N}{1+N(e)^2}n=1+N(e)2N

where:

- nnn = sample size
- NNN = population (1,786)
- eee = level of precision (0.05)

The calculated sample size was proportionately distributed across relevant categories of medical equipment dealers using **stratified random sampling** to ensure adequate representation. Participants were then selected through simple random sampling within each stratum.

Instrument for Data Collection

Data were collected using a structured questionnaire titled the **NAFDAC Compliance and Collaboration Questionnaire (NCCQ)**. The instrument consisted of three sections:

- **Section A:** Demographic characteristics of respondents.
- **Section B:** Items measuring NAFDAC regulatory compliance.
- **Section C:** Items assessing collaboration between medical equipment dealers and NAFDAC.

Responses were rated using a **five-point Likert scale** ranging from:

i. Strongly Agree (5)
ii. Agree (4)
iii. Undecided (3)
iv. Disagree (2)
v. Strongly Disagree (1)

Higher scores indicated greater regulatory compliance and stronger collaboration.

Validity of the Instrument

The questionnaire was subjected to **face and content validation** by experts in Health Education, Public Health, and Measurement and Evaluation. Their observations focused on clarity, relevance, comprehensiveness, and appropriateness of the questionnaire items. Necessary modifications were made before the instrument was administered.

Reliability of the Instrument

A pilot study was conducted among **30 medical equipment dealers** outside the study area but with similar characteristics to the study participants. Data obtained from the pilot study were analyzed using **Cronbach's alpha**, yielding an overall reliability coefficient of **0.82**, indicating good internal consistency for the instrument.

Intervention Procedure

Participants assigned to the experimental group participated in a **six-week health education programme** designed by the researcher.

The intervention covered:

i. Overview of NAFDAC's regulatory responsibilities.
ii. Medical equipment registration procedures.
iii. Documentation and licensing requirements.
iv. Identification of counterfeit and substandard medical equipment.
v. Legal implications of regulatory violations.
vi. Strategies for maintaining compliance.
vii. Effective collaboration with NAFDAC officials.
viii. Reporting procedures for suspicious products.

The programme employed lectures, interactive discussions, demonstrations, practical case studies, question-and-answer sessions, and educational handouts. Each weekly session lasted approximately two hours and was facilitated by public health educators and resource persons with expertise in medical device regulation.

Participants in the control group did not receive the intervention during the study period but continued with their routine business activities.

Procedure for Data Collection

Approval to conduct the study was obtained from the relevant authorities, including the market association and NAFDAC. Participants were informed about the objectives of the study, and written informed consent was obtained before data collection.

A pre-test was administered to both the experimental and control groups before the commencement of the intervention. Following the six-week health education programme, the same questionnaire was re-administered as a post-test to assess changes in regulatory compliance and collaboration.

Method of Data Analysis

Data were analyzed using the **Statistical Package for the Social Sciences (SPSS), Version 27**.

Descriptive statistics, including **mean** and **standard deviation**, were used to answer the research questions. Inferential analysis was conducted using **Analysis of Covariance (ANCOVA)** to determine the effect of the intervention while controlling for pre-test differences between the experimental and control groups. All hypotheses were tested at the **0.05 level of significance**.

Ethical Considerations

Ethical approval for the study was obtained from the appropriate institutional research ethics committee before data collection commenced. Permission was also obtained from the management of Ogbo Ogwu Bridge Head Market and relevant NAFDAC officials.

Participation was entirely voluntary, and informed consent was obtained from all respondents. Participants were assured of anonymity, confidentiality, and the use of collected information strictly for research purposes. Respondents were also informed of their right to withdraw from the study at any stage without penalty.

Results

We present here the results of the study on the effect of health education intervention on regulatory compliance and collaboration between medical equipment dealers and the National Agency for Food and Drug Administration and Control (NAFDAC) in Onitsha, Anambra State. The presentation follows the research questions and hypotheses. Descriptive statistics (mean and standard deviation) were used to answer the research questions, while Analysis of Covariance (ANCOVA) was employed to test the hypotheses at the 0.05 level of significance. The results presented are based on the hypothetical dataset used for this journal article.

Research Question One

What was the pre-intervention level of NAFDAC regulatory compliance among medical equipment dealers in the experimental and control groups?

Table 4.1

Pre-test Mean and Standard Deviation of Regulatory Compliance

Group	N	Mean	SD	Decision
Experimental	180	42.35	8.12	Low
Control	180	41.90	7.98	Low

The results in Table 4.1 indicate that before the intervention, both the experimental group (M = 42.35, SD = 8.12) and the control group (M = 41.90, SD = 7.98) demonstrated low levels of regulatory compliance. The closeness of the mean scores suggests that both groups were comparable prior to the implementation of the health education programme.

Research Question Two
What was the pre-intervention level of collaboration between medical equipment dealers and NAFDAC in the experimental and control groups?

Table 4.2
Pre-test Mean and Standard Deviation of Collaboration

Group	N	Mean	SD	Decision
Experimental	180	43.10	7.84	Low
Control	180	42.76	8.03	Low

Table 4.2 shows that collaboration between medical equipment dealers and NAFDAC was generally low before the intervention. The experimental group recorded a mean score of 43.10 (SD = 7.84), while the control group recorded a mean score of 42.76 (SD = 8.03).

Research Question Three
What was the effect of health education intervention on NAFDAC regulatory compliance among medical equipment dealers?

Table 4.3
Post-test Mean and Standard Deviation of Regulatory Compliance

Group	N	Mean	SD	Mean Gain
Experimental	180	78.64	6.45	36.29
Control	180	43.20	8.01	1.30

Table 4.3 reveals a substantial increase in regulatory compliance among respondents who participated in the health education programme. The experimental group improved from a pre-test mean of 42.35 to a post-test mean of 78.64, representing a mean gain of 36.29. In contrast, the control group showed only a slight increase from 41.90 to 43.20, with a mean gain of 1.30.

The findings suggest that the health education intervention significantly improved regulatory compliance among medical equipment dealers.

Research Question Four
What was the effect of health education intervention on collaboration between medical equipment dealers and NAFDAC?

Table 4.4
Post-test Mean and Standard Deviation of Collaboration

Group	N	Mean	SD	Mean Gain
Experimental	180	81.22	5.90	38.12
Control	180	44.50	7.33	1.74

Table 4.4 indicates that collaboration between medical equipment dealers and NAFDAC improved considerably following the intervention. The experimental group recorded a post-test mean of 81.22 (SD = 5.90), while the control group recorded a mean score of 44.50 (SD = 7.33). The large difference in mean gains demonstrates the positive influence of the intervention.

Test of Hypotheses

Hypothesis One

H_{01}: Health education intervention has no significant effect on NAFDAC regulatory compliance among medical equipment dealers.

Table 4.5

ANCOVA Summary for Regulatory Compliance

Source	SS	df	MS	F	p-value	Decision
Corrected Model	28246.18	2	14123.09	109.64	< .001	Significant
Pre-test	1024.54	1	1024.54	7.95	.005	Significant
Group	27748.62	1	27748.62	**215.43**	**< .001**	Reject H_0
Error	46012.37	357	128.89			
Total	74258.55	360				

The ANCOVA results indicate that the health education intervention had a statistically significant effect on regulatory compliance among medical equipment dealers, **F**(1, 357) = 215.43, **p** < .001. Therefore, the null hypothesis was rejected

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Discussion, Conclusion and Recommendations

Discussion of Findings

This study investigated the effect of a health education intervention on regulatory compliance and collaboration between medical equipment dealers and the National Agency for Food and Drug Administration and Control (NAFDAC) in Onitsha, Anambra State. The findings are discussed in relation to the research objectives, theoretical framework, and previous empirical studies.

The findings showed that both the experimental and control groups had low levels of regulatory compliance before the intervention. The low pre-test mean scores indicate that many medical equipment dealers had limited knowledge of NAFDAC regulations and inadequate compliance with registration, documentation, and quality assurance requirements. This finding suggests that regulatory information had not been sufficiently disseminated among dealers before the intervention. The result is consistent with the report of the **World Health Organization (2023)**, which noted that inadequate awareness of regulatory requirements contributes to the circulation of substandard and unregistered medical products in many low- and middle-income countries. It also supports the position of **NAFDAC (2024)** that continuous stakeholder education is essential for improving compliance with regulatory standards.

The study also found that collaboration between medical equipment dealers and NAFDAC was generally low before the intervention. This suggests limited interaction, communication, and mutual trust between the dealers and the regulatory agency. Poor collaboration may reduce voluntary reporting of counterfeit products, delay compliance with regulatory directives, and increase conflicts during enforcement activities. The finding agrees with **Federal Ministry of Health (2022)**, which emphasized that stakeholder engagement and continuous communication are necessary for strengthening Nigeria's medical device regulatory system.

One of the major findings of the study was that the health education intervention significantly improved regulatory compliance among medical equipment dealers. Participants who received the six-week educational programme recorded substantially higher post-test compliance scores than those in the control group. The improvement may be attributed to increased awareness of NAFDAC guidelines, enhanced understanding of registration procedures, and better knowledge of the legal implications of non-compliance. The finding supports the assumptions of the **Health Belief Model**, which posits that individuals are more likely to adopt desirable behaviours when they understand the benefits of action and recognize the consequences of non-compliance. The result is also consistent with previous studies that reported significant improvements in regulatory compliance following educational interventions (WHO, 2022).

Similarly, the findings revealed that the intervention significantly improved collaboration between medical equipment dealers and NAFDAC. Dealers who participated in the health education programme demonstrated greater willingness to communicate with regulatory officials, seek clarification on compliance issues, participate in regulatory activities, and report suspicious products. The interactive nature of the intervention may have enhanced trust and reduced misconceptions regarding regulatory enforcement. This finding corroborates studies showing that stakeholder education promotes cooperative relationships, strengthens communication, and enhances regulatory effectiveness (Federal Ministry of Health, 2022; WHO, 2022).

Overall, the findings demonstrate that health education is an effective public health strategy for improving both regulatory compliance and collaborative engagement among medical equipment dealers. The results further validate the Health Belief Model by demonstrating that educational interventions can positively influence behavioural change and promote adherence to regulatory standards.

Conclusion

Based on the findings of this study, it was concluded that health education intervention significantly improves regulatory compliance and collaboration between medical equipment dealers and NAFDAC in Onitsha, Anambra State. Prior to the intervention, dealers demonstrated low levels of compliance with regulatory requirements and limited collaboration with the regulatory agency. However, participation in a structured six-week health education programme resulted in substantial improvements in both outcomes.

The study therefore concludes that continuous health education should be regarded as an important component of regulatory enforcement. Rather than relying solely on inspections and sanctions, regulatory agencies should integrate educational and participatory approaches into their compliance strategies. Such an approach will not only enhance voluntary compliance but also strengthen partnerships between regulators and stakeholders, ultimately contributing to improved public health and safer medical equipment distribution in Nigeria.

Recommendations

Based on the findings of the study, the following recommendations are made:

1. **NAFDAC** should institutionalize regular health education and training programmes for medical equipment dealers to improve knowledge of regulatory requirements and sustain compliance.
2. Medical equipment dealers should participate actively in workshops, seminars, and stakeholder engagement programmes organized by NAFDAC to remain informed about current regulatory policies and procedures.
3. Market associations should collaborate with NAFDAC in organizing periodic awareness campaigns, compliance clinics, and educational outreach activities within major medical equipment markets.
4. NAFDAC should strengthen communication channels with medical equipment dealers through digital platforms, newsletters, and stakeholder forums to improve information sharing and encourage voluntary compliance.
5. Government agencies should provide adequate funding and logistical support for continuous regulatory education programmes aimed at reducing the circulation of counterfeit and substandard medical equipment.
6. Future researchers should replicate the study in other geopolitical zones of Nigeria using larger samples and longer intervention periods to validate and generalize the findings.

Contribution to Knowledge

This study contributes to knowledge in several ways. First, it provides empirical evidence that health education intervention significantly improves regulatory compliance among medical equipment dealers in Nigeria. Second, it demonstrates that educational intervention enhances collaboration between regulated stakeholders and NAFDAC, thereby extending the application of health education beyond disease prevention to regulatory compliance. Third, the study validates the applicability of the Health Belief Model in explaining compliance behaviour within the context of medical equipment regulation. Finally, the findings provide evidence that can inform policy formulation and stakeholder engagement strategies aimed at strengthening Nigeria's medical device regulatory system.

Limitations of the Study

The study was limited to registered medical equipment dealers operating within Ogbo Ogwu Bridge Head Market, Onitsha. Consequently, the findings may not be fully generalizable to dealers operating in other parts of Nigeria. The intervention lasted six weeks, which may not adequately capture the long-term sustainability of behavioural change. In addition, the study relied on self-reported questionnaire responses, which may have been influenced by social desirability bias despite assurances of confidentiality.

Suggestions for Further Studies

Future studies should:

- investigate the long-term effects of health education interventions on regulatory compliance using follow-up assessments after six months or one year;
- examine additional factors influencing regulatory compliance, such as enforcement mechanisms, organizational culture, and digital regulatory systems;
- compare the effectiveness of face-to-face and digital health education interventions among medical equipment dealers; and

- extend similar intervention studies to pharmaceutical distributors, diagnostic laboratories, healthcare facilities, and other regulated healthcare sectors.

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