

Marital Status and Health Insurance: Navigating African Beliefs and Dilemmas on Healthcare Products

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Abstract

The exit of major pharmaceutical companies has created a complex situation in the availability and accessibility of healthcare products, especially in an environment where traditional medicine competes for relevance with orthodox medicine among the poor populace. Dilemmas and beliefs have never been successfully contained against orthodox healthcare products. The study focused on the role of dilemmas and beliefs on the marketability of healthcare products while controlling the influence of marital status and healthcare insurance. A cross-sectional survey was adopted, and 128 responses were collected from healthcare practitioners in rural areas. Correlation and hierarchical regression were adopted in the analysis. Cultural dilemma, cultural belief, and ethical belief were significant predictors of the marketability of healthcare products after controlling for marital status and healthcare insurance. Cultural belief was the strongest predictor among the significant variables. The implication is that cultural beliefs such as opinions on food and diets, learned experiences, and family roles regarding healthcare products affect the marketability of healthcare products.

Keywords: Dilemma, belief, marital status, healthcare products, healthcare insurance.

Introduction

Cultural beliefs and dilemmas are important factors that help to understand the behaviour of people. Shared beliefs and social norms of a society motivate behavioural changes (Sidor et al., 2020) and the conduct of activities of people in a society (Khan & Law, 2018). For instance, cultural elements such as values, norms, and beliefs impact attitude development toward cultural products and purchasing behaviour of Asian consumers (Xing & Yin, 2023) and are connected to the rising mortality rates in developing countries (Oteh et al., 2021). On the other hand, dilemmas are connected to cultures and can provide significant explanations for interpersonal relationships (Xing & Yin, 2023). In healthcare products, they arise when there is a conflict between orthodox products and traditional health products, which may create ethical issues in marketing and challenges in treating diverse populations. The conflict is traced to the introduction of Western healthcare in Africa via colonisation, which created epistemic and ideological frictions (Afolabi, 2020).

In Nigeria, health beliefs and cultural orientations shape the patterns of healthcare because of the traditional settings that are anchored on values, religion, and social structures. Cultural beliefs about illness, spirituality, and traditional healing tend to influence the trust of indigenous Africans in orthodox health products or traditional health products. Extant literature such as

Okpala and Ugwu (2025) shows indigenous people's reliance on traditional health products on grounds of perceived effectiveness, cultural acceptability, and spiritual alignment with the worldview. The challenge arising from such behaviour is the delay in seeking orthodox treatment or subscribing to health insurance schemes (Ugwu & Okpala, 2024). Although there has been an increasing awareness of orthodox practices following the interventions in healthcare, a persistent challenge among Nigerian consumers is the dilemma of choosing between orthodox products and traditional products. For instance, indigenous people tend to prefer traditional products (Mothibe & Sibanda, 2018) even as they are considered harmful (Mordeniz, 2019) compared with the clinical processes of orthodox products. Despite the safety concerns of traditional medicines, African consumers' belief in the efficacy of traditional medicines is making them adopt them in treating several diseases such as malaria and infections (James et al., 2016).

The dilemmas are more apparent in health insurance adoption, where socio-cultural factors such as marital status, religious beliefs, and trust in traditional healing practices influence decision-making. Socio-economic conditions interact with cultural beliefs to create dilemmas in healthcare choices. For instance, Abhadionmhen et al. (2025) reveal the influence of socio-economic constraints and cultural beliefs on medicine choices, decisions, and use in Nigeria. These factors may contribute to scepticism toward health insurance because it is connected to orthodox health solutions. Nigeria has low health insurance coverage rates, with about 90% of households relying on out-of-pocket healthcare payments (Adekunle & Oluwaseyi, 2025). Health insurance adoption in Nigeria is complicated by social roles in marriage and family structures. For instance, health-seeking behaviour of consumers reveals the relationship between social relationships, family influence, cultural expectations, and consumers' behaviour toward illnesses and utilisation of orthodox healthcare services (Salifu & Owoyemi, 2024). Although there are government interventions on health insurance, coverage is uneven given rational economic considerations, cultural values, and family responsibilities and roles, such as marital status, that determine social influence and financial obligation in healthcare decision-making (Okpala & Ugwu, 2025). Thus, the dilemma between African belief systems and modern healthcare products represents a complex interaction of culture, economics, and social structure.

Given these realities, evaluating African beliefs and the dilemma surrounding healthcare products is important, especially given the rate at which pharmaceutical companies have been exiting the Nigerian business environment recently. The study investigates how cultural beliefs and dilemmas influence health behaviour towards healthcare products, with a focus on controlling the effect of health insurance adoption. The exploration of these relationships will contribute to broader discussion on how socio-cultural factors shape health behaviour in African countries and provide insight for designing culturally sensitive health policies and products that will improve health utilisation.

Literature Review

Healthcare Products and Health-Seeking Behaviour

Healthcare products encompass orthodox products, health insurance services, and traditional remedies for treating ailments. Healthcare utilisation depends on a complex interaction of cultural beliefs (Oteh et al., 2021), socioeconomic and demographic factors (Abhadionmhen et al., 2025), and health insurance services (Adekunle & Oluwaseyi, 2025). For instance, the Andersen Behavioural model of health service utilisation reveals how predisposing factors such as beliefs, culture, and marital status; enabling factors such as income, health insurance, and access to

healthcare facilities; and need factors such as perceived illness severity impact an individual's health-seeking behaviour (Andersen, 1995). The model helps determine the conditions that assist or impede health care utilisation (Andersen & Newman, 1973), and its flexibility makes it applicable across diverse locations and situations (Alkhawaldeh et al., 2023). In Nigeria, the uptake of health insurance is determined by economic, social, and cultural realities that shape the need for orthodox health products and risk perceptions (Adekunle & Oluwaseyi, 2025).

African Belief System and Traditional Health Products

African belief has a connection to the interpretation of diseases because the system tends to interpret diseases through spiritual, moral, or cultural perspectives, leading to choices oscillating between traditional solutions and orthodox healthcare services. These beliefs create a dilemma for individuals (Oteh et al., 2021) when choices are made in line with culturally familiar health practices and the medical system. Cultural beliefs and socioeconomic factors influence the choice of indigenous people for traditional health services (Abhadionmhen et al., 2025). The resort to herbal practices is revealed in some cases to be a cause of poor engagement of indigenous people to formal healthcare delivery (Adewuyi et al., 2017). Extant literature reveals that factors such as cultural norms, affordability, and trust in indigenous healing practices influence the preference for herbal and spiritual treatment (Asakitikpi, 2019). Traditional medicines are widely used in Africa because of their perceived cultural acceptability, accessibility, and alignment with cultural values even when orthodox health products are available (Bamidele et al., 2009). Cultural beliefs influence perceptions of the causes of illness, especially in Africa, where it is attributed to supernatural forces (Biswal et al., 2017), destiny, and the inability of the individual to see the relevance of orthodox treatment, thereby reinforcing reliance on traditional health products (Asakitikpi, 2019). The belief-driven behaviour contributes to a persistent gap between health policy objectives and actual healthcare utilisation in Nigeria (Agunyai et al., 2025). The implication is that cultural beliefs, norms, and practices shape healthcare outcomes (Okeme et al., 2024).

Health Insurance and Orthodox Healthcare

Health insurance is an avenue designed to mitigate the out-of-pocket expenses on medicines and improve access to healthcare facilities and the quality of healthcare. It functions as a health product and moderating factor that can influence cultural beliefs and healthcare utilisation. Individuals with health insurance are more likely to patronise orthodox healthcare solutions even when traditional beliefs exist because of the reduction in financial barriers (Adekunle & Oluwaseyi, 2025). In Nigeria, it influences health accessibility, although its adoption is still very low (Adebola, 2020; Adekunle & Oluwaseyi, 2025). However, the state of health insurance is saddled with supply-side failures such as poor enrollment arising from an optional enrollment policy, inadequate financing, and a poor legal framework (Azeez et al., 2021).

Marital Status and Healthcare Decision-Making

An individual's marital status is connected to their state of health. For instance, Zhao et al. (2022) revealed that although married individuals have better health, higher subjective well-being, and lower mortality, unmarried, divorced, and widowed individuals have poorer health and higher mortality. Social causation theory can explain the influence of marital status on health, while the selection theory can explain how health is impacted by marital status (Pengpid et al., 2024). In

healthcare behaviour in Africa, marital status also has an important role to play because of its ability to determine responsibility, financial planning, and social influence. Married individuals make collective decisions regarding family health and well-being, and this may influence preference for orthodox healthcare solutions. For instance, marital status influences healthcare decision-making behaviour in healthcare insurance (Adekunle & Oluwaseyi, 2025), although traditional beliefs are central to healthcare in Nigeria to the extent of impacting patients' behaviour and outcomes of healthcare (Okeme et al., 2024). Married people may be compelled by social pressure to be responsible for family members' health, thereby resorting to orthodox health products, whereas the unmarried may rely on peer influence, traditional practices, and personal belief in making decisions regarding health products. In extant cases, the high cost of orthodox treatment, family pressure, and societal pressure compel people to seek alternative treatment (James et al., 2018). Therefore, marital status may act as a control variable where it influences belief orientation and access to healthcare resources as well as the relationships between cultural belief and use of healthcare products, given that there may be differences between married and unmarried individuals' responses to healthcare products (Pandey et al., 2019).

Dilemma Between Beliefs and Orthodox Health Products

A dilemma occurs when there are two or more alternatives and the best choice needs to be made between the options, which often differ between individuals (Figar & Dordevic, 2016). When it comes to healthcare products, the decision on choice borders on two morally right options, as consumers tend to make choices amidst conflicting alternatives (Oteh et al., 2021). The results are often seen in the buyer's trade-off choices, although there is evidence of younger adults' preference for products with superior ratings (von Helversen et al., 2018). Thus, the coexistence of traditional health products and orthodox health products creates a dilemma. While government policies are promoting universal health coverage and participation in health insurance (Adekunle & Oluwaseyi, 2025), cultural norms and beliefs are encouraging indigenous people's reliance on traditional health products and family-based care (Abhadionmhen et al., 2025; Siatwiko & Nkhata, 2025). Consequently, the dual system creates an inconsistency in healthcare behaviour such that individuals in need of healthcare may use orthodox treatment in severe cases but also depend on traditional remedies for minor diseases. As a result, marketers are tempted to ignore the influence of dilemmas with lesser influence despite the impact on the patronage of the health product (Oteh et al., 2021). This ignores the reality of products reflecting cultural elements, as consumers' expressions often reflect cultural elements (Fahimeh et al., 2016; Oteh et al., 2021). Extant literature reveals that although cultural trust in traditional medicine causes low adoption of orthodox healthcare products amidst the availability of health insurance, the influence of belief systems and social influences may discourage healthcare utilisation (Adekunle & Oluwaseyi, 2025; Abhadionmhen et al., 2025). This reveals the interacting roles of cultural belief, health insurance, and marital status in shaping an individual's healthcare behaviour.

Existing literature has examined cultural beliefs, health insurance, and demographic factors separately and discovered significant effects on health behaviour (Abhadionmhen et al., 2025; Adekunle & Oluwaseyi, 2025), but a few studies have integrated them into a single framework. There is limited research that explains how African belief influences the use of healthcare products while controlling for the effect of the confounding variables (health insurance and marital status). Therefore, the understanding of this relationship is important for designing culturally sensitive health policies and targeted interventions that can improve healthcare utilisation and behaviour.

Following the discourse, the questions include:

- R1: What is the nature of the relationship that connects marketing of healthcare products to marital status and health insurance?
- R2: To what extent does marketing of healthcare products relate to the dilemmas and beliefs?
- R3: How do dilemmas and beliefs influence the marketing of healthcare products after controlling the influence of marital status and health insurance?

Methodology

A quantitative survey approach was adopted in conducting the research. Adult healthcare practitioners who participated in the survey were 18 years and above and were intercepted at primary healthcare facilities in Nigeria. This included student nurses, chemists, pharmacists, interns, and resident doctors. The questionnaire instrument was designed in a structured format and scaled based on a 5-point scale that ranges from strongly disagree to strongly agree, with a rating of 1 to 5. Preliminary checks were followed using the expertise of a panel of eight health professionals consisting of healthcare practitioners and lecturers to check the initial reliability of the questions for the purpose and validity of the research instrument. This was approached through face validity and content validity ratio (CVR) recommended by Taherdoost (2016) and adopted in similar studies on healthcare (Oteh et al., 2021; Oloveze et al., 2021). The CVR value of 0.75, representing the return of seven essential inputs from a panel of eight, confirms the validity of the instrument. The administration of the questionnaire was done using purposive non-probability sampling by intercepting the respondents at the primary health centres and healthcare facilities such as pharmacies. Informed consent was secured before the involvement of the participants in the survey, while ethical standards were strictly adhered to in data collection, as clearance was obtained from the Department of Marketing Research Ethics Committee of Michael Okpara University of Agriculture, Umudike, and the respondents were informed of the purpose of the research, their voluntariness in being part of the research, and their right to withdraw at any stage without any consequence; maintenance of confidentiality and anonymisation of the responses; secure storage of the data; and sole use of the data for the intended purpose. The analysis was executed through SPSS v23 using hierarchical regression. It is useful in determining any significant variance in a dependent variable after controlling for the confounding variables, added in sequential blocks (Kim, 2016). Hierarchical regression facilitates the test of multiple predictors on the outcome variable after accounting for control variables (Ross et al., 2017). It informs the most significant predictors and provides the direction for interventions (Lobo & Normand, 2014) while also being able to model the nested nature of data (Madadzadeh & Akhondi, 2025) and provide useful insight on complex interactions (Cohen et al., 2013). Essentially, it controls for interdependency in different hierarchical levels while also identifying the modifiers and mediators (Madadzadeh & Akhondi, 2025). It has been employed in public health studies (Madadzadeh & Akhondi, 2025) and in studies on wellbeing and self-rated health among older adults (Badri et al., 2021).

Statistical Approach

The correlation was assessed through Pearson correlation. The formula is indicated as:

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

where:

N = Number of pairs of scores

$\sum x$ = Sum of x scores

$\sum y$ = Sum of y scores

$\sum xy$ = Sum of the product of paired scores

$\sum x^2$ = Sum of the squared x scores

$\sum y^2$ = Sum of the squared y scores

Values range from -1 to +1, where +1 is a perfect positive correlation and -1 is a perfect negative correlation, while 0 is an indication of no correlation between variables.

In controlling for the confounding variables, the statistical formula is indicated as:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \epsilon \quad 1$$

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_{n+1} Z_1 + \beta_{n+2} Z_2 + \beta_{n+3} Z_3 + \beta_{n+4} Z_4 + \epsilon \quad 2$$

Where

Y = Marketability of healthcare product β_0 = Estimated intercept

$\beta_1 - \beta_2$ = Estimated slope

$X_1 - X_2$ = control variables (X_1 = healthcare insurance; X_2 = marital status)

X_1 = healthcare insurance: 0 = No health insurance; 1 = Has health insurance

X_2 = marital status: 0 = Single; 1 = Married

$Z_1 - Z_4$ = main predictor variables (Z_1 - cultural belief; Z_2 - ethical belief; Z_3 - cultural dilemma; Z_4 - ethical dilemma)

Z_1 - cultural belief: Measured using a 5-point Likert scale

Z_2 - ethical belief: Measured based on a 5-point Likert scale

Z_3 - cultural dilemma: Measured based on a 5-point Likert scale

Z_4 - ethical dilemma: Measured based on a 5-point Likert scale

ϵ = Residual (the difference between observed and predicted value)

Results

155 responses were collected, but 128 were used after screening the data for appropriateness and completeness. This represented about an 82.8% response rate. The reliability of the instrument was statistically assessed through construct reliability, as illustrated in Table 1. Construct reliability is considered robust and a precise estimate of reliability because it uses each question item score to estimate reliability.

Table 1: Construct Reliability Test

SN	Variable	No. of items	Variable score	Minimum Reference	Decision
1	Cultural belief	5	.78	.70	Satisfied
2	Ethical belief	3	.72	.70	Satisfied
3	Cultural dilemma	5	.88	.70	Satisfied
4	Ethical dilemma	3	.71	.70	Satisfied

Assessment of the Nature of Relationship

The correlation was assessed through multiple correlation as indicated in Table 2. The marital status, health insurance, dilemma (cultural and ethical dilemma), and beliefs (cultural and ethical belief) were examined for correlation with marketing of healthcare products. Marital status negatively correlates with the marketing of healthcare products at 10% given the p-value ($p < 0.1$). The relationship is also weak. Health insurance is also negatively correlated with the marketing of healthcare products at 5% given the p-value ($p < 0.05$). The result also shows a weak relationship. Generally, both socio-demographic variables have an inverse relationship with the marketing of healthcare products. The relationship of dilemma through cultural dilemma and cultural dilemma shows mixed results. While cultural dilemma has a significant positive correlation with the marketing of healthcare products with $p < 0.01$, despite the strength of the relationship being weak, the ethical dilemma does not have any significant correlation with the marketing of healthcare products given the p-value. However, the belief variable ascertained through cultural belief and ethical belief had a positive correlation with the marketing of healthcare products. Cultural belief is positively related to the marketing of healthcare products, with $p < 0.01$, and the relationship indicates a moderate strength compared with the others. Ethical belief is also positively related to the marketing of healthcare products, given the p-value ($p < 0.01$). However, the strength of the association is weaker compared to the cultural belief. Generally, the results of dilemmas and belief reveal a direct correlation with the marketing of healthcare products. The indication is that dilemma and belief have a positive relationship with the marketing of healthcare products, unlike marital status and healthcare insurance.

The result of the mean (.34) and standard deviation (SD) (.567) for marital status reveals 34% married participants and 66% single participants in the sample, thereby showing a greater presence of participants who are single. The SD reveals the existence of diversity and moderate variability in the marital status distribution. The mean (.56) of health insurance indicates 56% of participants have health insurance, while 44% have no health insurance, thereby proving a slight majority have health insurance in the sample. The SD (.498) confirms moderate variability in the responses, indicating fair representation of insured and uninsured in the sample. The mean (3.586) of cultural dilemma confirmed a high level of experience regarding cultural dilemma and a general agreement on the influence of cultural dilemma. The SD (.438) shows low variability, thereby confirming that participants' views on cultural dilemma were fairly close to each other, as well as indicating higher similarity of opinions and consistency about cultural dilemma. The mean (3.543) of ethical dilemma also confirms a positive perception of ethical dilemma. While implying to be relatively important and noticeable among the participants, the SD (.630) not only reveals moderate variability in the opinions but also indicates the existence of differences in perception despite sharing fairly similar opinions on ethical dilemmas. The mean (3.672) of cultural belief indicates that participants in the study hold a general positive view about cultural belief,

particularly in having an influence and importance among them. The SD (.543) indicates moderate variability, suggesting relatively similar perceptions and degrees of consistency in their opinions regarding cultural beliefs. The mean (3.677) of ethical belief suggests the participants in the sample have a strong acknowledgement and value of ethical beliefs, while the SD (.473) indicates low variability, suggesting a fair similarity in opinions that confirms high degrees of consistency in their views about ethical beliefs. The mean (3.707) of healthcare product marketing indicates that participants in the study considered it an important issue, while the SD (.600) indicates moderate variability, suggesting the existence of fair similarity in views but also differences in the views.

Table 2: Correlation Estimate

	Pearson correlation	Sig. (1-tailed)		
	Healthcare product marketing		Mean	Standard deviation
Marital status	-0.130	.072	.34	.567
Health insurance	-0.182	.020	.56	.498
Cultural dilemma	0.203	.011	3.586	.438
Ethical dilemma	0.089	.159	3.543	.630
Cultural belief	0.442	.000	3.672	.543
Ethical belief	0.244	.003	3.677	.473
Healthcare product marketing	-	-	3.707	.600

Model Evaluation

The model's goodness-of-fit was evaluated through R^2 , while the adjusted R^2 was used to compare the models. R^2 is useful in the measurement of the extent of variance that exists in the outcome variable that is explained by the predictor. It helps to reveal the goodness-of-fit of a model, with higher values indicating a better fit (Kandel, 2025). With the adjusted R^2 , it provides the basis for model comparison, evaluation of the improvement of the model with additional predictors, and mitigating against overfitting in models, especially multiple regression models (Kandal, 2025). Model 1 (.061) and Model 2 (.302) in Table 3 are significantly low. While Model 1 shows only about 6.1% predicted variance in the marketability of healthcare products by the predictors, Model 2 shows 30.2% explained variance in the marketability of healthcare products following the additional predictors. Although the R^2 is low, Frost (2019) and Oteh et al. (2023) suggest that it is still a good model, especially in studies dealing with human behaviour, given the existence of inherent unexplainable variability in human behaviour. The adjusted R^2 indicates the existence of changes between the models. Model 2 is an improved model with the included predictors as confirmed through the R^2 change (.241).

The change statistics (Model 1, F: 4.056; Model 2, F: 10.437) further validate the model, as it confirms the overall significance of the regression model given the p-values that are below 5%. The results indicate that the predictors collectively explain a significant level of variance in the marketability of healthcare products. The values of Durbin-Watson (2.140) indicate non-detection of serial correlation, thereby confirming that the residual values are independent.

Table 3: Model Evaluation

Model	R	R ²	Adjusted R ²	Std. error	R ² change	Change Statistics			Sig. F Change	Durbin-Watson
						F	Change	df1	df2	
1	.247	.061	.046	.586	.061	4.056		2		.020
2	.549	.302	.267	.514	.241	10.437		4		.000

Evaluating Control Variables' Effect on Dilemma and Beliefs

The evaluation of the controlling effect of marital status and healthcare insurance on dilemma and beliefs was assessed through hierarchical regression. Existing literature already confirms the influence of marital status on health (Markey et al., 2005; Aneja & Yu, 2016; Pandey et al., 2019) and the effect of health insurance on health outcomes (Fan et al., 2023; Mathur, 2021), but less is known about dilemma and beliefs, especially in the aftermath of the exit of major pharmaceutical companies in Nigeria. Established knowledge about dilemma and beliefs was prior to the exit of the pharmaceutical companies. Additionally, the previous studies, such as Oteh et al. (2021), focused on Likert scale assessment. To control for marital status and health insurance, the control variables in the study—marital status and healthcare insurance were entered in block 1 as the baseline predictors/control variables, while the predictors of primary interest were entered in block 2—dilemma (cultural dilemma and ethical dilemma) and beliefs (cultural beliefs and ethical beliefs), as indicated in Table 3. Therefore, to identify the significant factors predicting marketing of healthcare products after controlling for the baseline model containing the control variables, marital status and healthcare insurance, Model 2 was given attention. Beliefs that include cultural belief ($\beta = .449$; $p < 0.01$) and ethical beliefs ($\beta = .237$; $p < 0.05$) were significant, while only cultural dilemma ($\beta = .195$; $p < 0.1$) was significant in predicting the marketing of healthcare products after controlling for marital status and healthcare insurance. The evaluation of multicollinearity among the predictors through the collinearity statistics in Table 4 confirmed the non-existence of multicollinearity among the predictors. The tolerance index accounts for a predictor's variance that is not explained by other predictors in the model, while the variance index accounts for the inflation of a regression coefficient's variance due to multicollinearity. The tolerance values and variance scores for each of the predictors were always within range (general rule of thumb to flag for concern: tolerance < 0.2 ; variance > 5 or 10), suggesting the predictors were not highly correlated and are suitable for inclusion in the hierarchical regression model.

Table 4: Analysis

Model	Unstd. coeff		Std. coeff	t	Sig.	Collinearity statistics	
	Beta	S.E				Tolerance	Variance
1. Constant	3.914	.090		43.707	.000		
Marital status	-.180	.093	-.170	-1.926	.056	.965	1.037
Healthcare insurance	-.258	.106	-.214	-2.423	.017	.965	1.037
2. Constant	1.087	.530		2.053	.042		
Marital status	-.193	.084	-.183	-2.301	.023	.914	1.094
Healthcare insurance	-.231	.096	-.192	-2.397	.018	.901	1.110
Cultural dilemma	.195	.117	.142	1.668	.098	.797	1.254
Ethical dilemma	-.114	.084	-.119	-1.351	.179	.739	1.352
Cultural belief	.449	.086	.406	5.199	.000	.946	1.057
Ethical belief	.237	.106	.187	2.238	.027	.827	1.209

Discussion

The study evaluated African beliefs and dilemmas while controlling for the influence of marital status and healthcare insurance. Correlation and hierarchical regression were used to analyse the effect of beliefs and dilemmas on the marketability of healthcare products while controlling for the influence of marital status and healthcare insurance. The adjusted R-square justified the existence of changes between the models, proving model 2 to have better predictive power. Generally, only cultural dilemma, cultural beliefs, and ethical beliefs significantly influence the marketability of healthcare products, while cultural beliefs had the strongest comparative effect.

First, cultural dilemma is positively related to the marketability of healthcare products. The result suggests that a unit increase in cultural dilemma positively increases the marketability of healthcare products by .195 units, holding other variables constant. The result aligns with the study of Oteh et al. (2021) based on the positive rankings of indicators of cultural dilemma. Comparatively, cultural dilemma is the weakest link in the marketability of healthcare products with a standardised coefficient (.142). The implication is that conditions such as the willingness to discuss symptoms with the health practitioner, accessibility of healthcare facilities and needed healthcare resources, family dynamics such as family patterns, and perception of illness are instrumental in the marketability of healthcare products. Additionally, the marketing of healthcare products in environments with a strong culture creates cultural dilemmas, especially in creating a balance between health claims and local culture. Therefore, pharmaceutical brands and healthcare product marketers must navigate the dilemma by following the positive opinions in the study area. This calls for aggressive communication strategies that drive adoption while respecting the cultural norms and traditions on health, authority, and privacy. In some cases, the challenge is the standardisation of healthcare products across markets where cultural norms are strong.

Second, cultural belief is positively related to the marketability of healthcare products, thereby suggesting that a unit increase in cultural belief positively influences the marketability of healthcare products by .449 units, holding other variables constant. Comparatively, cultural belief had the strongest effect on the marketability of healthcare products given the standardised coefficient result (.406). The result is consistent with extant literature (Workneh et al., 2018), such as in traditional beliefs on illness being linked to cultural causes (Oteh et al., 2021). The implication is that cultural beliefs such as opinions on food and diets, learned experiences, and

family roles regarding healthcare products affect the marketability of healthcare products. The beliefs influence health, illness, and treatment perception. When the belief system favours orthodox health products, there is a tendency for an increase in marketing of orthodox health products. This is similar to the cultural perception of the primary health authorities, such as religious leaders and indigenous healers, which dictates the effectiveness of health campaigns with their endorsement. Consequently, the marketability of healthcare products would depend on understanding local cultural elements such as language and symbols and family dynamics in messaging and promotional materials.

Third, ethical belief positively influences the marketability of healthcare products. A unit increase in ethical belief positively influences the marketability of healthcare products by .237 units, holding other variables constant. It is comparatively stronger than cultural dilemma in influencing the marketability of healthcare products, given the standardised coefficient (.187). The result corroborates extant literature (Oteh et al., 2021) while also indicating the critical roles of the provision of accurate healthcare messages and information, ethical marketing practices, and confidentiality treatment in the marketability of healthcare products. The implication is that ethical beliefs and the marketability of healthcare products are intertwined. For instance, misleading marketing practices and campaigns affect brand loyalty. Respecting consumer autonomy and trust is important. Similarly, evidence-based messages and information about healthcare products facilitate the building of consumer trust and brand reputation. In other words, ethical beliefs call for pharmaceutical companies and healthcare product marketers to be transparent and adhere to consumer autonomy and regulatory provisions that protect the vulnerable population.

Conclusion

Marital status and healthcare insurance are established factors in the literature that affect the marketability of healthcare products. The present study focused primarily on controlling for the effects in the estimation of the effects of dilemmas and beliefs on the marketability of healthcare products. Cultural dilemma, cultural belief, and ethical belief are major factors, while the effect of ethical dilemma was not confirmed, contrary to the reports of Oteh et al. (2021). The real comparable effects proved that cultural belief is the strongest factor that affects the marketability of healthcare products.

Recommendations

The study recommended the following:

1. There is a need for a culturally responsive approach to healthcare product adoption given the significant influence of cultural dilemma, cultural belief, and ethical belief on healthcare product decisions even after controlling for marital status and healthcare insurance. Therefore, healthcare providers, policymakers, and marketers should move beyond purely economic and demographic interventions, implying that greater emphasis should be placed on culturally sensitive communication, community engagement, and culturally competent healthcare delivery to reconcile consumers' traditional belief systems with evidence-based healthcare practices.
2. Policymakers should promote dialogue between traditional and modern healthcare systems, while greater attention should be given to cultural and psychological factors, since cultural beliefs and dilemmas and ethical dilemmas remained significant after controlling for marital status and healthcare insurance.

3. There is a need to develop culturally adapted healthcare marketing strategies by segmenting consumers according to cultural beliefs and ethical dilemmas, and not just across demographic features. Marketing campaigns should emphasise cultural relevance, safety, efficacy, and trust. In addition, strengthening culturally competent healthcare professionals is essential, as it will enable the understanding of how African beliefs shape healthcare decisions.
4. It is important to engage traditional and community influencers to bridge the gap between cultural belief systems and evidence-based healthcare, and integrating cultural beliefs into health education is essential to address culturally rooted beliefs about illness, treatment, medicines, and healthcare products. This is essential in aligning cultural belief systems with evidence-based healthcare.
5. There is a need to develop culturally sensitive healthcare products and communication, such as the design of product information and advertising, to recognise African cultural beliefs and healthcare practices rather than dismissing them. This will improve the confidence of consumers in healthcare products.

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