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Complementary and Alternative Medicine Use among Dermatology Outpatients in Southeastern Nigeria: A Tertiary Hospital Study

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Authors' contributions

This work was carried out in collaboration among all authors. Author ACC conceived the study, drafted and edited the manuscript. Authors OCI and ENA participated in the data collection. Author EOI revised the draft substantially. Author MDE performed the statistical analysis and managed the analyses of the study. Author NJC wrote the protocol. All authors read and approved the final manuscript.

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ABSTRACT

Background: Complementary and Alternative Medicine (CAM) is widely used globally, including among dermatology patients. CAM includes different practices not typically part of conventional medicine and is classified into five categories, including biologically based therapies and mind-body interventions. Despite its popularity, little is known about CAM usage patterns among dermatology outpatients in Southeastern Nigeria.

Aim: This study aimed to assess the prevalence, the sociodemographic characteristics of dermatology outpatients using CAM and reasons for its usage.

Study Design: Cross-sectional study.

Place and Duration of Study: Nnamdi Azikiwe University Teaching Hospital (NAUTH), Nnewi, Anambra State, Nigeria, between August to November 2022.

Methodology: We recruited 212 dermatology outpatients through convenient sampling. Data were collected using interviewer-administered structured questionnaires capturing sociodemographics, dermatological conditions, and CAM usage patterns.Data analysis was performed using SPSS™ Version 23.0, with chi-square tests determining associations between variables at a significance level of $P < 0.05$.

Results: Among 212 participants recruited, the prevalence of CAM use was 34.4%. The median age was 28 years, and more females (56.1%) than males (43.9%) used CAM. Acne (17.8%), psoriasis (16.4%), and mycoses (11%) were the most common conditions among CAM users. Biologically based therapies, particularly plant-based products like aloe vera, were the most frequently used CAM. Family recommendations (16%) and perceived safety (12.3%) were key reasons for CAM use. CAM usage was significantly associated with longer disease duration ($P < .001$).

Conclusion: The high prevalence of CAM use among dermatology outpatients in Southeastern Nigeria highlights the need for clinicians to recognize and consider alternative therapies in patient care. Understanding the patterns of CAM use can also guide clinicians in advising patients on safe and evidence-based alternatives. Future research on the efficacy and safety of CAM in dermatology is crucial to develop comprehensive, evidence-based treatment strategies that encompass both conventional and complementary therapies.

Keywords: Complementary and alternative medicine; dermatology; dermatology outpatients; Nigeria.

1. INTRODUCTION

Complementary and Alternative Medicine (CAM) is becoming increasing popular in developing countries and its use is steadily increasing across developed world (Merican, 2002). CAM is defined by the National Center for Complementary and Alternative Medicine (NCCAM) in the United States as 'a group of diverse medical and health care systems, practice and products that are not presently considered to be a part of conventional medicine'(Fan, 2005). Complementary medicine refers to the use of complementary and alternative medicine (CAM) in conjunction with conventional care while alternative medicine is the practice of using complementary and alternative medicine (CAM) in lieu of conventional treatment.

CAM is classified into 5 categories: 1. Alternative medical systems such as homeopathy, naturopathy, traditional healers. 2. Mind-body interventions such as meditation, prayer and spirituality. 3. Biologically based therapies such as herbs, dietary supplements, diet-based therapies. 4. Manipulative and body-based methods such as massage therapy and chiropractic. 5. Energy therapies such as magnetic therapy, light therapy (Fan, 2005).

There is a growing trend toward integrative medicine, which incorporates both conventional and CAM therapies that have been shown to be harmless and effective (Kalaaji et al., 2012). Patients with skin diseases are not an exception. Previous studies have proven that CAM is used by patients with dermatologic disorders such as atopic dermatitis, acne vulgaris, psoriasis and hidradenitis suppurativa (Ahmad et al., 2017; Damevska et al., 2014; Holm et al., 2019; Price et al., 2020). Ernst reported that the proportion of dermatology patients who used CAM ranged from 35% to 69% with homeopathy, herbalism and food supplements ranking the most frequently used. In a multi-center study done in

the United Kingdom showed that 45% to 50% of their dermatologic outpatients used CAM for their skin conditions.(Ernst, 2000) However, in a retrospective, cross-sectional study carried out in the southwestern Nigeria, it noted that 5% of patients used indigenous therapies (Anaba & Oaku, 2019).

CAM use is particularly significant for dermatology patients in Nigeria. In many Nigerian communities, traditional medicine, a subset of CAM, is deeply rooted in cultural practices and often serves as one of the first line of treatment for various ailments, including skin conditions. The perception that CAM, particularly herbal remedies, is natural and free from side effects further increases its appeal. Additionally, the economic burden of conventional therapies, often encourages patients to explore more affordable and culturally accepted CAM options. Understanding the interplay of these factors is important to contextualizing CAM usage in Nigerian dermatology and this highlights the need for culturally sensitive and integrative treatment approaches.

Despite the growing popularity of Complementary and Alternative Medicine (CAM) worldwide, research on its use in dermatology remains unclear, particularly in sub-Saharan Africa, where cultural and societal influences remarkably affect healthcare practices. Globally, studies have reported varying CAM prevalence rates among dermatology patients, with significant differences in usage patterns, reasons, and perceptions across regions (Al-Atif et al., 2022; Baron et al., 2005; See et al., 2011; Younis et al., 2024). However, comprehensive data connecting sociodemographic factors to CAM use, especially in dermatology, remain sparse. In Nigeria, the existing literature is limited. This study seeks to address these gaps by providing a detailed analysis of CAM use among dermatology outpatients in southeastern Nigeria. By comparing local findings with global trends, it aims to contribute to the growing body of evidence, offering insights that can inform regional healthcare policies.

The objectives of this study were to explore the usage of CAM in dermatological outpatients, to investigate the reasons for their use, and to evaluate the group's sociodemographic characteristics.

2. METHODOLOGY

2.1 Study Design

This was a hospital based, cross sectional study to examine the usage of CAM in patients attending the Dermatology Clinic of Nnamdi Azikiwe University Teaching Hospital, Nnewi (NAUTH), Anambra State, Nigeria. The study was carried out between 1st August 2022 and 31st November 2022. Participants for recruitment were males and females presenting to the dermatology clinic of NAUTH. Convenient sampling method was employed where participants were recruited consecutively as they present to the clinic.

2.2 Inclusion Criteria For Participants

Patients who have been clinically diagnosed with dermatologic condition and those who give informed written consent.

2.3 Exclusion Criteria For Participants

1. Participants who decline consent

2.4 Sample Size

The sample size for this study was determined with the Cochran's formula:

$$N = \frac{Z^2pq}{d^2}$$

where N is the minimum sample size:

z is the standard normal deviate (1.96) at 95% confidence level.
p is the prevalence of skin diseases in Mali (11.7%)(Mahe et al., 1997)
q= 1-p
d is the degree of precision and will be set at 5% (0.05)

$$N = \frac{1.96^2 \times 0.117 \times 0.883}{0.0025}$$

N = 158.75

To compensate for a non-response, the formula is used

$$n_s = {}^{n}/_{a}$$

Where

n_s = sample size to be selected
n = original calculated sample size
a = anticipated response = 90%

Calculation: n_s = 158.75/0.9 = 176.39 = 176 (to round it off to a whole number)

2.5 Study Method

The questionnaire used in this study was adapted from previously validated instruments designed for assessing CAM usage (AlGhamdi et al., 2015; Fuhrmann et al., 2010). It was reviewed by the study researchers to ensure content validity and relevance to the study's objectives. A pilot test was conducted with 10 participants who were not part of the final study sample to assess clarity, reliability, and feasibility, and necessary adjustments were made before full-scale implementation.

2.6 Protocol

Questionnaires were administered by the researchers and information such as biodata, the dermatologic condition being managed and its duration, the usage for CAM, the reasons of usage of CAM and the type of CAM used by the patient was obtained. For patients less than 16 years, the questionnaire was answered by the parents of the patients.

2.7 Data Management

Data generated from the questionnaires was entered directly into the statistical software, Statistical Package for Social Sciences (SPSS ™) Version 23.0 (SPSS Inc., Chicago, Illinois, USA). These data were treated confidentially and codes were assigned to the different variables.

2.8 Data Analysis

The data was analyzed and presented using the Statistical Package for Social Sciences (SPSS™) Version 23.0 (SPSS Inc., Chicago, Illinois, USA). Continuous variables were reported as mean and standard deviation if they were not normally distributed and as median and interquartile range. The categorical data were reported using frequencies and percentages. Variables was examined for missing data and outliers prior to analysis.

The attitude level was calculated by scoring the 5 items presented in the attitude table and converting this to percentage. Each item was scored from 1 to 5 points; thus, the maximum obtainable score was 25 (5 items times 5). The percentage was calculated as the score obtained divided by 25 times 100. The obtained percentage was categorized into low positive (score <50%) and high positive attitude (=>50%). Chi-square test of association was used to test for relationships between categorical variables and the level of significance was set at $P < 0.05$.

3. RESULTS

A total number of 212 patients completed the questionnaire. 119 (56.1%) females and 93 (43.9%) males. The median age for the study participants was 28 years. Table 1 shows the sociodemographic distribution of the participants. The majority of CAM users and non-CAM users were in the 21-40 age range, suggesting that younger adults are more likely to seek dermatological care. The three commonest conditions seen among CAM users were acne (17.8%), psoriasis (16.4%), and mycoses (11%) (Table 2). Comparatively, non-CAM users also reported acne (12.2%) as the most common condition, followed by mycoses (10.1%) and pityriasis versicolor (7.2%). Of the 212 participants, 73 (34.4%) had used CAM for their current dermatological condition while 139 (65.6%) did not use CAM. Table 3 shows the duration of the use of CAM and awareness and usage patterns of CAM among patients. There is high awareness about CAM among patients but about a third (34.4%) actually use it. The duration of CAM use ranges widely but most have been using it for less than 5 years. Tables 4 and 5 show the distribution of CAM therapies used by patients. Table 4 indicates that plant-based products were the most commonly used biologically based practices among dermatology patients, with 28.3% reporting use of at least one, aloe vera being the most popular (8.0%). Other notable categories include vitamins, used by 8.5% of participants (Vitamin C being the most frequent at 4.2%), and miscellaneous products like local soap, used by 12.7%. Table 5 shows that following the biologically based practices, alternative medicine systems were the most commonly used CAM modalities, with 8.0% of participants using at least one, primarily neuropathy (7.5%). Manipulative and body-based practices (3.8%) and mind-body medicines (3.3%), including prayer and spirituality, were less frequently utilized. Table 6 outlines the reasons for the use of CAM. The primary reasons for using CAM included recommendations by family and friends (16%), the perception that there is no harm in trying CAM (12.3%), and the availability of CAM (5.7%). Interestingly, only a small percentage cited dissatisfaction with conventional treatments

(4.7%) or cost-related reasons (4.2%). Table 7 shows the patients attitude towards CAM. Table 8 showed the perceptions and behaviors regarding the use of CAM. Most respondents (75.9%) prefer to rely solely on modern medicine, with a smaller proportion (17.5%) open to integrating CAM and modern medicine. Table 9 presents the association between the duration of disease and the use of CAM. There was a significant association between the duration of the dermatological condition and the use of CAM ($P < .001$). Participants with conditions lasting more than six months were more likely to use CAM (45.6%) compared to those with conditions of six months or less (14.5%). Table 10 reveals that there is no significant association between sociodemographic factors such as age, gender, marital status, education level, and occupation with the use of complementary and alternative medicine (CAM) (all p-values > 0.05). However, a significant association was found between the duration of illness and CAM use, with individuals who had been ill for more than 6 months being more likely to use CAM ($p < 0.01$). Additionally, the attitude towards CAM did not significantly influence its use.

Table 1. Sociodemographic characteristics between CAM users and non-CAM users

		CAM users	Non-CAM users	X^2	*P* value
		n (%)	n (%)		
Age range	<=20	15(29.4)	36(70.6)	1.40	0.71
	21-40	37(37.8)	61(62.2)		
	41-60	13(31)	29(69)		
	61-80	8(38.1)	13(61.9)		
	Median (interquartile range)	28(22-44)	28(20-45)		
Gender	Male	31(33.3)	62(66.7)	0.09	0.77
	Female	42(35.3)	77(64.7)		
Marital status	No answer	5(25)	15(75)	2.34	0.67
	Single	43(35.5)	78(64.5)		
	Married	21(33.3)	42(66.7)		
	Widowed	3(60)	2(40)		
	Divorced	1(33.3)	2(66.7)		
Highest Level of Education	None	5(38.5)	8(61.5)	5.66	0.13
	Primary	12(29.3)	29(70.7)		
	Secondary	27(46.6)	31(53.4)		
	Tertiary	29(29)	71(71)		
Occupation	Unemployed/students	50(32.7)	103(67.3)	2.13	0.55
	Petty trader/ laborer/ messenger	12(35.3)	22(64.7)		
	Junior school teachers/ artisan	0(0)	1(100)		
	Junior civil servants/senior school teacher	11(45.8)	13(54.2)		

Table 2. Top five dermatological conditions in CAM users versus non-CAM users

CAM Users		Non-CAM users	
Condition	N(%)	Condition	N(%)
Acne	13(17.8)	Acne	17(12.2)
Psoriasis	12(16.4)	Mycoses	14(10.1)
Mycoses	8(11)	Pityriasis versicolor	10(7.2)
Urticaria	5(6.8)	Urticaria	9(6.5)
Atopic dermatitis	4(5.5)	Atopic dermatitis	7(5)

Table 3. Duration of CAM usage and participants' knowledge and use of CAM

		Frequency	Percent
Duration of use (years)	<=1	24	32.9
	>1-5	36	49.3
	>5	13	17.8
	Mean±STD	4.75±5.62	
Aware of CAM	Yes	162	76.4
	No	50	23.5
Ever used CAM	Yes	73	34.4
	No	139	65.6
Frequency of use	No answer	4	5.5
	Irregularly	21	28.8
	Daily	43	58.9
	Weekly	4	5.5
	Monthly	1	1.4
	Total	73	100

Table 4. Distribution of use of biologically based practices

		Frequency	Percent
Vitamins	Vitamin C	9	4.2
	Vitamin E	5	2.4
	Vitamin B	2	0.9
	Vitamin A	2	0.9
	Uses at least one	18	8.5
Other supplements	Gingko	1	0.5
Plant based products	Aloe Vera	17	8.0
	Herbal concoction (unlabeled)	12	5.7
	Turmeric	10	4.7
	Shea butter	7	3.3
	Plant water	7	3.3
	Ginger	7	3.3
	Coconut Oil	6	2.8
	Lemon Juice	5	2.4
	Olive Oil	5	2.4
	Green Tea	5	2.4
	Garlic	5	2.4
	Agbo	1	0.5
	Moringa seeds	1	0.5
	Carrot oil	2	0.9
	Uses at least one	60	28.3
Regular food in special use	Honey	7	3.3
	Yogurt	1	0.5
	Egg	2	0.9
	Palm oil	1	0.5
	Turmeric and Milk	1	0.5
	Uses at least one	12	5.7
Miscellaneous	Local soap	27	12.7
	Snake oil	1	0.5
	Uses at least one	28	13.2

Table 5. Distribution of use of other CAM modalities

		Frequency	Percent
Alternative Medicine systems	Naturopathy	16	7.5
	Homeopathy	1	0.5
	Uses any	17	8.0
Manipulative and body-based practices	Massage	3	1.4
	Hydraulic oil	2	0.9
	Yellow stone	1	0.5
	Nzu (Local Chalk)	1	0.5
	Ash	1	0.5
	Uses any	8	3.8
Mind body medicines	Creative outlet: music therapy	1	0.5
	Prayer and spirituality	6	2.8
	Uses any	7	3.3

Table 6. Reasons for use of CAM

		Frequency	Percentage
Reason	Recommended by family and friends	34	16.0
	There is no harm in trying	26	12.3
	It is very available	12	5.7
	Dissatisfaction with conventional treatment	10	4.7
	It is cheaper	9	4.2
	Prefer treatment with natural agents	7	3.3
	To strengthen one's immune system	5	2.4
	Prefer treatment with natural agents	4	1.9
	To avoid side effects of medications	3	1.4
	Recommended by doctor	1	0.5

Table 7. Attitude towards CAM

	N/A	SD	D	N	A	SA
	n(%)	n(%)	n(%)	n(%)	n(%)	n(%)
Questions						
CAM is safer than modern medicine	8(3.8)	82(38.7)	28(13.2)	74(34.9)	11(5.2)	9(4.2)
CAM is more effective than modern medicine	9(4.2)	86(40.6)	38(17.9)	59(27.8)	11(5.2)	9(4.2)
CAM can interact with other medications	13(6.1)	18(8.5)	20(9.4)	64(30.2)	31(14.6)	66(31.1)
CAM should be combined with modern medicine	10(4.7)	100(47.2)	22(10.4)	50(23.6)	16(7.5)	14(6.6)
CAM is more affordable than modern medicine	9(4.2)	35(16.5)	27(12.7)	57(26.9)	30(14.2)	54(25.5)
Attitude	N	%				
Negative (<50%)	59	29.2				
Positive (=>50%)	143	70.8				
Mean ± St.Deviation	55.12±10.89					

Keys: N/A= No answer, SD= strongly disagree, D= disagree, N= neural, A= somewhat agree, SA= strongly agree

Table 8. Perceptions and behaviors regarding the use of CAM

		Frequency	Percent
Possibility of future use of CAM	No answer	74	34.9
	Yes	51	24.1
	No	87	41
What do you think about the use of CAM or modern medicine	No answer	12	5.7
	Better to use modern medicine only	161	75.9
	Better to use CAM and modern medicine together	37	17.5
	Better to use CAM only	2	0.9
Do you ever consult your doctor before using CAM	No answer	135	63.7
	Always	63	29.7
	Rarely	2	0.9
	Sometimes	10	4.7
	Often	2	0.9

Table 9. Association between duration of disease and use of CAM

		Ever used CAM				
		Yes	No	Total	X^2	*P*
		n(%)	n(%)	n(%)	20.91	< .001
Duration of disease	<= 6months	11(14.5	65(85.5)	76(100)		
	>6months	62(45.6)	74(54.4)	136(100)		

Table 10. Association between sociodemographic profile and use of CAM

		Yes	No	X^2	p-value
		n(%)	n(%)		
Age range	<=20	15(29.4)	36(70.6)	1.40	0.71
	21-40	37(37.8)	61(62.2)		
	41-60	13(31)	29(69)		
	61-80	8(38.1)	13(61.9)		
	Median (interquartile range)	28(22-44)	28(20-45)		
Gender	Male	31(33.3)	62(66.7)	0.09	0.77
	Female	42(35.3)	77(64.7)		
Marital status	No answer	5(25)	15(75)	2.34	0.67
	Single	43(35.5)	78(64.5)		
	Married	21(33.3)	42(66.7)		
	Widowed	3(60)	2(40)		
	Divorced	1(33.3)	2(66.7)		
Highest Level of Education	None	5(38.5)	8(61.5)	5.66	0.13
	Primary	12(29.3)	29(70.7)		
	Secondary	27(46.6)	31(53.4)		
	Tertiary	29(29)	71(71)		
Occupation	Unemployed/students	50(32.7)	103(67.3)	2.13	0.55
	Petty trader/ laborer/ messenger	12(35.3)	22(64.7)		
	Junior school teachers/ artisan	0(0)	1(100)		
	Junior civil servants/senior school teacher	11(45.8)	13(54.2)		
Duration of illness	<= 6months	11(14.5)	65(85.5)	20.91	<0.01
	>6months	62(45.6)	74(54.4)		
Attitude	Negative	17(28.8)	42(71.2)	1.46	0.22
	Positive	54(37.8)	89(62.2)		

4. DISCUSSION

CAM is extensively used in developed and developing countries and several studies have been carried out to investigate the use of CAM among dermatology outpatients in these places.

This study included 212 patients with a median age of 28 years, comparable to the study by Daye et al., where the mean age was also 28 years (DAYE et al., 2020).

In our study, 34.4% of the patients were CAM users. This is higher than the study of Anaba and Oaku which reported that 5% of their dermatology outpatients used herbal treatment (Anaba & Oaku, 2019). This discrepancy may be explained by their study design, which was a cross-sectional retrospective, and the fact that herbal treatment is a subsection of CAM, therefore not entirely representative. A study in Turkey reported the prevalence of CAM use was 16.8% (Demirci & Altunay, 2014). In the United Kingdom, CAM use among dermatological outpatients was reported as 45% and 50% in Yorkshire and Swansea, respectively (Baron et al., 2005). Singapore documented a CAM usage rate of 25.7% among dermatology outpatients, while Egypt and Saudia Arabia reported prevalence values of 59.8% and 57.8% respectively (Al-Atif et al., 2022; See et al., 2011; Younis et al., 2024). The differences could be due to societal attitudes towards health care and treatment modalities.

There was a female preponderance among CAM users in our study, consistent with other studies (Al-Atif et al., 2022; Fuhrmann et al., 2010; Gohil, 2020; Sivamani et al., 2014; Younis et al., 2024). No significant difference was seen between CAM users and non-CAM users in regarding age, gender, marital status, education, and occupation. This suggests that the use of CAM is not strongly influenced by these sociodemographic factors in our population. However, this contrasts with the findings of Eman Ali Younis and See et al., who reported that CAM usage was more common among individuals with tertiary education (See et al., 2011; Younis et al., 2024). On the other hand, Dasteghib noted that CAM usage was prevalent among the non-literate population (Dastgheib et al., 2017).

There was a significant association between the duration of disease and the use of CAM. CAM users tended to have a longer disease duration compared to non-CAM users. Two possible explanations for this are that individuals may turn to CAM after experiencing prolonged use of modern medicine without satisfactory results, or they may seek modern medical care only after relying on CAM for a period of time. This observation aligns with findings from several studies (Al-Atif et al., 2022; AlGhamdi et al., 2015; Dastgheib et al., 2017; See et al., 2011).

In our study, the three most common disease conditions observed among CAM users were acne, psoriasis, and cutaneous mycoses. This is in concordance with the study conducted in Turkey (DAYE et al., 2020). Acne, in particular, was among the top three skin conditions observed in CAM users, a result corroborated by our study as well as those by Gohil and See et al (Gohil, 2020; See et al., 2011). The explanation for this could be because of the high prevalence of acne and its chronic nature.

Biologically based therapies were the most popular CAM among our dermatology outpatients. This is similar to the findings in Egypt, Iran, and Saudi Arabia (AlGhamdi et al., 2015; Dastgheib et al., 2017; Younis et al., 2024). The reasons for this popularity may include their accessibility and availability, as well as the perception that they are safe and harmless. However, they can interact with conventional medications and potentially cause dermatitis. Among the biologically based therapies, we observed that plant-based products were the most commonly by dermatology outpatients. This was similar to the findings in the studies done in the US and UK (Baron et al., 2005; Kalaaji et al., 2012; Sivamani et al., 2014). In the Middle East, the use of herbal therapies is popular among dermatology outpatients and these therapies have even been incorporated into their National Health Services (AlGhamdi et al., 2015; El-Gendy, 2005). Of the plant-based products, aloe vera was the most frequently used, a finding supported by an Indian study (Gohil, 2020). In contrast, studies from Turkey and Saudi Arabia reported olive oil as the most commonly used product (Al-Atif et al., 2022; DAYE et al., 2020). Closely following aloe vera was herbal concoction , which the participants did not know all the constituents of this mixture. Regarding the use of vitamins as CAM among dermatology outpatients, we found that vitamin C was notably popular and this agrees with Kalaaji et al in the US (Kalaaji et al., 2012).

The commonest reason for the use of CAM among its users was that it was recommended

by family and friends. This was followed by the belief that there was no harm in trying it. This is similar to the findings of Gohil et al where the majority of the participants reported that they used CAM based on recommendations from family and friends (Gohil, 2020). In contrast, studies from Saudi Arabia, Singapore, and the United Kingdom found that the primary reason for CAM use among participants was that modern medicine was perceived to be ineffective (Al-Atif et al., 2022; Baron et al., 2005; See et al., 2011). Additionally, a study in Egypt by Eman Ali Younis observed that the most frequent reason for CAM use was that it had no side effects (Younis et al., 2024). These differences can be attributed to the interplay of sociocultural beliefs, accessibility to healthcare and differences in study design.

Regarding consultation of doctors before usage of CAM, a little below one-third of the participants said they always informed their doctors before using CAM. AlGhamdi, in their study, noted that the majority of CAM users did not ask their doctors prior to using CAM (AlGhamdi et al., 2015). Their reasons were that they felt no need to tell their doctors. This may be due to the negative perception of doctors towards CAM.

The attitude of dermatology outpatients towards the use of CAM, as reported in Egypt, showed that more than 75% had a positive attitude (Younis et al., 2024). This is similar to our study, where we found almost three-quarters of our patients have a positive attitude towards CAM. This is because attitudes are often shaped by personal experiences or recommendations from close ones.

Regarding the possible use of CAM in the future, about a quarter of our participants reported they will use CAM in the future. However, in the study by AlGhamdi, they found that a greater proportion were willing to use CAM in the future (AlGhamdi et al., 2015). This could be attributed to the desire for an alternative option in case modern medicine fails.

The majority of dermatology outpatients in our study expressed a preference for using modern medicine alone, which differs from the findings of the Egyptian study where CAM users advocated for a combination of CAM and modern medicine (Younis et al., 2024). These may be attributed to sociocultural beliefs.

Based on the findings of this study, several recommendations can be made for dermatology outpatients regarding the use of complementary and alternative medicine (CAM). Dermatologists should prioritize patient education by discussing the potential benefits and risks of CAM in routine consultations, especially for patients with chronic dermatologic conditions. Integrating CAM as an adjunct to conventional treatments may be beneficial, particularly for those with longer illness durations who are more inclined to explore alternative options. Furthermore, further research on the safety, efficacy, and patient satisfaction with CAM therapies should be conducted to establish evidence-based guidelines.

Comparative studies examining the effectiveness of CAM versus conventional treatments could provide valuable insights into the role of CAM in managing chronic illnesses. Furthermore, exploring healthcare professionals' perspectives on CAM could help bridge the gap between alternative therapies and conventional medical practices.

5. CONCLUSION

This study highlights the use of Complementary and Alternative Medicine (CAM) among dermatology outpatients. With 34.4% of participants using CAM for their dermatological conditions, the study identifies biologically based therapies, particularly plant-based products like aloe vera, as the most commonly used CAM. Sociodemographic factors such as age, gender, and education did not significantly influence CAM usage, although a longer disease duration was associated with higher CAM use. These findings are consistent with global trends but also reveal unique cultural and regional patterns in the use of CAM.

DISCLAIMER (ARTIFICIAL INTELLIGENCE)

Author(s) hereby declare that NO generative AI technologies such as Large Language Models (ChatGPT, COPILOT, etc) and text-to-image generators have been used during writing or editing of this manuscript.

CONSENT

Written informed consent was obtained from all participants before enrollment, and for participants under 16 years of age, consent was provided by their parents or legal guardians. Confidentiality was maintained throughout the

study by anonymizing participant data and securely storing all information.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by Nnamdi Azikiwe University Teaching Hospital Ethical Committee (NAUTHEC) and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki. The study number is NAUTH/CS/66/VOL 15/VER 3/068/2022/039.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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