



If we build it, they will come: Caregiver decision to use an accessible outpatient psychiatric service for children and adolescents in Nigeria

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ARTICLE INFO

Keywords:

Child
Adolescent
Mental health
Psychiatric
Parents
Africa
Nigeria
Indigenous

ABSTRACT

Objective: If child and adolescent psychiatric (CAP) services were accessible in lower-middle-income countries (LMIC) such as Nigeria, what individual and socio-cultural factors would influence caregivers' willingness to use these services when they are needed?

Methods: To address this question, we conducted structured interviews with a stratified random sampling of 442 adult caregivers of children aged 5 to 19-years who lived within 10 km of an established CAP outpatient service in Ibadan, Nigeria.

Results: Based on structural equation modeling, our cross-sectional findings indicated that caregivers were generally willing to use the accessible outpatient CAP service for a narrow range of overtly disruptive and developmentally atypical child behavior. However, their decisions were not influenced by their recognition of child and adolescent mental health (CAMH) conditions, competing life stressors, caregiver wellness, nor stigma as we had initially hypothesized. Rather caregivers pragmatically considered a range of approaches to address CAMH concerns. Post-hoc hypotheses confirmed that caregivers' beliefs about etiology and treatment effectiveness for CAMH conditions shaped their help-seeking decisions and stigmatization of CAP services. Specifically, caregivers who attributed CAMH conditions to physical causes regarded biomedical interventions as the most effective treatment while spiritual interventions were deemed to be the least effective.

Conclusions: Taken together our results suggested that caregivers were receptive and willing to use outpatient psychiatric services for their children. However, their beliefs about the etiology and treatment effectiveness of CAMH conditions shaped how they intended to engage the services. These findings underscored the importance of scaling up a broader spectrum of accessible complementary CAMH intervention and prevention services in Nigeria that extend beyond indigenous or biomedical models. In doing so caregivers will come.

1. Introduction

In lower-middle-income countries (LMIC) such as Nigeria where child and adolescent mental health (CAMH) services are available but limited, caregivers' willingness to utilize treatment for their children with mental health conditions is essential. Their decisions are influenced by a recognition of their children's mental health (MH) conditions (Zwaanswijk et al., 2007), beliefs about the etiology of CAMH

conditions, and attitudes towards treatment (Abera et al., 2015; Atilola, 2017). Caregivers' experiences and anticipation of being stigmatized for having a child with a MH condition can also discourage them from seeking services. Furthermore, many families living in LMIC face concurrent life stressors that compete with their child's MH needs. Despite well-documented needs to address barriers to treatment for CAMH conditions – namely availability and proximity of services (Awoyemi et al., 2011) – it remains unclear how these socio-cultural and individual

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factors interact to influence caregivers' decision to utilize the few CAMH services that are accessible. An anticipatory understanding of factors that influence caregivers' willingness to utilize accessible services will guide the development of theoretically driven and locally informed interventions to optimize CAMH care in regions where services remain underutilized. In this paper, CAMH services refer to outpatient psychotherapeutic and psychopharmacological interventions that are informed by a biomedical model of illness and adapted to a Nigerian context.

1.1. CAMH in Nigeria

Despite the well-documented need to address CAMH needs in Nigeria the provision of services has been hampered by the scarcity of age-appropriate mental health facilities, inadequate training of service providers, and the lack of political will (O. Omigbodun, 2008). Findings from 38 upper-middle to low-income countries including Nigeria, indicated that the vast majority of children and adolescents with mental health conditions remain unattended, with the median one-year treated prevalence for children and adolescents at 159 per 100,000 population compared to 664 per 100,000 for the adult population as of 2005 (Morris et al., 2011). Notwithstanding the well-established gap between CAMH needs and resource availability, no studies to our knowledge have examined how these complex factors potentially interact to influence the utilization of CAMH services if they are available and accessible. In the section that follows, we review several of these factors.

1.2. Caregiver Recognition of CAMH conditions

Parental *recognition* of CAMH conditions and the *perception* that their children's symptoms are sufficiently severe to warrant CAMH services are critical first steps in the help-seeking process (Teagle, 2002). Yet, problem recognition and perception are influenced by parental beliefs about the etiology of their child's MH condition (Yeh et al., 2004). In many African countries, parents do not necessarily subscribe to the biomedical model of mental illness. Several qualitative studies in Ethiopia (Abera et al., 2015) and Kenya (Kamau et al., 2017) have indicated that parents were more inclined to link CAMH conditions with supernatural phenomena and family-related stressors. Beliefs in supernatural and biopsychosocial causation of mental illness are often held concurrently in Nigeria (Atilola and Ola, 2016). Multiple beliefs about the etiology of CAMH conditions not only imbue meaning to mental health but also influence caregivers' help-seeking decisions. For example, in a study of 242 children (<18-yo) receiving services at a mental health clinic in northeast Nigeria, 36% sought and received services from traditional/religious healers before utilizing services at the clinic (Abdulmalik and Sale, 2012). Despite common references to socio-cultural etiologies of CAMH problems in Nigeria, no studies have examined whether or how these beliefs influence caregivers' engagement with CAMH services. Moreover, studies in Nigeria have examined community perceptions of mental illness in general without a focus on CAMH conditions (Gureje et al., 2005; Ikwuka et al., 2016).

1.3. Stigma and CAMH services

Previous studies in Nigeria have consistently documented negative perceptions of persons with mental illness, and attributions of mental illness to divine retribution, supernatural attack, and illicit psychoactive substance use, particularly in rural communities (Ojagbemi and Gureje, 2020; Okpalauwaekwe et al., 2017). Persons with mental illness were generally perceived as dangerous, aggressive, and a threat to civic order, and hence socially devalued. Culturally based attitudes about seeking treatment or folk remedies are rooted in core beliefs about mental illness causation. Despite strong evidence that links beliefs about adult mental illness with supernatural factors in Nigeria, there are significant gaps in understanding how these negative attributions affect help-seeking behavior for CAMH conditions.

Research on the stigmatization of CAMH conditions is also far less prevalent. Several studies have recently examined the indirect effects of CAMH stigma on caregivers. Many parents and family caregivers experience stigmatization on account of their children with MH conditions, and often feel blamed by others and themselves for their children's behavior (Moses, 2010). Parents experienced "courtesy stigma" and self-blame for causing or failing to prevent their child's MH condition (Corrigan and Miller, 2004). The stigma of utilizing CAMH services also engendered avoidance or delay in care because it further implicated parental failure or a lapse in the caregiver's spiritual fidelity and resolve (Mukolo et al., 2010).

1.4. Caregiver well-being and CAMH services

Previous research on the potential link between caregiver wellness and child mental health service utilization in high-income countries has been equivocal. Several studies have indicated that parental psychopathology (Verhulst and van der Ende, 1997) and distress markers (Z. S. Patel et al., 2020) were not associated with mental health service referrals for children. Yet, contrarian findings have shown that children of parents who were treated for mental health problems were two to five times more likely to receive child or adolescent mental health services compared to children of parents without mental health challenges (Olfson et al., 2003; Plass-Christi et al., 2017). Some posit that parental familiarity with the mental health service system and their children's clinical presentation would facilitate more frequent engagement with CAMH services (Logan and King, 2001). Although no studies to our knowledge have empirically examined these plausible determinants of CAMH treatment decisions in LMIC, several have implicated how parental exposure to socio-economic and environmental stressors bear on help-seeking decisions for CAMH problems. This issue is particularly relevant in Nigeria where the national Multidimensional Poverty Index indicated that 54% of the population lived in conditions of multidimensional poverty (MP) with an additional 18% being vulnerable to MP in areas of education, health, and standard of living (Conconi, 2014). Although the effects of these toxic stressors on child outcomes are well-established, there is less clarity on how they influence CAMH service utilization. Findings in the United States (US) have indicated that stressors commonly experienced by families in low-income neighborhoods (Bornheimer et al., 2018; Chacko et al., 2017) impede consistent engagement with child mental health services. Few notable studies have implicated that caregiver hopelessness heightened by the cumulative demands and immediacy of environmental shocks (e.g., crowded housing, lack of finances) downplays the urgency of prioritizing their children's mental health care needs (V. Patel et al., 2018). Taken together, investigation of the extent to which caregivers' overall well-being in LMIC sway help-seeking decisions remains scant.

Our study augments an impressive body of descriptive studies by empirically testing a model that examines interactive pathways of socio-cultural and individual factors that influence caregivers' willingness to utilize accessible CAMH services in Nigeria. Based on interviewing a stratified two-stage cluster sample of adult caregivers of children younger than 18-years-old living within 10 km from the University College Hospital (UCH), we hypothesize:

H_1 : High caregiver stigma for CAMH conditions (perceived stigma towards services and families affected by CAMH problems) is associated with less willingness to use accessible CAMH services at UCH in Ibadan (herein referred to as CAMH services);

H_2 : Poor caregiver wellness (health, subjective well-being, and attitude about the future) is associated with less willingness to use CAMH services;

H_3 : High caregiver CAMH stigma and poor caregiver wellness are independently associated with less *recognition* of their children's mental health conditions and lower *perceived need* for CAMH services. This, in turn, decreases their willingness to use CAMH services; and

H_4 : Experiencing more competing life stressors is associated with the

caregiver's lower perceived need for CAMH services which in turn decreases their willingness to use CAMH services.

2. Methods

2.1. Participants & procedure

We used mixed multi-stage stratified random sampling and residential blocks as sample units to recruit participants who lived within an accessible distance (10 km) from the Child & Adolescent Psychiatric Clinic (CAPC) at UCH the only public specialized mental health facility for children in Ibadan. Most of the patients are from Ibadan townships and villages in the Western part of the country, an area covering a radius of about 150 miles. The CAPC for children and adolescents (0–17-years) was established in 2000 (O. Omigbodun, 2004). As of 2016, 554 children received outpatient services (306 male, 248 female) that included mental health assessments, psychological interventions, psychopharmacological treatment, and liaison services to inpatient care. The cost of services ranges from ₦1500 to ₦3000 (i.e., approximately less than \$8 USD). The CAPC staff consists of 4 child and adolescent psychiatrists, 4 senior psychiatry residents/fellows, four psychiatric nurses, two community health nurses: one social worker, an occupational therapist, and a visiting clinical psychologist. Common reasons for visits included poor academic performance, developmental delay, adolescent mood disorders, and psychotic disorders.

In Stage 1, we identified 143 localities within 10 km from UCH and these localities were further categorized into high density (HD), medium-density (MD), and low density (LD) residential neighborhoods based on the spatial proximity of buildings. Local government area

(LGA) boundaries were then overlaid on this neighborhood map. Quantum GIS was used to randomly select localities in each of the high, medium, and low-density neighborhood categories in each of the 10 LGA. A total of 26 localities were selected for study recruitment (See Fig. 1). In each locality, interviewers purposively selected one major road. In Stage 2, the first residential building was then purposively selected for study recruitment followed by every fourth residential building until 10 households completed the interview for each locality (only one household that met study criteria was selected from each residential building that contained multiple family units). Due to the logistic challenges of recruiting households from LD neighborhoods at the end of the recruitment period (January 2020), we randomly over-sampled households from MD and HD neighborhoods to meet the sampling target.

Participant inclusion criteria were: (1) 18-years and older; (2) caregivers of children < 18-years-old who lived at home; (3) spoke Yorùbá (local language) or English; and (4) knew about the availability of MH services at CAPC. Participants received an incentive of 5 USD to complete the interviews. Interviewers who earned BSc or MSc degrees and had previous research interviewing experiences (four men and four women) were trained to conduct a 60- to 90-min individual survey in Yorùbá and English, with intermittent breaks as needed. Validated instruments from published studies were translated from English to Yorùbá by a translator and back-translated to English by another independent translator. During post-interview debriefing meetings, interviewers discussed how to effectively address participant questions about child behavior and emotional states that were less familiar in a Nigerian context. Interviewers used handheld mobile devices to administer the surveys. An open-source online data collection system in

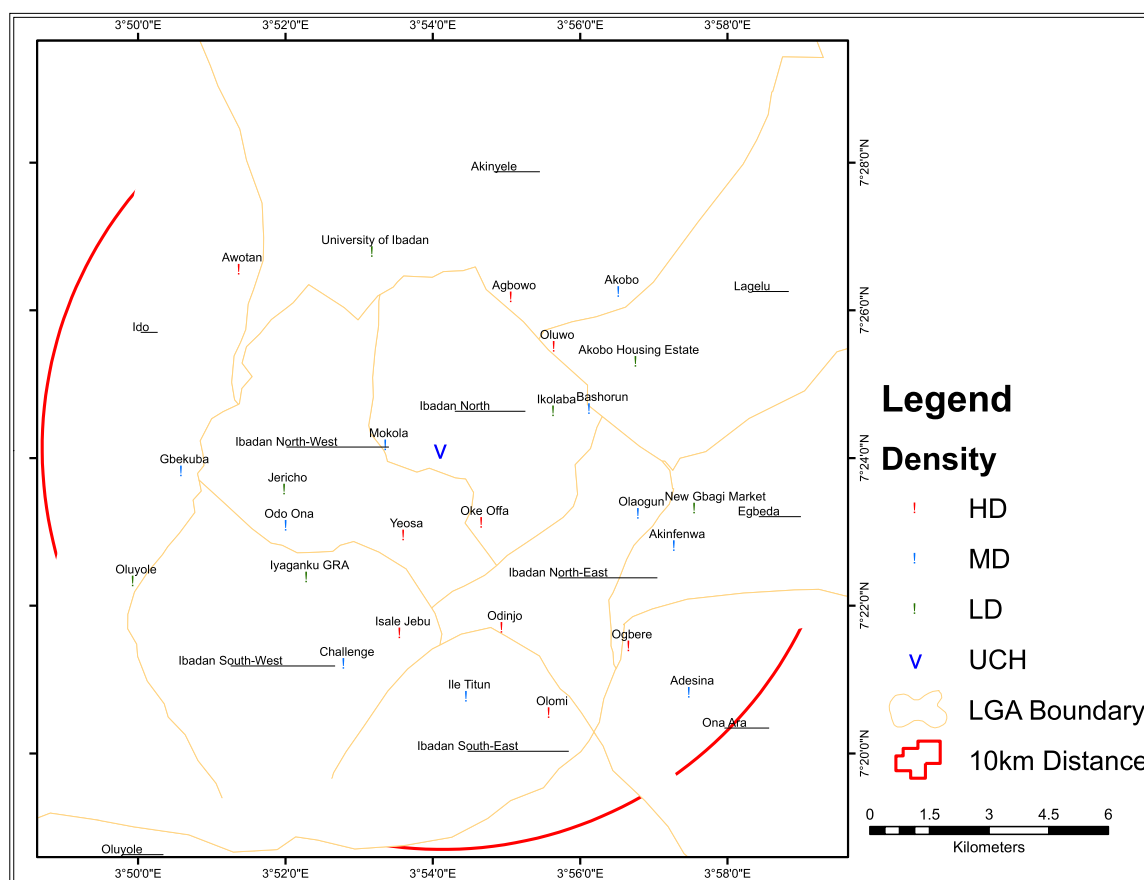


Fig. 1. Sampling localities 10 km from the University College Hospital in Ibadan.

KoboToolBox was used to collect the interview data which was temporarily saved on each device and synchronized with a cloud server once a connection to the internet was re-established in the research office. The Institutional Review Boards at Howard University and the College of Medicine at the University of Ibadan approved this study.

3. Measures

We translated the survey questionnaire into Yorùbá, examined discrepancies with translation reports, and pretested the instrument with a convenience sample of 40 adult caregivers in Ibadan (16 who received services at CAPC; 24 caregivers from the community). Based on semantic, idiomatic, and conceptual discrepancies, we modified the survey, we specifically addressed concerns about the length of the interview, the necessity of repetitive questions, and descriptions of behavior and emotions that were less familiar in the Nigerian context. During the pilot, we observed that most respondents had selected extremes on the Likert scale. To address concerns about the comprehensibility of Likert-type questions, we created visual analog scales on placards with circles of increasing or decreasing sizes that indicated scaled responses. Participants pointed to circles that corresponded to their responses to questions during the interview, which further shortened the administration time.

3.1. Dependent variable

Caregivers' willingness to use accessible CAMH service was adapted from a study examining child mental health service utilization among parents in rural Appalachia (S. L. Williams and Polaha, 2014). Caregivers were asked "If my child experienced a mental health condition such as Dapo, Tola, and Moji [fictional characters with Depressive Disorder, Attention-Deficit/Hyperactivity Disorder (ADHD), and Psychotic Disorder in a previously administered section. See Beliefs About Treatment and Etiology of CAMH conditions below], I would take my child to see a healthcare provider at the mental health clinic for children and adolescents at UCH" (1 = Not at All, 6 = Definitely).

3.2. Independent variables

Caregiver Recognition of CAMH Problems. This was assessed by the Yorùbá version of the Strengths and Difficulties Questionnaire – Parent Report (SDQ-P; Goodman et al., 2000), a 25-item screening measure of emotional and behavioral problems for children aged three to 17-years extensively used in Africa (Hoosen et al., 2018). The SDQ-P utilized a three-point Likert scale (0 = not true; 1 = somewhat true; 2 = certainly true). Five subscales were derived from the measure including conduct problems, inattention-hyperactivity, emotional symptoms, peer problems, and prosocial behavior. A total score was calculated by summing the subscales with higher scores indicating more recognition of CAMH problems (range = 0–50). In this study, Cronbach's α was 0.61.

Perceived Need for CAMH Services. Adapted from the 2001 National Survey of Children with Special Health Care Needs in the US (Porterfield and McBride, 2007), we asked caregivers: "Has there been a time in the past year when your child/any of your children (1) seemed sad and did not feel like doing anything over two weeks (yes/no)? (2) not able to sit still or concentrate for long, always getting into trouble (yes/no)? (3) displayed strange public behavior such as talking or laughing to themselves when no one is around (yes/no)? (4) behaved in any way or reported feeling anyway that worried them, you, or others in your family or community?" If caregivers affirmed any of the four statements, they were subsequently asked: "During the past 12 months, was there any time when your child needed help because you were worried about the problems you just described? (yes/no)" Responses to the final question (0 = no; 1 = yes) were used to determine the perceived need for CAMH services.

Stigma Toward CAMH Services. We used the Parents' Perceived

Stigma of Service Seeking Scale (PPSSS), an 18-item scale developed to measure parents' perceptions of mental health services for their children in rural Appalachia (S. L. Williams and Polaha, 2014). Caregivers indicated how much they agreed with perceptions about CAMH services on a six-point Likert scale (1 = strongly disagree, 6 = strongly agree) with higher scores indicating higher stigma. Cronbach's α was 0.88.

Stigma Toward Families Affected by CAMH Problems. We adapted the *Attitudes About Child Mental Health Questionnaire (ACMHQ; Helflinger et al., 2014)*, a 30-item survey that assessed perceived child dangerousness, general stereotypes, community devaluation, and personal attitudes towards children with CAMH problems and their families in a rural community in the US. Each item was scored on a six-point Likert scale (1 = strongly disagree, 6 = strongly agree) with higher scores indicating higher stigma. Two subscores were calculated for stigma towards families (13 items) and child (17 items) with Cronbach alphas of 0.73 and 0.78, respectively.

Contact with Persons with Mental Illness. To measure the degree of contact with persons with mental illness, a recognized determinant of stigma, we administered the Levels-of-Contact Report (Holmes et al., 1999), an 11-item list of varying degrees of interaction with individuals with severe mental illness. Participants indicated all statements from a list that best depicted their level of contact ranging from low (rank order = 1; "I have never observed a person with a severe mental illness") to high (rank order = 11; "I have a mental illness"). A total score was calculated with higher scores indicating more intimate contact.

Beliefs about Etiology of CAMH conditions. Categories of caregiver beliefs about biopsychosocial, social, and spiritual causes of CAMH problems were assessed by the Beliefs About the Causes of Child Problems – Parent Version (BCCP-P; Yeh and Hough, 1997), a 45-item semi-structured questionnaire validated with caregivers of youths (6-17-yo) receiving public services in the US (Yeh et al., 2004). Caregivers indicated whether they believed that their child's problem [stated in the previous section] was caused, at least in part, by physical (nine-items); personality (five-items); social skills (four-items); trauma (three-items); parenting style (seven-items); peer influence (four-items); financial stressors (four-items); and religious (nine-items) reasons. Subscores for each etiology category were calculated by summing the dichotomized responses for each item (0 = no; 1 = yes), with higher scores indicating higher endorsement.

Beliefs About Treatment and Etiology of CAMH conditions. Three fictional vignettes were developed by the Ibadan research team to represent aggregated backgrounds of children (Dapo, Tola, and Moji) they have treated for Depressive Disorder, ADHD, and Psychotic Disorder symptoms (Adejumo, 2014). Adapted from the General Social Survey administered to households in the US (Pescosolido et al., 2008), the interviewers read each vignette followed by asking caregivers to indicate on a Likert scale (1 = very likely, 4 = not at all likely) how likely the mental health condition depicted in the vignette was caused by 8 etiologies (e.g., "by the way he/she was raised") and 10 treatment approaches (e.g., "read religious text to child). Three etiology subscores (physical, family/environmental, and religious) and two treatment subscores were calculated (medical/physical, and religious) for each of the CAMH symptom clusters – depression, ADHD, and psychotic symptoms. Lower scores indicated greater endorsement.

Caregiver Global Health. This was measured with the self-report 12-item General Health Questionnaire (GHQ-12; Goldberg and Hillier, 1979), a validated instrument widely used in Nigeria to assess for general adult psychopathology (O. O. Omigbodun et al., 2006). Each item was scored on a four-point Likert scale with higher scores indicating higher mental distress. Cronbach's α was 0.73.

Subjective Well-Being. Adapted from the World Values Survey (WVS; World Values Survey, 2011) that measured respondents' self-appraisal of their lives, selected two Likert-scaled items (1 = completely dissatisfied, 10 = strongly satisfied) that measured caregivers' overall satisfaction with their current health and finances with higher scores indicating more positive well-being. Cronbach's α was

0.81.

Attitude about the Future. This was measured with the Yorùbá translated version of the Beck Hopelessness Scale (BHS, Beck et al., 1974) a 20-item scale consisting of true-false questions (scored 0 or 1) about future expectations and motivation. The total BHS score ranged from 0 to 20 with higher scores indicating more hope for the future. The Yorùbá BHS has been used with patients from outpatient mental health clinics in Nigeria (Aloba et al., 2017). Cronbach’s α was 0.54.

Competing Life Stressors. Life stressors experienced by caregivers in the past 3-months were measured by the Dynamics of Care interview developed in the US to evaluate patients’ detailed experiences with care (Rapkin et al., 2008). We asked caregivers whether they had experienced problems in the last three months in the eight following areas (0 = no, 1 = yes): obtaining sufficient food for the family, having sufficient finances, relationship stress, child’s school problems, child’s behavior, health problems, security/safety concerns, and religious/spiritual turmoil. A total life stressors score was calculated by summing all the areas in caregivers reported stress with higher scores indicating more stressors (range = 0–8).

Background Information. Household demographic information included: gender, age, language spoken at home, highest educational level attained, employment, ethnic group, religious affiliation, residence, marital status, number of household members, and livelihood conditions.

3.3. Data analysis

Hypotheses one–four were tested using covariance-based structural equation modeling (SEM; Browne, 1974). Model 1 was constructed to specify multiple factors affecting caregivers’ willingness to use accessible CAMH services. This model was depicted in Fig. 2, showing all manifest and latent variables and their relationships. The conventional model specification followed the SEM literature (McDonald and Ho,

2002) except that residual variances for all endogenous variables were omitted. Showing estimated residual variances was not necessary as all variables in the model were standardized, resulting in standardized path coefficients. In addition, all residual variances in Model 1 were assumed to be uncorrelated with each other. The reported results of model fitting were obtained using the lavaan package in R (Rosseel, 2012).

Rather than relying on listwise or pairwise deletion to address missing responses, we adopted the full information maximum likelihood (FIML) estimation of SEM parameters that allowed us to infer the most likely path coefficients given all available yet incomplete data (Collins et al., 2001). Yet even the FIML estimation was not suitable for all missing data. This was notable for the caregiver’s perceived need for CAMH services, which was not assessed if caregivers did not report a CAMH condition.

3.4. Post-hoc alternative model analysis

Building on the results from Model 1, we tested an alternative model (Model 2) to assess factors that potentially influenced caregivers’ beliefs about the effectiveness of different treatment modalities CAMH conditions (see Fig. 3). Our hypotheses were premised on testing a model that used an alternative multi-item proximate measure for caregiver help-seeking decisions, rather than a single-item measure we initially proposed for Model 1. As such, we specifically examined whether caregivers’ beliefs about the effectiveness of medical- and religious-based treatments were influenced by three latent constructs – caregivers’ beliefs about the etiology and treatment of CAMH conditions, stigma towards families affected by CAMH conditions, and caregiver wellness (see Fig. 3).

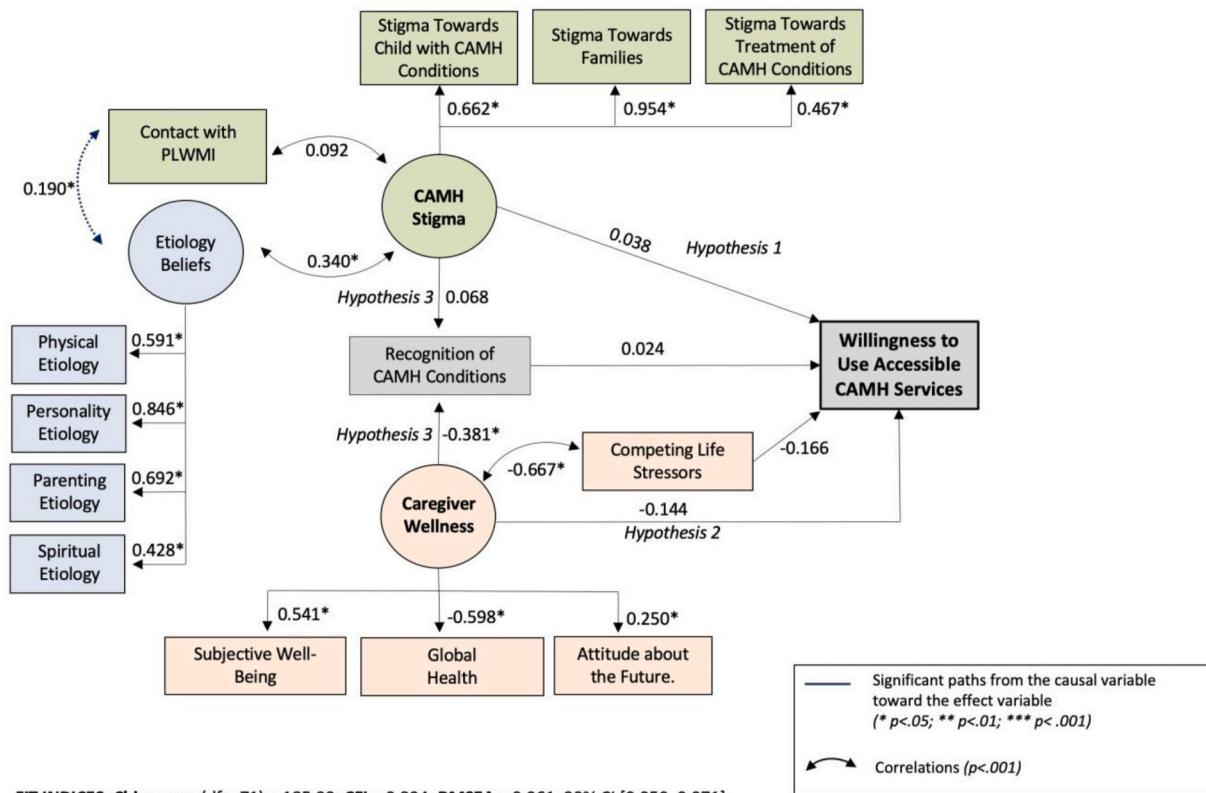


Fig. 2. Standardized parameter estimates: Initial structural model describing relationships between indicators that influence willingness to use accessible child and adolescent mental health (CAMH) services among caregivers (n = 442).

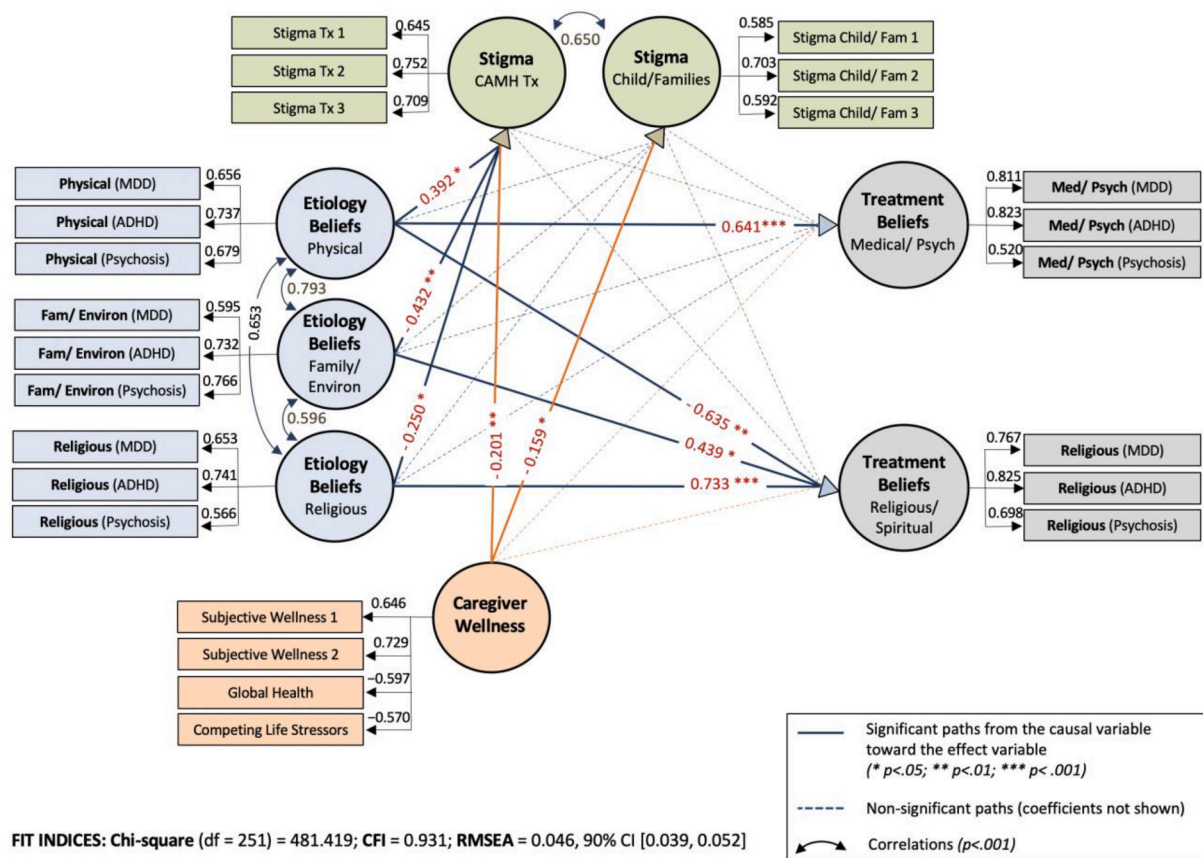


Fig. 3. Standardized parameter estimates: Structural model describing relationships between factors influencing caregivers’ beliefs about effective treatment for child and adolescent mental health (CAMH) problems (n = 442). Note. Latent variables for stigma towards CAMH treatment (Stigma Tx1.3) and families affected by CAMH problems (Stigma Child/Fam1 ... 3) were divided into parcels, a recommended technique for single scale scores (Kishton and Widaman, 1994).

4. Results

4.1. Participants

Interviewers visited 1423 households within 10 km from UCH between July 2019 and March 2020. Of 632 households that completed the study inclusion screener, 549 were eligible to participate (87%), and 81% (n = 442) of the eligible families completed the interview. The mean age of caregivers was 42-yo (range = 20-79-yo) with the majority being female (85%), married (96%), Yorùbá (91%), and Christian (60%; see Table 1). Twenty-two percent (n = 97) of caregivers reported being worried about their children’s behavior or feelings in the past 12-months – with specific concerns about sadness (9%, n = 40), restlessness (8%, n = 37), strange behavior (0.9%, n = 4), and other worrisome behavior (6%, n = 26). Caregivers did not rate these problems as severe.

(Mean severity score = 3.93, SD = 3.35; 0–10 scale with 10 being most severe) and few believed that their child needed help to address these problems (8%, n = 37). Consistent with these self-reports, 27% (n = 119) caregivers also reported that their children did not have any “difficulties with their emotions, concentration, behavior, or being able to get along with other people” (item 26 on SDQ-P), and 82% reported that their children were satisfied with life (see Tables 2 and 3 for other descriptive scores).

4.2. Model 1 (A priori hypotheses)

Our initial hypotheses about factors such as stigma towards CAMH conditions, caregiver wellness, etiology, and competing life stressors, in caregivers’ willingness to use CAMH services were specified and tested through SEM techniques. The following fit indices were used to assess

the fit of the hypothesized model: the Bentler Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Steiger-Lind Root Mean Square Error of Approximation (RMSEA). The model and all its relevant estimates of completely standardized path coefficients are shown in Fig. 2.

Perceived need for CAMH services (H₄) was excluded from the final model due to significant missing responses – only caregivers who reported concerns about CAMH conditions at home (n = 97) were asked about their perceived need for treatment.

SEM fit indices pointed to a fair fit (CFI = 0.894; TLI = 0.864; RMSEA = 0.061). The correlations among observed variables were largely attributable to latent factors loadings: stigma, caregiver wellness, and etiology beliefs. That is, the measurement parts of the model worked as intended. Yet, most of the relationships among cause-and-effect constructs were not statistically significant. Although caregivers were generally willing to use services (see Table 2), the SEM analysis suggested that the variability of their willingness, at least as operationalized in the current study, was not explained by their recognition of mental health conditions, stigma (H₁), wellness (H₂), or competing life stressors (p > 0.05).

4.3. Model 2 (alternative analysis)

While recognizing the significance of our disconfirmed hypotheses in Model 1, we formulated an alternative model for further empirical testing and theory refinement. The rationale for Model 2 was that the non-significant paths, as well as poor fit of Model 1, were likely attributed to the constraints of using a single-item to assess a hypothetical outcome – caregivers’ willingness to use CAMH services if their child presented with a CAMH condition. As such we substituted this decision-

Table 1
Descriptive statistics for caregivers (n = 442).

	n (%)
Gender	
Female	374 (85%)
Male	68 (15%)
Age	42-yo (mean) ^a
Ethnicity	
Yoruba	403 (91%)
Igbo	16 (4%)
Hausa	1 (0.2%)
Other ^b	22 (5%)
Married	426 (96%)
Highest Education	
No formal education	15 (3%)
Primary education	46 (10%)
Technical school	35 (8%)
Secondary school	199 (45%)
University	30 (7%)
College of Education	43 (10%)
Polytechnic	52 (12%)
Employed (yes)	420 (95%)
Self-employed	347 (79%)
Full-time (>40 hrs/wk)	65 (15%)
Neighborhood Density	
Low	53 (12%)
Medium	219 (49%)
High	170 (39%)
Financial status in the past year	
Earned enough to save	63 (14%)
Earned enough just to get by	228 (52%)
Earned some and spent some savings	59 (13%)
Earned some and borrowed money	90 (20%)
Livelihood	
Access to electricity (yes)	433 (98%)
Access to water	
Unprotected well (low quality)	15 (3%)
Public tap (medium)	175 (40%)
Private tap (high)	252 (57%)
Practice Religion (Yes)	441 (99%)
Christian	265 (60%)
Muslim	175 (40%)

^a Age range = 20–79yo; SD = 9.48.

^b Other ethnicities: Aginigbo, Akwa Ibo, Akaibom, Benue, Delta, Edo, Ibirra, Igala, Kogi, and Okene.

making outcome with a proxy measure – caregivers’ beliefs about the effectiveness of different types of treatment, as measured by multiple items. In Model 2, (see Fig. 3), the three causal constructs—caregivers’ beliefs about the etiology of CAMH conditions, stigma towards treatment and families affected by CAMH conditions, and caregiver wellness—influenced caregivers’ beliefs about the effectiveness of medical- and religious-based treatments. Model 2 yielded an improved model-data fit (CFI = 0.931; TLI = 0.918; RMSEA = 0.046). Caregivers who believed in physical causes of CAMH conditions (Depressive Disorder, ADHD, and Psychotic Disorder) tended to endorse stronger beliefs about the effectiveness of medical (hospital-based)/psychological treatment ($\beta = 0.641, p < .001$) and expressed weaker beliefs about religiously oriented treatments ($\beta = -0.635, p < .001$). Beliefs about the physical etiology of CAMH conditions were the only type of etiology belief that predicted the perceived effectiveness of medical/psychological services.

Caregivers who believed in family/environmental ($\beta = 0.439, p < .05$) and religious/spiritual ($\beta = 0.733, p < .001$) causes of CAMH conditions perceived religious/spiritual practices (e.g., consult a spiritual leader, pray and religious text with child) as an effective approach to treatment. Moreover, caregivers who believed in physical causes of CAMH conditions tended to stigmatize CAMH services less ($\beta = 0.392, p < .05$) while those who believed in family/environmental ($\beta = -0.432, p < .01$) and religious causes ($\beta = -0.250, p < .05$) stigmatized CAMH services more. Lastly, although caregiver wellness did not independently predict perceived CAMH treatment effectiveness, more caregiver wellness predicted less stigma towards children/families affected

Table 2
Descriptive statistics for main variables (n = 442).

Variable	Range	Mean (SD)/n(%)
Willingness to use CAMH services (n = 324, caregivers who knew about UCH services)	1–6	5.32 (1.42)
Recognition of CAMH problems (Parent SDQ; clinical cutoff score of 14 reported in Nigerian adolescents; Adeniyi and Omigbodun, 2017)	0–40	9.48 (4.88)
Perceived need for CAMH services? (yes)		97 (22%)
Greater stigma toward ...		
Children with CAMH conditions	17–102	59.96 (12.06)
Families of children with CAMH conditions	12–72	35.20 (11.22)
Treatment for CAMH condition	17–102	60.83 (18.66)
Contact with a person with mental illness (higher rank indicating more personal contact with persons with MI)	1–10	5.38 (2.51)
Caregiver Wellness		
Subjective well-being	2–20	10.35 (4.82)
Poor global health (higher scores are worse)	2–48	20.17 (4.61)
Attitude about the future (higher scores indicate more future hope)	0–20	17.96 (1.77)
Etiology of CAMH condition		
Physical (higher scores indicate more physical etiology beliefs)	0–9	5.78 (18.63)
Personality (higher scores indicate more personality etiology beliefs)	0–5	2.57 (1.29)
Parenting (higher scores indicate more parenting etiology beliefs)	0–7	4.03 (1.87)
Spiritual (higher scores indicating more spiritual etiology beliefs)	0–9	4.04 (1.84)
Competing life stressors (cumulative)	0–8	3.06 (1.88)

by CAMH conditions ($\beta = -0.159, p < .05$) and treatment ($\beta = -0.201, p < .01$).

5. Discussion

The priority of scaling up child and adolescent psychiatric services in Nigeria underscored the importance of understanding caregivers’ help-seeking decisions when limited services are available and accessible. Simply put, if treatment for CAMH conditions is within reach, will caregivers consistently utilize them and in doing so begin to narrow the CAMH treatment gap in Nigeria? Findings from our study indicated that caregivers were generally willing to use hospital-based outpatient psychiatric services to address a narrow set of behaviors they warrant as sufficiently problematic – ones that were overtly disruptive and developmentally atypical in a Nigerian context. Contrary to our expectations, caregivers’ help-seeking decisions were not influenced by their recognition of CAMH conditions, competing life stressors, personal wellness, nor stigma – findings that were no less important to understand. Although 22% of caregivers were concerned about their child’s behavior, they did not subscribe to a single approach of addressing their children’s mental health. Many caregivers concurrently consulted with religious leaders, healers, school teachers, and CAMH care specialists. There was less ambivalence about exploring and simultaneously moving between diverse beliefs and motivations about addressing CAMH concerns – a finding that was consistent with previous studies (Cohen et al., 2016; Gureje et al., 1994; Odikina et al., 2014). Caregivers appraised different means to address their child’s mental health and were undeterred by any competing needs (personal wellness) or threat of being ridiculed or mistreated in their community (stigma towards families and CAMH intervention). Williams and Healy’s (2001) notion of an “exploratory map” of fluid beliefs about mental illness etiology provides a helpful heuristic to understand our findings. Rather than adopting an “explanatory model” of relatively fixed and stable predictors, they proposed that persons with mental illness sought meaning for their experiences by continuously navigating different social, internal, and

Table 3
Mean and standard deviations of caregiver knowledge of CAMH conditions per case scenarios ($n = 442$).

How likely was the child's condition caused by ...	Major Depression	Attention-Deficit-Hyperactivity	Psychosis
Physical			
Being physically tired/sick	3.04 (1.20) ^a	3.41 (0.990)	2.93 (1.34)
Chemical imbalance in the brain	2.68 (1.19)	2.62 (1.24)	1.80 (1.19)
Genetic/inherited problem	2.80 (1.16)	2.01 (1.13)	2.55 (1.26)
Religious			
Curse from the family	2.81 (1.19)	2.86 (1.18)	2.06 (1.17)
Religious/spiritual problem	2.37 (1.20)	2.82 (1.20)	1.50 (0.912)
Family/Environment			
The way she/he was raised	2.63 (1.20)	2.33 (1.21)	3.55 (0.862)
Stressful circumstances	1.62 (0.963)	2.66 (1.26)	2.14 (1.28)
Worries related to poverty	1.96 (1.12)	3.16 (1.11)	3.08 (1.18)
How likely will the following help this child?	Major Depression	Attention-Deficit-Hyperactivity	Psychosis
Religious			
Read religious texts	1.29 (0.643)	1.46 (0.853)	1.32 (0.686)
Pray	1.21 (0.543)	1.30 (0.671)	1.15 (0.454)
Participation at place of worship	1.32 (0.670)	1.43 (0.800)	1.40 (0.792)
See a spiritual leader	1.71 (0.972)	1.76 (1.04)	1.41 (0.800)
Herbal medicine	3.59 (1.26)	3.63 (0.793)	3.15 (1.13)
Medical/Psychological			
Visit hospital	2.39 (1.26)	2.55 (1.31)	1.61 (1.02)
Consult mental health specialist ^b	1.49 (0.926)	1.62 (1.01)	1.74 (1.07)
Consult a psychiatrist	2.64 (1.29)	2.73 (1.30)	1.41 (0.907)
Advisement from child's school-teacher	1.54 (0.862)	1.56 (0.884)	2.18 (1.19)

^a Likert Scale, 1: Very Likely – 4: Not at all Likely.

^b Includes counselor, psychologist, or a therapist.

biological explanations for mental illness. Similarly, it is plausible that caregivers in our study endorsed concurrent explanations of their children's behavior leaving them receptive to any available service that reflected their beliefs about the causes of CAMH conditions.

Our findings further suggested that the *pragmatics* of seeking any viable services prevailed over the expected influences of symptom recognition, personal wellness, or stigma. Caregivers from our study prioritized addressing their children's mental health needs as they arose by any means available. In other words, caregivers conceivably followed a "trial and error" heuristic to decide on the most practical and accessible means of helping their children (Quack, 2013). Taken together it was probable in our study that caregivers' willingness to use CAMH services at UCH was more indicative of their *openness* to rather than a clear preference for these services. Still, what remained difficult to gauge was whether caregivers utilized and consistently engaged the services over time.

We also found that caregivers' recognition of CAMH conditions and the perceived need to seek treatment were mutually exclusive. The behaviors that caregivers deemed sufficiently atypical or problematic to warrant treatment were generally narrow in scope. Many caregivers attributed externalizing behavior (i.e., oppositional, inattentiveness, and learning delays) to the natural course of development, child temperament, or transient circumstances such as negative peer influence

or economic shocks. Only upon suspicion of spiritual and/or biological causes for their children's escalating behavior would caregivers seek counsel from traditional healers, local religious leaders, and mental health care providers. In their study of Latina mothers seeking CAMH treatment for the first time, Arcia and Fernández (2003) similarly found that mothers tolerated their children's disruptive behaviors but reached a "saturation point" when they received reports from teachers that their child's behavior bore negative consequences. Caregivers' high threshold for prodromal markers of CAMH disorders highlights the importance of broadening public awareness of the spectrum of child mental health to include a prevention focus (V. Patel et al., 2018). Numerous exemplary early prevention interventions in Nigeria that merit expanded access include school-based life skills programs (Bella-Awusah et al., 2011; Bella-Awusah and Omigbodun, 2020; Oduguwa et al., 2017) and parent-training (O. Omigbodun and Olatawura, 2008) that focus on social and emotional learning, child maltreatment prevention, and strengthening protective factors.

Confirmation of our post hoc hypotheses further indicated that caregiver beliefs about the causes of CAMH conditions shaped their appraisal of how best to intervene for their children. This aligned with Yorubá beliefs that stressed the importance of etiology over symptoms when treating illness (Heaton, 2013). Although caregivers generally endorsed concurrent biological, environmental, and spiritual explanations of CAMH conditions, what they believed most at any point-shaped their preference for that type of treatment. Caregivers, for example, who attributed CAMH conditions to physical factors regarded biomedical interventions to be the most effective means of treatment while spiritual/religious ones were deemed to be the least. Similar findings were reported among Ghanaian traditional healers whose prevailing belief at any time determined their preferred approach to treatment despite holding simultaneous beliefs about the biological, social, and supernatural causes of epilepsy (Kpobi et al., 2018). Previous studies in Nigeria (Adelekan et al., 2001; Bhikha et al., 2012) and Ethiopia (Abera et al., 2015) have also revealed congruency between caregivers' etiology beliefs about adult psychotic disorders and preference for treatment. Caregivers, for example, in Ethiopia who endorsed supernatural causes of their children's behavioral problems were 4.3 times more likely to prefer traditional treatment than those who did not (Abera et al., 2015).

Caregivers' beliefs about the causes of CAMH conditions can also propagate the stigmatization of CAMH services – namely those who endorsed etiology beliefs related to family or religious factors held more stigmatizing views of using CAMH services. Etiology beliefs that were incongruent with the type of service potentially created dissonance and were subsequently discredited. As noted earlier, stigmatization did not necessarily discourage caregivers' willingness to use CAMH services – an unexpected finding at odds with previous studies. Yet, a closer examination of these studies indicated that despite frequent narrative accounts of stigma as a barrier to help-seeking, they generally reported small to moderate associations between stigma and help-seeking (A. E. Cooper et al., 2003; Golberstein et al., 2009). This brings us to our earlier point regarding the pragmatics of addressing CAMH conditions. That is, caregivers were receptive to any treatment that they regarded as credible and based on their beliefs about the causes of mental illness *despite* barriers to treatment -including the fear of being stigmatized. Finally, consideration should be given to the recent surge of anti-discrimination campaigns in Nigeria that have increased mental health literacy, hence shifting public opinions about persons with mental illness (Armiyau, 2015). Even so, it remains unclear if the anticipation of being stigmatized for using CAMH services would discourage actual or sustained use.

We draw several practice implications from these findings. First, more public mental health initiatives are needed to increase awareness of how subthreshold behavioral symptoms that caregivers considered as normative may lead to mental health conditions later in life. Reframing CAMH as a non-linear continuum from mental health (wellbeing) to mental disorder (disturbance of thought, emotion, and behavior) elevates the importance of prevention on par with intervention (V. Patel

et al., 2018). Second, caregiver impartiality to a range of intervention approaches warrants the select integration of service models that would otherwise remain siloed in practice. This concern aligns with previous research that highlights the merits of integrating traditional and faith healing with biomedical treatment for adults with mental illness (Gureje et al., 2020; Ojagbemi and Gureje, 2020). Moving forward, evidence-based practices (beyond indigenous or biomedical) to prevent or treat specific childhood conditions are needed to scale up collaborative models. Third, the importance of recognizing diverse explanations for CAMH disorders that are inclusive of traditional, biomedical, and psychosocial causes should be tempered with dispelling any form of blame that stigmatizes children and marginalizes families affected by mental illness.

5.1. Limitations and conclusion

Interpretation of our analysis warrants several points of caution. First, the caregivers' stated willingness to use accessible CAMH services did not intimate certainty in utilizing the services – a critical outcome we were not able to adequately measure given that very few caregivers reported concerns about their children's behavior. The potential discrepancy between intended and actual patronage of CAMH services raised a second cautionary note of acquiescent response bias – the pattern of responding with both extremes on Likert-type measures, which was evidenced in more collectivistic societies that tend to avoid uncertainty (Smith, 2004). This pattern is particularly noteworthy given that our primary study outcome – caregiver willingness to use CAMH services – was measured with a single Likert-scale item. As such, caregivers' openness to CAMH services may be swayed by their high regard for UCH as a tertiary medical institution and less so by a nuanced understanding of mental health services per se. This raised an additional concern that several measures indicated questionable reliabilities (i.e., SDQ-P, attitude about the future) and should be interpreted with caution. Although many of the measures were developed in a North American context, the interview battery was piloted with 40 caregivers and modified thereafter to ensure cultural and linguistic clarity. Moreover, the sole use of Cronbach α to determine reliability has been questionable in studies conducted in Africa (Agbo, 2010), the results of confirmatory factor analysis indicated convergence of the models on which our findings were based – providing an alternative assessment of reliability (Clark, 1995). Another limitation is the generalizability of our post-hoc alternative model (2), which we derived from modifying mis-specifications from our a priori model (1). As such, the findings may reflect more of the distinctive characteristics of our sample – warranting the need to replicate our post-hoc modifications. Lastly, caregivers may have understated their endorsement of indigenous treatment due to the globalization of psychiatry and the rise of Abrahamic religions (Christianity and Islam) in Nigeria, both of which might have delegitimized traditional healers to varying degrees (McCulloch, 1995). These points underscore the importance of mixed-methods studies that further clarify local terms and meanings ascribed to a wider range of CAMH categories and services that are not simplistically bifurcated as indigenous Nigerian or biomedical (S. Cooper, 2016).

Notwithstanding these methodological limitations, our study contributes to an impressive corpus of local research on mental healthcare-seeking behavior in Nigeria by empirically supporting the merit of scaling up resources and bolstering political will to build CAMH infrastructure to ensure accessibility of a broad spectrum of complementary intervention and prevention services – in doing so, caregivers will come.

Author statement

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Acknowledgments

This research was funded by the National Institute of Mental Health (NIMH 1R15 MH117631-01; PI: E. Kang; O. Omigbodun). We thank the committed staff at C-CAMH for coordinating the study and conducting the interviews with sensitivity and compassion, and to Dr. O. J. Taiwo, Department of Geography, University of Ibadan for his assistance on the methodology. We are grateful to the participants who generously shared their stories.

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