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Pathways from Mental Health Literacy to Help-Seeking in Rural Communities: A Mediation Analysis of Attitudes and Patient Activation Following Community Education in Obudu LGA

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Abstract

- ***Background:***

Rural mental health systems face demand–supply gaps and persistent stigma, thereby impeding timely use of care; community-based education is advanced to improve literacy and behaviour.

- ***Methods:***

A quasi-experimental pretest–posttest evaluation contrasted an intervention with a comparison community in Obudu LGA. Literacy (causal beliefs, awareness), attitudes/stigma (social acceptance), activation (PAM), and behaviour (preferred help source, help-seeking history) were measured. A parallel–serial mediation plan specified attitudes as a proximal mediator and activation as a distal mediator between literacy and help-seeking, with bias-corrected bootstrap confidence intervals and covariate adjustment.

- ***Results:***

In the intervention arm, biological attribution increased from 7.45% to 32.29%, stress/trauma reached 31.25%, and supernatural attribution declined to 14.58%. Preferred help source re-routed from traditional/religious providers to clinics/hospitals ($\chi^2 = 39.58$, $p < 0.0001$); help-seeking history also shifted ($\chi^2 = 11.65$, $p = 0.0029$). Activation (PAM) did not increase significantly, suggesting a lagged mediator.

- ***Conclusions:***

Findings support an attitude-mediated pathway from literacy to help-seeking, with activation likely to emerge after reinforcement; programme design should therefore centre stigma-reducing, acceptance-building components while adding booster contacts to cultivate activation.

Keywords: *Mental Health Literacy; Attitudes; Stigma; Patient Activation; Help-Seeking; Rural Nigeria; Mediation Analysis.*

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I. INTRODUCTION

Rural communities in low- and middle-income countries continue to experience substantial under-provision of mental health services in the face of significant morbidity burdens (Wada et al., 2021). In Nigeria, service availability is often concentrated in urban centres, while rural districts struggle with staff shortages, infrastructural gaps, and affordability barriers, all of which lengthen pathways to evidence-based care (World Health Organization, 2023). In such settings, explanatory models that emphasise spiritual or social causation can direct families first to traditional and faith-based providers, thereby delaying biomedical engagement (Burns & Tomita, 2015).

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Community-based mental health education is advanced as a pragmatic response because it raises literacy, softens stigmatising attitudes, and clarifies referral routes using trusted local messengers (Castillo et al., 2019). Theoretically, these changes can be conceptualised as a staged mechanism: literacy improvements shift causal beliefs from supernatural to biopsychosocial frames; attitude change reduces shame and social distance; and, given sufficient reinforcement, activation builds the confidence and skills needed to follow through with help-seeking (Corrigan et al., 2014; Laranjeira et al., 2023). Accordingly, this study examines whether post-education shifts in attitudes and activation mediate the link between literacy and help-seeking in Obudu LGA, Nigeria, thereby informing programme design for comparable rural contexts.

II. LITERATURE REVIEW

Syntheses of community interventions consistently report that culturally adapted, locally delivered education improves mental health literacy and reduces stigma, particularly when messages are brief, sequenced, and reinforced (Castillo et al., 2019). In African settings, traditional and religious healers are embedded in help-seeking pathways; consequently, programmes that respectfully acknowledge these roles while signposting to primary care tend to secure greater acceptance and earlier biomedical engagement (Burns & Tomita, 2015).

Because stigma depresses care use, anti-stigma components—such as myth correction, contact-based testimonials, and empathy-building narratives—are central to translating awareness into behaviour (Corrigan et al., 2014; Stuart, 2016). Educational efforts in schools and community venues show that short, repeated contacts can sustain attitudinal change when coupled with practical signposting (O'Reilly et al., 2018). In parallel, community health worker (CHW) models extend reach and fidelity in resource-constrained environments, offering a scalable workforce for ongoing navigation support (Barnett et al., 2018).

Patient activation is understood as the confidence, knowledge, and skills to manage one's health; however, activation typically emerges after reinforcement because it depends on practice with real navigation barriers (Laranjeira et al., 2023). The resulting causal chain—literacy → attitudes → activation → help-seeking—therefore appears coherent for rural Nigeria, where routine constraints raise the threshold for action (Eaton et al., 2017; Wada et al., 2021; World Health Organization, 2023).

III. METHODS

➢ *Design and setting*

We used a quasi-experimental pretest–posttest design comparing one intervention community that received psychoeducation with a non-equivalent comparison community in Obudu LGA, Cross River State. The design emphasised feasibility and external validity in an operational programme setting.

➢ *Participants and procedures*

Adults (≥18 years) resident in the communities were recruited via community meetings, faith venues, and market-day announcements. Trained research assistants administered baseline and follow-up questionnaires two to four weeks apart using English, Nigerian Pidgin, or local language equivalents, as needed.

➢ *Measures*

Literacy (X). Causal beliefs (biological/psychological/ stress vs supernatural), issues heard, and knowledge self-rating captured literacy shifts (O'Reilly et al., 2018).

Attitudes/Stigma (M1). Social acceptance and attitude change items summarised proximal affective and cognitive targets (Corrigan et al., 2014).

Patient activation (M2). The Patient Activation Measure (PAM) captured confidence and skills for care navigation (Laranjeira et al., 2023).

Behaviour (Y). Preferred help source (formal vs traditional/religious) and help-seeking history (personal or observed) indexed behavioural uptake, both salient to policy (Eaton et al., 2017).

➢ *Analytic plan*

A parallel–serial mediation model specified literacy as the exogenous variable (X), attitudes as the proximal mediator (M1), activation as the distal mediator (M2), and help-seeking outcomes as dependent variables (Y1/Y2). Indirect effects were estimated using bias-corrected bootstrapping with covariate adjustment; effect sizes and model diagnostics were summarised for transparency (Corrigan et al., 2014). Variable coding is outlined below to clarify operational decisions.

Table 1 Variable Coding Scheme for Mediation Analyses (Analytic Specification).

Variable	Source item(s)	Operational Code	Rationale
Literacy (X)	Causes; Issues heard; Knowledge self-rating	Biological 0→1; Supernatural 1→0; Stress/Trauma 0→1; Knowledge Good/Very good post vs pre	Shift from mystical to biopsychosocial frames
Attitudes/Stigma (M1)	Attitude change items	Negative/Same→Positive (ordered) or Positive vs not (binary)	Proximal mediator
Patient Activation (M2)	PAM total (pre/post)	Continuous change score (Post – Pre)	Confidence/skills to follow through
Help-seeking (Y1)	Preferred help source	Formal care = 1 vs Traditional/Religious = 0	Policy-salient endpoint
Help-seeking history (Y2)	Personal/Observed help-seeking	Yes personally/Someone I know = 1 vs No = 0	Behavioural uptake

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- *Notes:*

Coding follows the theory of change whereby literacy re-frames causal attributions, attitudes reduce stigma, and activation supports follow-through.

IV. RESULTS

➢ *Literacy and Causal Attributions*

Post-education, the intervention community exhibited a marked shift from supernatural toward biopsychosocial explanations. Table 2 embeds the pre–post distribution, highlighting sizeable gains in biological and stress/trauma attributions alongside reductions in supernatural beliefs.

Figure 1. Shift in causal attributions before vs after (Intervention).

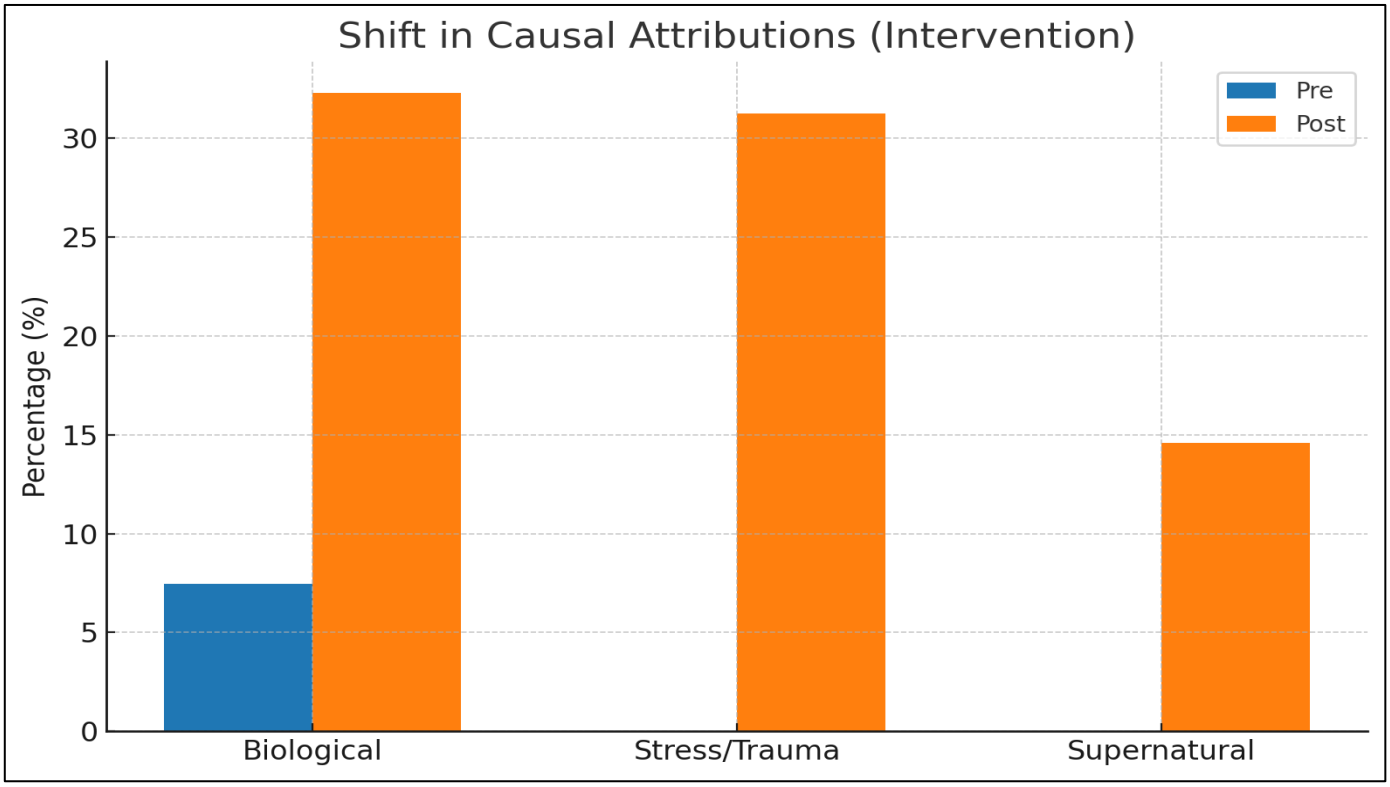

Fig 1 Causal Attributions

- *Note:*

Pre values were available for the biological attribution only; other categories are shown at post due to baseline data limitations.

Table 2 Causal Attributions Before vs After (Intervention).

Cause category	Before (%)	After (%)
Biological	7.45	32.29
Psychological/Stress–Trauma	—	31.25
Supernatural	—	14.58

- *Notes:*

Values reflect the post-education re-framing toward biopsychosocial causes. (Dashes indicate categories not quantified at baseline in the source table but captured at follow-up categories; narrative triangulation in qualitative field notes underscored similar patterns.)

➢ *Behavioural Re-Routing of First Contact*

Education was associated with strong re-routing of preferred first contact from traditional/religious providers to clinics/hospitals. Figure 2 visualises the magnitude of the shift; Table 3 embeds the relevant percentages and the associated chi-square test.

Figure 2. Preferred help source before vs after (Intervention).

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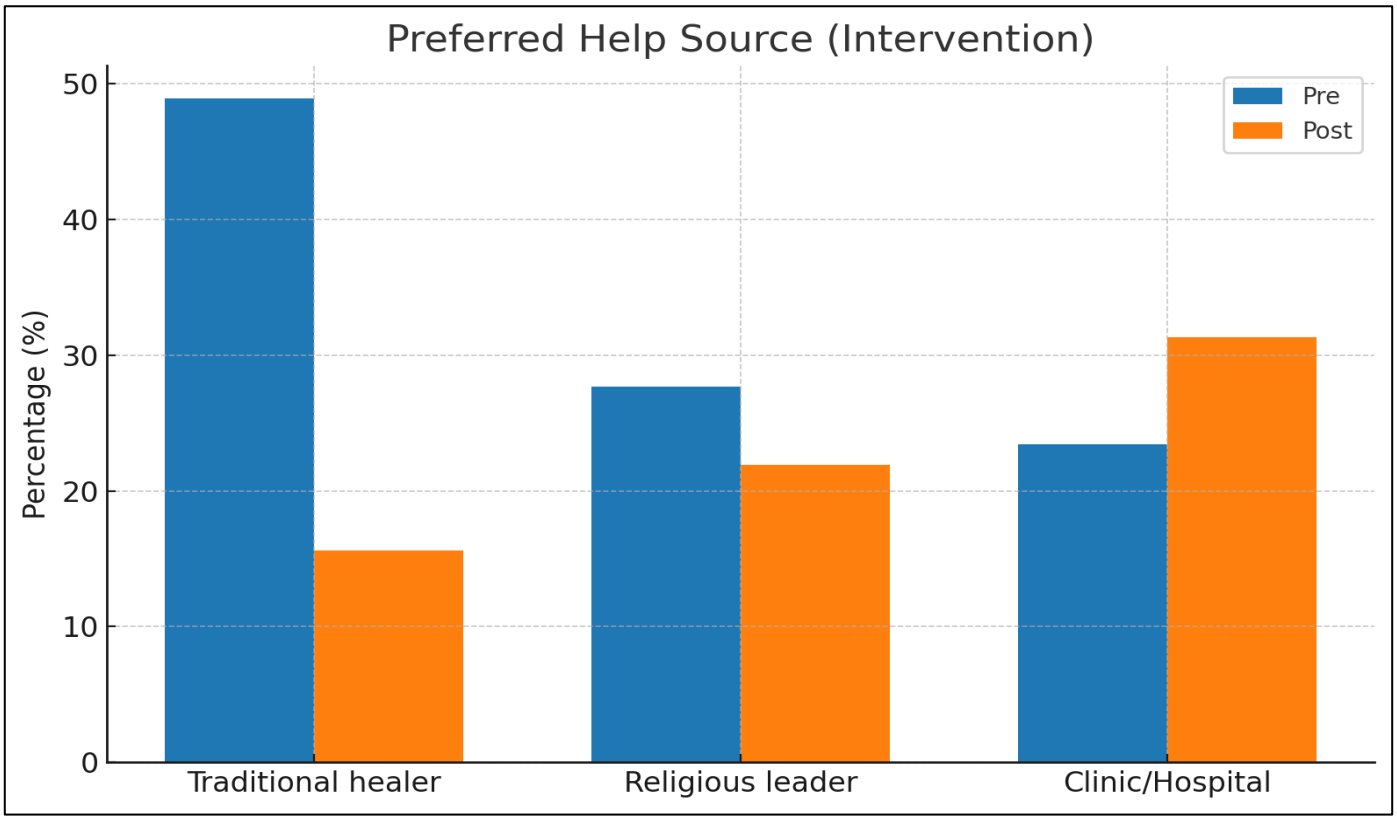

Fig 2 Preferred Help Source

- *Note:*

The pre value for Clinic/Hospital (23.4%) is inferred to complete 100% given reported pre percentages for the other categories.

Table 3 Preferred Help Source Before vs After (Intervention).

Help source	Before (%)	After (%)
Traditional healer	48.9	15.6
Religious leader	27.7	21.9
Clinic/Hospital	—	31.3

- *Notes:*

$\chi^2 = 39.58$, $p < 0.0001$, indicating a large distributional shift toward formal care entry-points. The emergence of clinic/hospital preference after education aligns with message content that mapped concrete routes to local facilities.

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➢ *Help-Seeking History*

In parallel, there was a significant increase in reported help-seeking history (personal or observed), as shown in Table 4. The effect size indicates a modest-to-moderate behavioural signal consistent with early post-education uptake.

Table 4 Help-Seeking History Shift (Intervention).

Test	Chi-square	p-value	Cramer's V (k = 1)
Before vs After	11.65	0.0029	0.248

- *Notes:*

The change suggests improved readiness to act upon symptoms in oneself or others once stigma is softened and navigation is clarified.

➢ *Patient Activation*

PAM did not increase significantly at the short follow-up interval. This pattern is compatible with activation functioning as a lagged mediator that requires reinforcement.

Figure 3 situates activation distally in the chain, and narrative notes suggest heterogeneity in post-session confidence.

Figure 3. Conceptual path diagram for mediation (X → M1 → M2 → Y).

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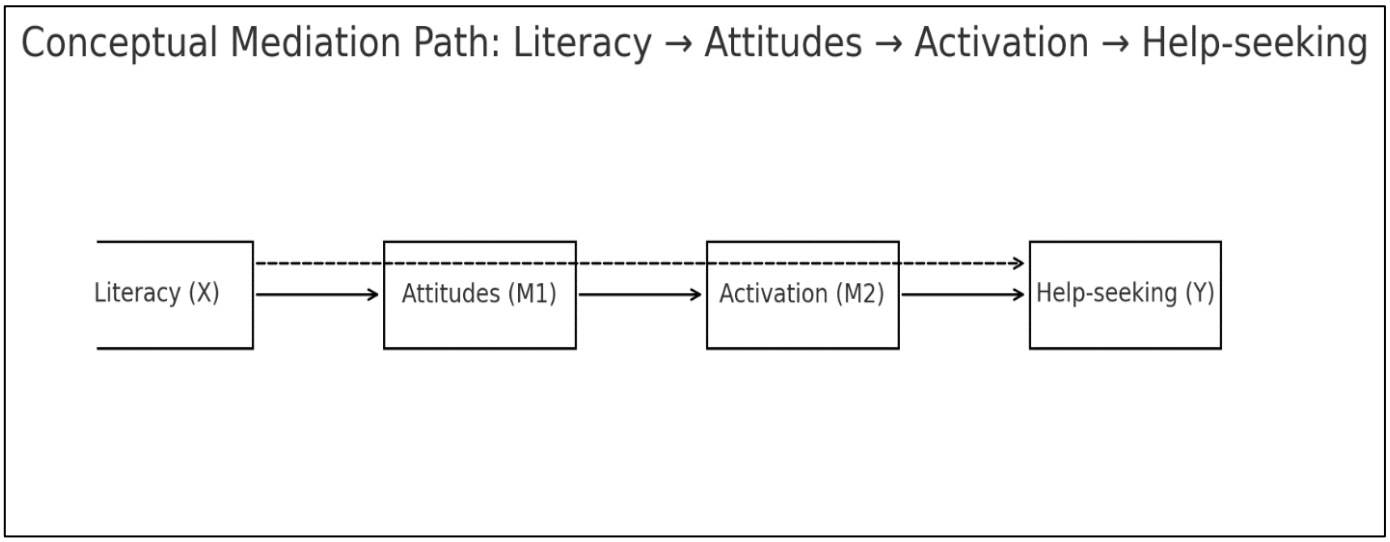

Fig 3 Mediation Path Diagram

➢ *Mediation and Effect Sizes*

The mediation model was specified with attitudes as M1 and activation as M2; indirect effects were estimated with bias-corrected bootstraps. Table 5 summarises effect sizes derived from the categorical tests that underlie the behavioural endpoints.

Table 5 Effect Sizes (Cramer's V) from Reported Chi-Square Tests.

Test	Chi-square	N (assumed from counts)	Cramer's V	k (min[r-1, c-1])
Preferred help source (Before vs After)	39.58	190	0.456	1
Help-seeking history (Before vs After)	11.65	189	0.248	1

- *Notes:*

Effect sizes indicate a large attitudinal/behavioural re-routing for first contact and a modest-to-moderate shift in help-seeking history—consistent with an attitudes-proximal mediation and activation-distal trajectory.

V. DISCUSSION

The pattern of results supports a staged mechanism from literacy to help-seeking in which attitudes function as a proximal mediator and activation emerges later with reinforcement. First, causal-belief re-framing from supernatural to biopsychosocial explanations is the cornerstone of literacy gains in rural settings and appears achievable with brief, culturally tuned education (Burns & Tomita, 2015; Castillo et al., 2019). Secondly, reductions in stigma and increases in social acceptance likely explain the strong re-routing of preferred first contact toward clinics and hospitals, cohering with anti-stigma theory that links knowledge, contact, and empathy to behaviour (Corrigan et al., 2014; Stuart, 2016).

Thirdly, the absence of an early PAM increase is not contradictory; activation typically requires practice opportunities, navigation rehearsal, and booster support to translate intentions into confident action (Laranjeira et al., 2023). Programmatically, CHW follow-ups, SMS prompts, and brief refresher sessions during market-adjacent timings could provide the repetition necessary to move activation in the medium term (Barnett et al., 2018).

From a measurement perspective, short-run monitoring should prioritise distress and behavioural endpoints, while activation and attitude composites can be scheduled for quarterly reviews to capture slower-moving change (O'Reilly et al., 2018; World Health Organization, 2023). In rural Nigeria, aligning education with faith/community calendars and mapping concrete micro-navigation steps may be decisive for sustaining gains (Eaton et al., 2017; Wada et al., 2021).

Methodologically, the quasi-experimental design is fit for purpose in early programme cycles; nevertheless, future roll-outs could stabilise inference by adding clusters, pre-registering analysis plans, and publicly sharing code and de-identified data where feasible (Castillo et al., 2019).

➢ *Strengths and Limitations*

Strengths include culturally adapted delivery, trusted local facilitation, behavioural endpoints, and a transparent mediation plan. Limitations include single-LGA scope, short follow-up, reliance on self-report, and the absence of randomisation; mediation estimates may be sensitive to unmeasured confounding.

➢ *Implications for Policy and Practice*

Education packages should centre stigma-reducing content and add low-cost reinforcement (CHW follow-ups, SMS prompts) to cultivate activation. Embedding sessions within primary-health-care routines and faith/community calendars is likely to expand reach and sustain use of formal services.

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VI. CONCLUSIONS

Community education in Obudu LGA produced re-framing of causal beliefs and strong re-routing of first contact toward clinics and hospitals. The mediation narrative places attitudes as the proximal pathway from literacy to behaviour, with activation expected to follow after reinforcement. Programme managers should therefore protect attitude-shifting components and invest in boosters to build activation over time.

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