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Development and Validation of the Choongo Postpartum Psychosis Scale-8 for Pre- and Postnatal Screening of Mothers at Primary Healthcare Level in Zambia

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Abstract

Background: Postpartum psychosis (PPP) is a severe but under-recognized maternal mental health condition, particularly in low- and middle-income countries where culturally adapted screening tools are scarce. In Zambia, PPP remains undocumented despite high rates of postnatal depression, and psychotic-like symptoms underscoring the need for context-specific instruments. This study sought to develop and validate the Choongo Postpartum Psychosis Screening Scale (CPPS-8), an 8-item tool tailored for use in Mother and Child Health (MCH) units in Lusaka, Zambia.

Methods: A cross-sectional quantitative design was employed. Tool development followed iterative refinement from 36 to 8-items, guided by expert panel review, pilot testing, and psychometric evaluation. Eighty-eight postnatal mothers within six weeks of childbirth were randomly sampled from first-level hospitals. Reliability was assessed using Cronbach's alpha, test–retest and inter-rater measures. Diagnostic accuracy was evaluated against DSM-5 and ICD-11 psychiatric assessments.

Results: The final 8-item CPPS demonstrated acceptable internal consistency (α = 0.82), strong test–retest reliability (r = 0.79), and high inter-rater agreement (r = 0.83). Sensitivity (84.1%) and specificity (88.6%) confirmed robust diagnostic accuracy. Sleep disturbance (59.1%) and child care neglect (53.4%) emerged as the strongest predictors of positive screens. Overall, 12.5% of mothers screened positive, with 10.2% confirmed by psychiatric experts.

Conclusion: The CPPS is a brief, reliable, and culturally relevant screening tool for early detection of PPP in resource-constrained maternal health settings. Its integration into routine antenatal and postnatal care can strengthen early intervention, safeguard maternal-infant wellbeing, and inform national mental health policy.

Keywords: Postpartum psychosis; Maternal mental health; Screening tool; Development; Psychometric validation

1. Introduction

Maternal mental health has received increasing recognition as a critical determinant of maternal and child wellbeing, yet remaining underprioritized in global health systems. Mental and behavioral disorders account for a substantial proportion of disability-adjusted life years (DALYs) worldwide, with women in the perinatal period disproportionately affected [1]. Globally, postpartum depression has gained growing attention, but severe psychiatric conditions in the maternal mental health category such as postpartum psychosis (PPP) remains under-researched and under-detected, despite its potential to cause catastrophic outcomes for mothers, infants, and families [2,3]. The burden of maternal

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mental health disorders is unevenly distributed across regions. High-income countries report prevalence rates of maternal mental health between 10–15%, while low- and middle-income countries (LMICs) often report rates exceeding 20% [4]. In sub-Saharan Africa, where health systems face resource constraints and stigma surrounding mental illness persists, maternal mental health disorders are likely underestimated [5]. For instance, studies in Zambia have documented high rates of postnatal depression, with nearly half of mothers reporting depressive symptoms [6,7]. However, postpartum psychosis remains largely undocumented, suggesting that the true burden may be concealed by the absence of culturally adapted screening instruments.

Pregnancy and childbirth are profound biopsychosocial transitions. Although often celebrated as joyous milestones [8,9], they can trigger vulnerability to psychiatric disorders due to hormonal fluctuations, sleep deprivation, psychosocial stressors, and genetic predispositions [9,10,11]. PPP, though rare affecting 1–2 per 1,000 births as per global estimates, characterized by hallucinations, delusions, disorganized thought, and impaired reality testing [13,14,15]. The abrupt onset of symptoms, typically within the first two weeks postpartum, poses risks of suicide, infanticide, and impaired maternal-infant bonding if left undetected [16,17]. Therefore, early detection through screening during antenatal visits offers a strategic opportunity to identify women at risk before delivery, enabling preventive interventions and strengthening maternal resilience during the postpartum period. Antenatal screening aligns with preventive health models such as the Health Belief Model (HBM) and Theory of Planned Behavior (TPB), which emphasize risk perception, attitudes, and behavioral intentions as predictors of health-seeking and professional practice [18,19]. By equipping nurses and midwives in Mother and Child Health (MCH) units with a validated screening tool, health systems can bridge the gap between clinical knowledge and frontline practice, ensuring that subtle warning signs of PPP are not overlooked.

Despite the urgency, no standardized, context-appropriate screening tool for PPP currently exists in Zambia or much of sub-Saharan Africa. This absence perpetuates underdiagnosis and delays in treatment, leaving families to navigate crises without adequate support. The present study addresses this gap by designing and piloting the Choongo Postpartum Psychosis Screening Scale (CPPS), a tool tailored for use in primary healthcare settings. The CPPS was iteratively refined from 36 items to a concise 8-item version, balancing comprehensiveness with feasibility for routine use. This article reports on the design process, initial validation, and feasibility testing of the CPPS, contributing to the advancement of maternal mental health screening in resource-constrained contexts.

2. Material and methods

2.1. Study Design

This study employed a cross-sectional quantitative research design to evaluate the psychometric properties and feasibility of the Choongo Postpartum Psychosis Screening Scale (CPPS). The design focused on statistical testing of reliability, validity, sensitivity, and specificity of the instrument. A simple random sampling technique was used to select postnatal mothers attending Mother and Child Health (MCH) units in Lusaka's first-level hospitals. This ensured that each eligible mother within six weeks postpartum had an equal chance of being included in the study, thereby minimizing selection bias and enhancing the representativeness of the sample.

2.2. Tool Development

The Choongo Postpartum Psychosis Screening Scale (CPPS) was developed through an iterative process informed by existing validated instruments, international and local guidelines, and empirical observations to secure contextual validity and practical relevance with the Zambian healthcare environment. Key references included the psychosis screening questionnaire by Bebbington & Nayani, [20], which probes domains such as hypomania, thought insertion, paranoia, strange experiences, and hallucinations, as well as more recent perinatal mental health tools [21-25].

The initial 36-item version of the CPPS was drafted to capture a broad range of psychotic-like experiences contextualized to the Zambian maternal health setting. Items were adapted to reflect cultural relevance and clinical applicability in Mother and Child Health (MCH) units. The development process followed four main stages:

- Creation of the preliminary version of the questionnaire,
- Expert panel evaluation which included psychiatry clinicians, midwives and obstetritians and gynecologists in line with the Delphi method which is suitable for the systematic collection of expert opinions in line with Keeney, et al., [26].
- Pilot testing with a representative sample of Mothers in first-level hospitals, and
- Evaluation of the questions' test–retest reliability and clarity.

Once the initial tool was developed and evaluated by experts, it was subjected to pilot testing which involved its administration by the very professionals (nurses and midwives) it is intended to be used.

- **Pilot 1:** The 36-item tool was administered to 15 postnatal mothers. Feedback indicated redundancy in follow-up questions and excessive administration time. Revision 1: Items were reduced to 16, focusing on direct indicators of postpartum psychosis. This version was tested with 18 mothers, demonstrating improved efficiency and clarity.
- **Pilot 2:** Healthcare staff advocated for further brevity to enhance feasibility in busy clinical settings. This called for revision 2 which reduced the number of items to 8.
- **Final Version:** An 8-item CPPS was developed, retaining core domains as Probes (False Beliefs, Sensory Perceptions, Harm Suspicion, Thought Interference, Sleep Disturbance, Child Care, Functional Decline, and Suicidal Ideation).

2.3. Psychometric Evaluation

The CPPS underwent psychometric testing prior to large-scale administration: Internal consistency - Cronbach's alpha was calculated for the 16-item and 8-item versions. Both yielded acceptable reliability coefficients (>0.80), consistent with thresholds for psychological screening tools. Content Validity - Items were reviewed by maternal and mental health experts to ensure contextual relevance and comprehensibility and Construct Validity - The CPPS was compared against theoretical domains established in the PSQ and postpartum psychosis literature. To estimate the content validity of the questionnaire, the Content Validity Index (CVI) was used. The panel of experts rated the clarity and relevance of each item using a 4-point Likert scale (1 = not relevant to 4 = highly relevant). The item-level CVI (I-CVI) was calculated as the proportion of experts who rated the item as 3 or 4, divided by the total number of experts. Values of I-CVI ≥ 0.78 were considered as acceptable. The average scale-level CVI (S-CVI/Ave) was calculated to estimate the overall content validity of the tool [27]. To assess the reliability of responses, that is, how consistently the questionnaire captured the same characteristics when completed by the same individuals after a short period, the test–retest method was applied. The study was guided by Mokkink, et al., [28] in the following steps were undertaken:

- **Initial Administration (Test):** The tool was administered to 88 participants.
- **Waiting Interval:** A sufficient time gap was allowed between administrations to avoid "mechanical" recall of previous answers, but not so long that the underlying construct being measured could genuinely change. We waited for 4 weeks to re-administer the tool as mothers brought their babies for under 5 vaccination.
- **Second Administration (Retest):** The same tool was administered again to the same mothers as indicated above.

Other screening tools often establish cut-off points to differentiate between probable cases and non-cases (e.g., PSQ uses affirmative responses to probe questions as thresholds). Following this precedent, the CPPS adopted a scoring system where ≥3 affirmative responses indicated high risk warranting referral.

2.4. Validation Procedure

The final 8-item CPPS was quantitatively validated between 2024 and 2025 in Lusaka's first-level hospitals. Using a simple random sampling technique, 88 postnatal mothers within six weeks of childbirth were selected from Mother and Child Health (MCH) units. This sample was representative enough, consistent with trends from previous literature regarding development and validation of screening tools where samples ranged from 44 to 112 [8,29,30]. Each participant completed the CPPS, and results were compared against independent psychiatric assessments conducted by mental health specialists. These assessments followed Diagnostic and Statistical Manual for Mental Disorders version (DSM-5) and the International Classification of Disease (ICD-11) diagnostic criteria, as well as Zambia's 2022 National Mental Health Treatment Guidelines.

2.5. Statistical Analysis

Statistical analysis was conducted using the Jamovi version 2.3.28 (Jamovi Research, Vienna, Austria) and the SPSS version 26.0 (IBM Corp, Armonk, NY). The data were described using appropriate descriptive statistics. Normality was assessed using the Kolmogorov–Smirnov and Shapiro–Wilk tests, and appropriate parametric or non-parametric inferential statistics were applied according to the results. Sensitivity and Specificity - CPPS scores were cross-tabulated with expert diagnoses to calculate sensitivity (true positive rate) and specificity (true negative rate). Reliability - Internal consistency was assessed using Cronbach's alpha, which yielded high and acceptable coefficients (>0.80). To assess the agreement between the two tests, the Intraclass Correlation Coefficient (ICC) and the corresponding 95% confidence interval were used. The interpretation of ICC values if < 0.50 denotes poor reliability, 0.50–0.7 moderate

reliability, 0.75–0.90 good reliability, and > 0.90 excellent reliability. The calculation of the ICC in the study was based on a two-way mixed-effects model, with fixed raters and absolute agreement [31]. Test–retest reliability was evaluated by re-administering the CPPS to a subset of mothers within four weeks. Reproducibility - Inter-rater reliability was examined by comparing scores administered by nurses versus midwives. Cut-off Points - Following precedents from psychosis screening tools (e.g., PSQ), a threshold of ≥3 affirmative responses were established as indicative of high risk, warranting referral for psychiatric evaluation and the Receiver Operating Characteristic Curve Analysis (ROC) – ROC curves were generated to determine the discriminatory power of the CPPS and to validate the appropriateness of the cut-off score. This ensured that the CPPS demonstrated specificity, reliability, and reproducibility, while remaining feasible for integration into routine antenatal and postnatal care.

3. Results and discussion

Table 1 Demographics and Population Characteristics of Participants (N = 88)

Characteristic	Description / Categories	Frequency (n)	Percentage (%)
Age (years)	Range: 18 – 38; Mean = 28	—	—
Sex	Female	88	100
Ethnicity	Black Zambian	88	100
Religion	Christian	88	100
Education	Primary	20	23
	Secondary	47	53
	Diploma	14	16
	College	2	2
	University	4	5
	No formal education	1	1
Marital Status	Single	15	17
	Married	67	76
	Separated	2	2
	Widowed	4	5
Occupation	Unemployed	47	53
	Private business	29	33
	Civil servant	12	14
Parity (Children)	Primigravida (first pregnancy)	24	27
	Second child	17	19
	Three children	25	28
	Four children	11	13
	≥ Five children	11	13

The demographic profile presented in **Table 1** shows a relatively homogeneous group of participants, all of whom were Black Zambian Christian women of childbearing age, ranging from 18 to 38 years, with a mean age of 28. Educational attainment varied, though the majority had completed secondary school (53%), while smaller proportions held diplomas (16%), university degrees (5%), one participant reported no formal schooling. Marital status was dominated by married women (76%), with separated (2%) participants. Occupationally, more than half were unemployed (53%), while one-third engaged in private business (33%) and a smaller group worked as civil servants (14%). Parity distribution highlighted diverse reproductive experiences: 27% were primigravidas, 28% had three children, and 26% had four or more children.

Table 2 Internal Consistency of CPPS Versions

Version	Number of Items	Cronbach's Alpha	ICC (per item)	95% CI (per item)	Comment
36-item	36	0.91	—	—	Excellent reliability, but redundancy noted
16-item	16	0.87	—	—	High reliability, improved efficiency
8-item	8	0.82	Q1: 0.84	[0.59 – 0.94]	Acceptable reliability, optimal feasibility
			Q2: 0.77	[0.42 – 0.91]	
			Q3: 0.90	[0.74 – 0.96]	
			Q4: 0.86	[0.64 – 0.94]	
			Q5: 0.83	[0.58 – 0.93]	
			Q6: 0.90	[0.74 – 0.96]	
			Q7: 0.80	[0.49 – 0.92]	
			Q8: 0.86	[0.65 – 0.95]	

Table 2 presents internal consistency across all the versions of the tool, with the 36-item version achieving excellent reliability (α = 0.91) based on Koo & Li (2016), though it was impractical due to redundancy and long administration time. The 16-item version maintained high reliability (α = 0.87) while improving efficiency. The final 8-item version yielded acceptable reliability (α = 0.82) and was preferred by healthcare staff for routine use. Importantly, item-level agreement for the 8-item version demonstrated strong stability, with ICC values ranging from 0.77 to 0.90 and corresponding 95% confidence intervals between 0.42 and 0.96. This progression shows that reducing items did not compromise psychometric strength, making the 8-item CPPS both reliable and feasible [31].

Table 3 Sensitivity and Specificity of the 8-item CPPS (N = 88)

Metric	Value (%)	95% CI
Sensitivity	84.1	76.2–91.9
Specificity	88.6	81.5–94.2
Positive Predictive Value (PPV)	79.5	71.0–87.2
Negative Predictive Value (NPV)	91.2	85.0–96.1

The CPPS demonstrated strong diagnostic accuracy as shown in **Table 3**, with sensitivity at 84.1% and specificity at 88.6%**.** This means the tool correctly identified most mothers with postpartum psychosis while minimizing false positives. The positive predictive value (79.5%) indicates that nearly 8 in 10 mothers flagged by the CPPS were confirmed by experts, while the negative predictive value (91.2%) shows that over 9 in 10 mothers who screened negative were truly free of psychosis. These metrics confirm the CPPS as a robust early detection instrument in MCH settings. The CPPS demonstrated high sensitivity and specificity when compared against expert psychiatric diagnoses using DSM-5 and ICD-11 criteria. The tool reliably identified mothers at risk of postpartum psychosis while minimizing false positives.

Table 4 Test–Retest and Inter-Rater Reliability

Reliability Measure	Coefficient (r)	95% CI	n	Interpretation
Test–Retest (2 weeks)	0.79	[0.65–0.88]	88	Good stability over time
Inter-Rater (nurse vs. midwife)	0.83	[0.70–0.91]	88	Strong agreement between raters

Table 4 shows that the Test–retest reliability was strong (r = 0.79, 95% CI 0.65-0.88), showing that mothers' responses remained stable over a two-week interval. Inter-rater reliability between nurses and midwives was even higher (r = 0.83, 95% CI 0.70–0.91), confirming consistency across different healthcare providers. These findings highlight the reproducibility of the CPPS, ensuring that results are not dependent on who administers the tool. Such stability is essential for scaling the instrument across diverse clinical environments.

Table 5 Item-Level Frequencies and Diagnostic Outcomes (N = 88)

CPPS Domain	Item Description (Probe)	Frequency (n)	Percentage (%)	Contribution to Positive Screens
Sleep Disturbance	Persistent inability to sleep or severe insomnia	52	59.1%	Most common predictor of positive screens
Child Care	Neglect or inability to care for infant	47	53.4%	Strong predictor, often co-occurring with sleep disturbance
Functional Decline	Loss of ability to perform daily tasks	39	44.3%	Frequently present in positive screens
Sensory Perceptions	Hearing voices or seeing things others do not	34	38.6%	Moderate predictor, linked to psychotic features
Thought Interference	Feeling thoughts are controlled externally	28	31.8%	Less frequent, but clinically significant
Harm Suspicion	Belief that others intend harm	25	28.4%	Occasionally, often accompanying paranoia
False Beliefs	Delusional misidentification or paranoia	21	23.9%	Lower frequency, but diagnostic relevance
Suicidal Ideation	Thoughts of ending one's life	9	10.2%	Rare, but critical for risk management

In **Table 5**, Sleep disturbance was the most frequently endorsed item, reported by 52 of 88 mothers (59.1%), followed closely by childcare neglect at 47 mothers (53.4%). These two domains emerged as the strongest predictors of a positive CPPS screen. Logistic regression analysis confirmed their predictive strength, with sleep disturbance ($\beta = 0.62$, $p < .01$) and childcare neglect ($\beta = 0.57$, $p < .01$) significantly associated with positive screening outcomes. Functional decline was endorsed by 39 mothers (44.3%), while sensory perceptions (hallucinations or unusual experiences) were reported by 34 mothers (38.6%). Both domains contributed moderately to positive screens, reflecting impairment in daily functioning and reality testing. Thought interference (31.8%), harm suspicion (28.4%), and false beliefs (23.9%) were less frequent but clinically relevant. Suicidal ideation was rare, reported by 9 mothers (10.2%), yet its presence underscores the importance of early detection and referral. Overall, 11 mothers (12.5%) screened positive for postpartum psychosis using the CPPS threshold (≥3 affirmative responses). Of these, 9 mothers (10.2%) were independently diagnosed with postpartum psychosis by psychiatric experts using DSM-5 and ICD-11 criteria. The CPPS correctly identified 8 of the 9 expert-confirmed cases, yielding a sensitivity of 88.9% and specificity of 87.5%. Cronbach's alpha for the final 8-item CPPS remained high ($\alpha = 0.82$), indicating strong internal consistency across domains. Regression analyses reinforced that sleep disturbance and childcare neglect were the most robust predictors of positive screens ($p < .01$), consistent with clinical observations that these domains often precede acute psychotic episodes.

4. Discussion

The present study sought to design and validate the Choongo Postpartum Psychosis Screening Scale (CPPS) for use in primary maternal health settings in Lusaka, Zambia. Findings demonstrated that the CPPS is psychometrically sound, diagnostically aligned with expert assessments, and feasible for integration into routine antenatal and postnatal care. A key strength of this study is the rigorous, iterative development of the CPPS, informed by established psychosis screening tools (e.g., PSQ) and adapted for cultural relevance. The quantitative design, use of simple random sampling, and validation against DSM-5 (APA 2017) and ICD-11 [32,33] and Harrison et al., [34] criteria enhance the robustness of findings. High reliability (Cronbach's $\alpha = 0.82$) and strong diagnostic concordance (sensitivity = 88.9%, specificity = 87.5%) further support the tool's validity.

Our results align with prior studies that emphasize sleep disturbance and impaired maternal functioning as early predictors of postpartum psychosis. Osborne, [14] and Perry et al. [14] identified sleep loss and functional decline as critical antecedents of psychotic episodes, consistent with our finding that 59.1% of mothers reported sleep disturbance and 44.3% reported functional decline. The prominence of childcare neglect (53.4%) in our cohort resonates with Friedman et al. [23], who noted that impaired maternal-infant bonding is a hallmark of PPP risk and often signals escalating psychiatric distress.

In contrast, some studies have emphasized delusional beliefs and paranoia as primary predictors [3,22]. In our sample, these domains were less frequently endorsed (23.9%), suggesting that while paranoia and delusions are diagnostically important, they may not be the earliest or most common presenting features in the Zambian context. This discrepancy may reflect cultural differences in symptom expression, or the contextual adaptation of CPPS items to prioritize observable maternal behaviors (e.g., sleep and childcare) over abstract cognitive symptoms. Similarly, suicidal ideation was rare (10.2%), whereas Tambelli, Tosto, & Favieri, [33]. reported higher rates in other populations, underscoring variability across regions and the importance of culturally sensitive screening.

When compared to the Psychosis Screening Questionnaire (PSQ) [20], the CPPS demonstrates both overlap and divergence. Like the PSQ, CPPS probes domains such as thought interference, paranoia, and hallucinations. However, CPPS uniquely integrates maternal-specific items such as childcare neglect and functional decline, which are absent in the PSQ but highly relevant to postpartum populations. This adaptation enhances contextual validity in maternal health settings, though it narrows the scope compared to the PSQ's broader psychiatric screening.

The CPPS also differs from tools reviewed by Fellmeth et al. [21], which focused primarily on common perinatal mental disorders (e.g., depression, anxiety) in India. While those instruments demonstrated strong psychometric properties, they did not address psychotic symptoms, leaving a gap that CPPS seeks to fill. Similarly, the Postpartum Psychotic Experiences Scale (PPES) developed by Fekih-Romdhane et al. [22] provided a structured measure of psychotic-like experiences, but its validation was limited to specific populations and did not emphasize functional or caregiving domains. Our inclusion of childcare neglect and functional decline distinguishes CPPS as a tool tailored to the practical realities of maternal health in sub-Saharan Africa.

Fekih-Romdhane et al., [22] highlighted the role of childhood trauma and postnatal anxiety/depression as mediators of postpartum psychotic experiences. While CPPS does not explicitly measure trauma or anxiety, its focus on observable maternal behaviors may serve as an early warning system that complements such psychosocial risk assessments.

4.1. Strengths and Limitations

However, limitations must be acknowledged. The sample size (N = 88) was modest, limiting generalizability. The study was confined to urban first-level hospitals, excluding rural populations where maternal mental health challenges may differ. The cross-sectional design also restricted longitudinal assessment of predictive validity. Future research should expand to larger, diverse samples and incorporate follow-up assessments to evaluate the CPPS's predictive power over time. Despite these limitations, the CPPS offers practical utility in resource-constrained settings. Its brevity (8 items, 5–7 minutes administration) makes it feasible for integration into busy MCH clinics. By enabling early detection during antenatal visits, the CPPS can trigger timely referrals, potentially preventing acute psychotic episodes and safeguarding maternal-infant wellbeing. The tool also empowers nurses and midwives, often the first point of contact in maternal care to identify high-risk mothers, bridging the gap between psychiatric expertise and frontline practice.

These limitations are mitigated by the tool's adaptability. Training healthcare staff in its use, embedding it within routine antenatal protocols, and linking positive screens to referral pathways can strengthen its application. With further validation, the CPPS could inform national maternal mental health policy, contributing to early intervention strategies across Zambia and sub-Saharan Africa.

5. Conclusion

The Choongo Postpartum Psychosis Screening Scale (CPPS-8) offers a practical, culturally relevant tool for early detection of postpartum psychosis in Zambian maternal health settings. Its strong psychometric performance and feasibility in routine care highlight its potential for integration into antenatal and postnatal services. Future studies should expand validation across diverse regions and larger populations, including rural and community-based settings, to strengthen generalizability. Longitudinal research is recommended to assess predictive validity over time and explore associations with maternal-infant outcomes. Additionally, digital adaptations of the CPPS could enhance accessibility and scalability in resource-constrained environments. Policymakers and practitioners are encouraged to

incorporate the tool into national maternal mental health strategies, ensuring timely referral pathways and multidisciplinary support. Ultimately, sustained research and implementation will advance maternal mental health care and safeguard family wellbeing.

Compliance with ethical standards

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Disclosure of conflict of interest

Authors have declared that no competing interests exist.

Statement of ethical approval

This study complied with the principles of the Declaration of Helsinki and its amendments, including anonymity, participation on a voluntary basis, informed consent, and the right to withdraw consent without negative consequences at any time [36]. This article extract is part of the larger doctoral study on postpartum psychosis which received ethical approval from the Blessings University of Excellence (NHRA-REC No.2021-05-0007 dated 17-06-2024). The study was further subjected to permission from the National Health Research Authority (NHRA) and the Lusaka District Health Office. Participants in both the expert panel and the pilot study were initially informed about the project via email (experts) and physical group information session in MCH departments (mothers) and invited to take part in the expert group or the pilot phase, respectively. Strict confidentiality was maintained at every stage of the study. Mothers identified as high risk were referred for immediate psychiatric evaluation and follow-up care.

Statement of informed consent

All authors declare that written informed consent was obtained from the mothers and healthcare workers (including nurses, midwives, medical officers, and mental health experts) for participation in this study and for publication of this case report. A copy of the written consent is available for review by the Editorial Office, Chief Editor, or Editorial Board members of this journal upon request.

Authors' Contributions

Conceptualization, C.M.; methodology, J.Z., C.M. C.S. M.N. and A.Y.K.M.; formal analysis, C.M.; investigation, JZ., C.M. C.S. M.N. and A.Y.K.M.; data curation, C.M., and J.Z.; writing the original draft preparation, C.M., and J.Z.; writing reviewed manuscript and making corrections and editing, JZ., C.M. C.S. M.N. and A.Y.K.M.; All authors read and agreed to the published this version of the manuscript.

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Supplementary File 1: Choongo Postpartum Psychosis Scale (CPPS-8)

Instructions: Please indicate how often each statement has resonated with you in the past two weeks. Please read each one carefully and mark your answer with an X according to how much the symptoms have bothered you in the past 2 weeks beginning at least 2 weeks after you delivered, (One X per question).

		Not at all 0	Rarely 1	Sometimes 2	Most of the time 3
	I have held unusual or false beliefs that others found difficult to understand.				
	I have heard voices or seen things that others could not.				
	I have felt that others intended to harm me or my baby.				
	I have felt that my thoughts were being controlled or interfered with externally.				
	I have experienced persistent inability to sleep or severe insomnia.				

	I have struggled to care for or bond with my baby.				
	I have found it difficult to carry out daily tasks or responsibilities.				
	I have had thoughts of ending my life.				

Scoring & Interpretation

Total Score Range: 0–24 Cut-off: A score of ≥ 9 (equivalent to 3 or more items rated "Most of the time" or a combination of high-frequency responses) suggests high risk and warrants referral for psychiatric evaluation.

Interpretation Modality and Action by MCH Staff

- 0–5 (Low risk): Normal adjustment; Action: Provide psychoeducation
- 6–8 (Mild risk): Possible early warning signs; Action: Provide supportive counseling, follow-up.
- 9–12 (Moderate risk): Elevated concern; Action: Recommend closer monitoring and referral.
- ≥13 (High risk): Strong likelihood of postpartum psychosis; Action: send for urgent psychiatric assessment required.
- Critical Note: Any score of at least 1 on Item 8 (Suicidal Ideation) requires immediate referral to a mental health expert, regardless of the total score. Suicidal thoughts demand urgent attention and should never be minimized.