

ORIGINAL RESEARCH ARTICLE

Qualitative assessment of maternal healthcare services: Infrastructure, staffing, and quality of care in Lejweleputswa District Municipality, South Africa

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Abstract

Maternal healthcare performance varies widely across South Africa, shaped by uneven resources, staffing constraints, and service-delivery pressures. This study explored how healthcare providers experience the conditions that influence maternal care, focusing on infrastructure, staffing, and quality-of-care processes. Using a qualitative case study design, semi-structured interviews were conducted with nurses, midwives, and medical officers working in public-sector maternity services. Data were analysed using an interpretative phenomenological approach. Participants described persistent infrastructure limitations, high workloads linked to inadequate staffing, and challenges in maintaining consistent, timely care. They also highlighted inconsistencies in guideline adherence and communication barriers that affected patient experience. These intersecting factors varied across facilities but collectively shaped the day-to-day delivery of maternal services. The findings underscore the need for context-sensitive strategies that address resource gaps, strengthen staffing capacity, and support more reliable quality-of-care practices. (*Afr J Reprod Health* 2026; 30 [16]:31-41).

Keywords: Maternal health; healthcare; staffing; health systems; Service delivery

Résumé

La performance des soins de santé maternelle varie considérablement en Afrique du Sud, sous l'influence de disparités dans les ressources, de contraintes d'effectifs et de pressions liées à la prestation des services. Cette étude a examiné la manière dont les professionnels de santé perçoivent les conditions influençant les soins maternels, en se concentrant sur les infrastructures, les effectifs et les processus de qualité des soins. Dans le cadre d'une étude de cas qualitative, des entretiens semi-directifs ont été menés auprès d'infirmiers, de sages-femmes et de médecins travaillant dans des services de maternité du secteur public. Les données ont été analysées selon une approche phénoménologique interprétative. Les participants ont fait état de lacunes persistantes au niveau des infrastructures, d'une charge de travail élevée due à des effectifs insuffisants et de difficultés à assurer des soins constants et rapides. Ils ont également souligné des incohérences dans le respect des directives ainsi que des obstacles à la communication affectant l'expérience des patientes. Ces facteurs interdépendants variaient d'un établissement à l'autre, mais façonnaient collectivement la prestation quotidienne des services de santé maternelle. Les résultats mettent en évidence la nécessité de stratégies adaptées au contexte, visant à combler les manques de ressources, à renforcer les effectifs et à favoriser des pratiques de qualité plus fiables. (*Afr J Reprod Health* 2026; 30 [16]:31-41).

Mots-clés: Maternal health; healthcare; staffing; health systems; Service delivery

Introduction

Maternal health continues to serve as a sensitive measure of health-system performance in South Africa, and the persistent disparities in maternal mortality highlight how unevenly resources are distributed across the country.¹ Although national policies have contributed to improvements in reproductive health services, many rural and semi-

rural districts still operate under conditions that complicate the delivery of consistent, high-quality care.² Facilities often struggle with limited physical space, aging or insufficient equipment, and transport delays that affect emergency referrals. These infrastructure pressures are closely intertwined with chronic staffing constraints. Shortages of nurses, midwives, and medical officers, together with high workloads and limited opportunities for ongoing

professional development, create an environment where reliable adherence to clinical guidelines becomes difficult.³ In such settings, the quality of maternal care is shaped as much by the structural conditions of the facility as by the clinical skills of the providers, making it essential to understand how these constraints influence daily practice.⁴

A substantial body of research in South Africa has documented the system-level factors contributing to poor maternal outcomes⁵. Many studies draw on national audits, provincial performance reports, and quantitative analyses to describe trends in infrastructure readiness, staffing shortages, and delays in care.⁶ While these assessments provide important overviews, they tend to remain at a distance from the lived realities of frontline staff.⁷ Qualitative studies have started to fill this gap in some provinces, showing how providers negotiate workload pressures, organizational cultures, and communication challenges. Yet this body of work remains limited, unevenly distributed across the country, and often centered on regions with prior research activity.⁸ As a result, large areas with documented service-delivery challenges still lack detailed, qualitative accounts of how providers experience the intersection of infrastructure, staffing, and quality-of-care demands.⁹ This includes districts where routine provincial monitoring has noted recurring resource constraints but where systematic provider-centred research has not been undertaken.¹⁰

The absence of such context-specific evidence presents both a practical and a scientific problem. Without a clear understanding of how providers interpret and manage the constraints within their working environment, health-system interventions risk overlooking the factors that shape whether recommended practices can be implemented effectively.¹¹

Quantitative indicators can show where delays or deficiencies occur, but they do not explain how staff respond to these pressures, how clinical decisions are influenced by local conditions, or how facility-level adaptations emerge in response to resource limitations.¹² These knowledge gaps limit the ability of policymakers and managers to design targeted strategies that are responsive to the realities of maternal health service delivery.¹³

This study addresses these gaps by examining how healthcare providers experience maternal healthcare delivery in a district characterized by documented resource pressures.¹⁴ The aim is to understand how providers navigate the interplay between infrastructure limitations, staffing patterns, and the processes that shape the quality of care. The study focuses on three core domains that consistently arise in national assessments: the readiness of infrastructure to support routine and emergency care, the distribution and workload of staff involved in maternal services, and the factors influencing clinical consistency and patient experience.¹⁵ By grounding the analysis in the perspectives of those directly involved in day-to-day care, the study seeks to generate insights that can inform more context-sensitive approaches to strengthening maternal health services.¹⁶

Methods

Study design

This study employed a qualitative case study design to examine how maternal healthcare services operate within everyday clinical environments. A case study approach was appropriate because it allows for an in-depth exploration of complex, context-dependent service delivery processes that quantitative indicators alone cannot adequately capture. The design aligns with an interpretive paradigm, which recognises that providers' experiences, interpretations, and meaning-making processes are central to understanding how maternal care is delivered under varying structural conditions.

Study setting

The research was conducted in Lejweleputswa District Municipality in the Free State Province in South Africa across three public healthcare facilities situated in an urban, peri-urban, and rural context within the same district. These facilities varied in maternal service volume, staffing composition, and resource availability, offering a spectrum of service-delivery environments. All three sites provided antenatal care, labour management, and postnatal services, although the scale and capabilities differed. Data collection occurred over a two-month period.

when routine maternal services were being offered without major disruptions, allowing observations and interviews to reflect typical operational conditions.

Participants

Participants consisted of healthcare professionals with direct involvement in maternal healthcare, including nurses, midwives, medical officers, and managers. Eligibility required a minimum of six months' experience in maternal health services to ensure adequate familiarity with facility operations. A purposive sampling strategy was used to secure maximum variation across professional roles and facility types. Fifty individuals were approached; thirty-two agreed to participate, while eighteen declined due to workload restrictions or limited availability. The final sample captured a broad cross-section of maternity service providers, strengthening the diversity of perspectives represented in the data.

Data collection

Data were generated through semi-structured, face-to-face interviews that encouraged participants to describe their experiences while allowing the interviewer to probe deeper into relevant areas. The interview guide was developed based on existing maternal health literature and refined through pilot testing with two non-study staff members to enhance clarity and relevance. Interviews, lasting between 30 and 60 minutes, were conducted in private spaces within the facilities. All interviews were audio-recorded with participant permission. Field notes were taken to capture contextual observations, non-verbal cues, and immediate researcher reflections that supported later analysis.

Variables

The study focused on three analytical domains identified in national maternal health assessments as central to service quality: infrastructure conditions, staffing and human-resource dynamics, and quality-of-care processes. These domains shaped the development of the interview guide and informed the analytical framework. Within each domain, participants were encouraged to discuss challenges

encountered, how they influenced clinical workflows, and how providers adapted to local constraints.

Data analysis

Interview recordings were transcribed verbatim and analysed using Interpretative Phenomenological Analysis (IPA). The analysis began with repeated readings of transcripts to gain familiarity with participants' narratives. Initial coding captured descriptive, linguistic, and conceptual observations, which were then organised into emergent themes. These themes were reviewed across participants and facilities to identify shared patterns and points of divergence. The analytical process was supported by detailed memos, iterative theme mapping, and comparisons between coded data and original transcripts to ensure fidelity to participants' experiences. Trustworthiness was enhanced through credibility, dependability, and confirmability strategies, including peer debriefing with an independent qualitative researcher and maintaining a reflexive record throughout the study.

Bias management

Several measures were employed to mitigate bias. The interviewer had no prior relationship with participants and was not employed within any of the study facilities, reducing role-based influence. Reflexive journaling was used to monitor personal assumptions and analytical decisions. An audit trail documented the progression from raw data to final themes, enhancing transparency. Member checking with a subset of participants helped verify that interpretations resonated with their experiences.

Study size

The final sample size of thirty-two participants was determined through the principle of thematic saturation. As interviews proceeded, it became evident that no substantially new insights were emerging and that the existing data provided adequate depth across all analytical domains. Saturation, rather than a predetermined numerical target, guided the decision to conclude data collection.

Methodological limitations

The study relied on self-reported experiences, which may reflect subjective perspectives rather than objective measures of facility performance. Additionally, as a case study conducted in selected facilities, the findings may not represent all maternal healthcare settings.

Nevertheless, the depth and contextual richness of the accounts offer valuable insight into how structural and staffing constraints shape maternal care in comparable resource-limited environments.

Ethics

Ethical approval for the study was granted DUT IREC reference Number IREC 056/24 and gatekeeper approval by the Free State Provincial Department of Health reference number FS_202407_013, and the study adhered to the principles outlined in the Declaration of Helsinki. Written informed consent was obtained from all participants, who were informed of the study's purpose, voluntary nature, and their right to withdraw at any time. Confidentiality was ensured by assigning pseudonyms, removing identifying details, and securely storing all data. Formal gatekeeper permission was obtained at district and facility levels, permitting access to staff and locations for data collection.

Results

Participant flow

A total of fifty healthcare professionals were approached for participation across the three study facilities. Of these, thirty-two individuals agreed to take part and completed interviews. Eighteen declined, citing reasons that included workload pressures, time limitations, and competing clinical responsibilities. No participants withdrew after consenting, and no interviews were excluded due to procedural issues. All interviews were completed within the planned data collection period. A summary of the participant flow is provided in Figure 1.

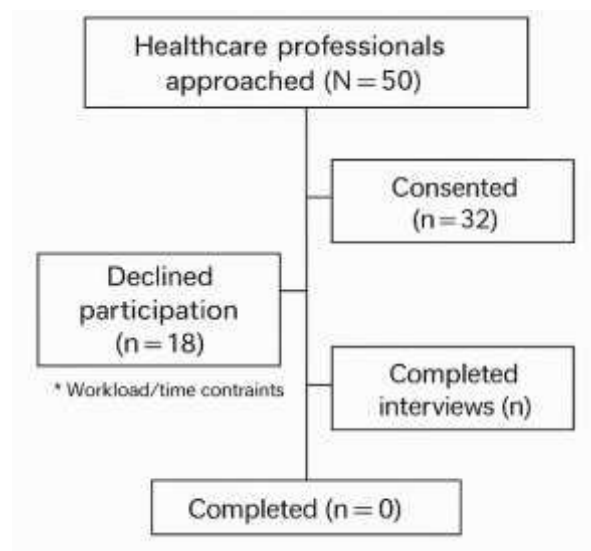


Figure 1: Participant flow diagram

Participant characteristics

Thirty-two participants took part in the study. The group consisted of nurses, midwives, medical officers, and facility managers who were directly involved in maternal healthcare delivery. Participants represented a range of ages and professional experience levels, with service duration varying from less than one year to over twenty years. Across the sample, most participants had worked for several years in maternal health roles and were routinely responsible for antenatal care, labour management, or oversight of maternal services. A summary of participant demographics, professional roles, and years of experience is presented in Table 1.

Themes and sub-themes

Three major themes were identified across the thirty-two interviews: Infrastructure Constraints, Staffing Challenges, and Quality-of-Care Concerns. These themes appeared consistently across all three facilities, although the intensity and frequency of specific sub-themes varied. Illustrative quotes are provided in Table 2 to demonstrate how participants expressed these issues. The quotations are included strictly as factual evidence and not for interpretive analysis.

Table 1: Participant demographics and professional characteristics

Variable	Category	Frequency (n=32)
Age (years)	20–29	6
	30–39	12
	40–49	10
	50+	4
Gender	Female	26
	Male	6
Professional Role	Professional Nurse	12
	Midwife	10
	Medical Officer	6
	Facility Manager/Supervisor	4
Years of Professional Experience	<2 years	3
	2–5 years	9
	6–10 years	8
	>10 years	12
Years in Maternal Health	<2 years	5
	2–5 years	11
	6–10 years	10
	>10 years	6
Facility Type	Urban	12
	Peri-urban	10
	Rural	10

Theme 1: Infrastructure constraints

Participants described several operational limitations linked to the physical and material resources available for maternal services. Reports included shortages of key equipment such as fetal monitoring devices, blood pressure machines, delivery beds, and emergency resuscitation tools. Many participants indicated frequent equipment malfunction, delayed repairs, and the need to share devices across departments.

Space constraints were also prominent. Several providers noted overcrowded labour rooms, limited antenatal consultation areas, and insufficient private space for examinations. Facilities with high patient loads reported difficulties maintaining patient privacy and managing simultaneous emergencies.

Transport and ambulance delays emerged across facilities, particularly in rural settings. Participants described situations where patient referrals were delayed because of prolonged ambulance arrival times, limited ambulance availability, or long distances to referral hospitals.

Theme 2: Staffing challenges

Staffing challenges included shortages of nurses and midwives, high patient-to-staff ratios, and reliance on temporary or rotating staff. These issues were most pronounced in the rural site but also present in urban and peri-urban facilities. Participants reported extended working hours, high physical workload, and insufficient rest between shifts.

Limited opportunities for training were frequently mentioned, with staff noting irregular access to updates on clinical guidelines, emergency obstetric protocols, and new maternal health initiatives. Staff turnover and periodic reassignments further exacerbated shortages.

Theme 3: Quality-of-care concerns

Participants reported a range of issues affecting the consistency of maternal care. Delays in assessment were frequently linked to workload and inadequate staff numbers. Some staff described difficulty adhering to clinical guidelines when facing multiple simultaneous demands.

Communication challenges appeared in two forms: internal team communication and provider–patient interaction. Some participants reported breakdowns in communication among staff, particularly during shift changes. Others noted that time pressures reduced opportunities for meaningful communication with patients, affecting the overall service experience.

Subgroup variations

Variations by professional role

Differences emerged across professional groups. Nurses and midwives reported the greatest exposure to daily workload pressures and the immediate impact of resource shortages. They frequently described challenges in managing patient volume

Table 2: Themes, sub-themes, and illustrative participant quotations

Theme	Sub-theme	Example evidence (Illustrative quotes)
Infrastructure Constraints	Equipment shortages	“We often have to wait for the machine to be available... sometimes it is not working.”
	Space limitations	“The labour ward becomes overcrowded very quickly, and privacy is hard to maintain.”
	Transport delays	“The ambulance took long to arrive, and referrals get delayed often.”
Staffing Challenges	Staff shortages	“There are days where two of us cover the whole maternity section.”
	High workload	“The number of patients keeps increasing, but staff stays the same.”
	Limited training opportunities	“We don’t get regular updates or training on new guidelines.”
Quality-of-Care Concerns	Delays in care	“Sometimes patients wait too long because we are too few on duty.”
	Guideline adherence	“We try our best, but with limited staff it’s hard to follow every step as required.”
	Communication issues	“We want to explain more to patients, but there is not always enough time.”

and performing clinical assessments under time constraints. Medical officers emphasised issues related to emergency referrals and availability of diagnostic equipment. Some expressed concern about delays in obtaining laboratory results or accessing functional monitoring devices during critical cases. Facility managers primarily highlighted systemic challenges, including procurement delays, communication with district authorities, and staffing allocation difficulties.

Variations by facility type

Distinct patterns appeared across the three facilities. The urban facility reported fewer equipment shortages but experienced high patient loads, with staff describing challenges related more to service volume than the absence of resources. The peri-urban facility displayed moderate levels of both resource limitations and workload pressures, and participants described a combination of infrastructural and staffing concerns. In contrast, the rural facility reported the highest frequency of transport delays, staff shortages, and equipment limitations. Ambulance availability was identified as a major concern, with participants describing prolonged waiting times for emergency referrals.

Negative or deviant cases

A small number of accounts differed from the dominant themes identified in the study. Two

participants described consistent access to functioning equipment within their units, while one participant reported regular in-service training and mentorship opportunities. Another staff member characterised communication within their team as consistently strong, and there were occasional reports of efficient ambulance response times during specific shifts. Although these experiences were less common, they demonstrate that some units or shifts experience fewer constraints than others. These variations were included as part of the factual findings and indicate differences in resource distribution, operational routines, or facility-level organisation.

Discussion

Key findings

This study set out to explore how healthcare providers experience the conditions that shape maternal healthcare delivery, particularly in relation to infrastructure readiness, staffing patterns, and the quality-of-care processes that unfold during routine clinical work.¹⁷ The findings highlight three interconnected areas that consistently influenced service delivery across the facilities involved.¹⁸ Providers described limitations in equipment availability and physical space, persistent human-resource pressures linked to staff shortages and

heavy workloads, and several recurring challenges that affected the timeliness and consistency of care.¹⁹ Together, these results show how maternal healthcare is deeply shaped by practical constraints that staff encounter on a daily basis, and how these constraints affect their ability to follow established guidelines, maintain patient flow, and communicate effectively with mothers seeking care.²⁰

Interpretation

The findings resonate strongly with existing literature documenting systemic pressures within maternal healthcare systems, particularly in resource-limited districts.²¹ Equipment shortages and space constraints have been widely cited as contributors to delays in assessment and emergency care, and the accounts provided here further illustrate how these constraints disrupt everyday workflows.²² The staffing issues described by participants especially shortages and high workload reflect longstanding concerns about maternal health workforce capacity, but the narratives in this study show how these pressures operate at the micro-level of clinical practice.²³ For example, delays in care were often attributed not to lack of knowledge or unwillingness to follow guidelines, but to the practical challenge of managing multiple simultaneous demands in an under-resourced environment.²⁴

Facility-level differences also provide important context. The urban site had better access to equipment but faced high patient volume, while the rural facility experienced the most significant resource shortages and transport delays.²⁵ These differences highlight how local conditions shape service delivery even within the same district, reinforcing the need for context-sensitive planning rather than uniform interventions.²⁶

The patterns identified here align with broader maternal health frameworks that emphasise the interaction between structural determinants and clinical practice.²⁷ The interplay of infrastructure, staffing, and communication challenges observed in this study reflects the complexity of maternal care systems and supports calls for multi-level strategies that acknowledge both resource availability and the lived realities of staff working within these systems.²⁸

Significance and contribution

This study contributes to maternal healthcare research by offering a detailed, provider-centred view of how care is delivered within facilities facing persistent structural pressures.²⁹ While national audits and statistical evaluations identify patterns and trends, they often provide limited insight into how these issues are experienced within clinical environments.³⁰ By focusing on the perspectives of healthcare providers directly involved in antenatal, intrapartum, and postnatal care, this study offers a more grounded understanding of how system-level challenges manifest in daily practice.³¹ It also contributes to policy and service planning by highlighting how staffing shortages, equipment inadequacies, and transport delays intersect to shape care processes.³² These insights are valuable for health system strengthening strategies that aim to improve maternal health outcomes, particularly in districts where resource constraints are persistent and difficult to resolve quickly.³³ For reproductive health policy, the findings underscore the importance of investments that support both material resources and the human factors involved in delivering consistent, high-quality maternal care.³⁴

Limitations

As with all qualitative research, several limitations should be acknowledged. The study relied on self-reported experiences, and participants' accounts may reflect personal perceptions shaped by workload fluctuations, individual expectations, or recent experiences within their units.³⁵ The sample, though diverse, included uneven numbers across professional roles, which may have influenced how strongly certain perspectives appeared in the data.³⁶ The case study design focuses on depth rather than breadth, which limits the extent to which the findings can be generalised statistically.³⁷ However, the consistency of experiences across participants suggests that the issues identified are meaningful within the context studied, and the focus on provider perspectives remains valuable for understanding the operational realities of maternal healthcare. The limitations do not substantially undermine the findings but do define the scope within which they should be interpreted.³⁸

Generalisability

While qualitative findings are not intended to be generalised in a statistical sense, the concept of transferability offers a useful lens for understanding the relevance of these results beyond the immediate study setting.³⁹ Many maternal healthcare facilities in resource-constrained environments face similar challenges, including equipment shortages, understaffing, and difficulties with referral transport.⁴⁰ As such, the patterns documented here may be recognisable to providers working in comparable settings, both within and beyond South Africa. The themes identified resource limitations, workload pressures, and communication constraints are common across various low- and middle-income health systems, suggesting that the insights from this study can inform broader discussions on improving maternal healthcare delivery.⁴¹ While local context always matters, the experiences described by participants may help guide strategies aimed at strengthening maternal services in other districts facing comparable constraints.

Conclusion

This study examined how healthcare providers experience the structural and operational conditions that shape maternal healthcare delivery, focusing on infrastructure, staffing, and the quality-of-care processes that influence routine clinical work. The findings show that these elements interact in ways that directly affect the capacity of providers to deliver timely, consistent, and guideline-aligned maternal care. Although the specific challenges varied across facilities, the underlying issues were shared: limited equipment and physical space, persistent staffing shortages, and pressures on communication and workflow that create delays during critical moments of care. These results suggest several implications for practice. Investments that target basic infrastructure, reliable transport for referrals, and more stable staffing patterns would support providers' ability to manage care more effectively. Strengthening opportunities for ongoing training may also help staff maintain confidence in applying updated guidelines, particularly in environments where workload pressures and equipment limitations routinely

disrupt clinical routines. Improving coordination between facility and district management structures could further enhance resource planning and support more predictable service delivery. Further research is needed to build on these findings. Studies that incorporate patient perspectives could deepen understanding of how structural constraints affect experiences across the continuum of care. Comparative work across districts or provinces may also clarify how local administrative conditions influence maternal service performance. Finally, implementation-focused research could help identify feasible strategies for improving maternal healthcare in settings where resource limitations are likely to persist. Taken together, the insights generated here underscore the importance of understanding maternal healthcare delivery through the experiences of those who provide it. By considering how structural and human-resource factors shape daily practice, health system planners and policymakers may be better equipped to design interventions that reflect the realities of frontline care.

Recommendations

Based on the findings, several practical steps are proposed to strengthen maternal healthcare services in Lejweleputswa District and other similar rural areas.

Improve infrastructure and facility conditions

Upgrading and maintaining essential infrastructure should be a priority. This includes establishing dedicated maternity wards, ensuring regular maintenance of basic utilities, and improving sanitation and emergency response systems. Clear procurement processes are needed to guarantee the availability of functional fetal monitors, ultrasound machines, and other critical equipment. Reliable infrastructure will reduce delays, prevent avoidable complications, and create safer environments for mothers and newborns.

Strengthen staffing and retention strategies

Effective staffing strategies are essential to reduce burnout and improve the quality of care. Approaches may include rural placement incentives, opportunities for career development, and workplace conditions that support staff wellbeing. Assessing

skill distribution across facilities and reallocating staff where needed can help ensure that rural facilities are not disproportionately understaffed. A more stable workforce will improve clinical responsiveness and reduce treatment delays.

Expand training and professional development

Regular and structured training programs should be implemented to ensure that healthcare professionals have up-to-date skills in maternal care, including emergency obstetric management. Mentorship programs, peer learning sessions, and continuous professional development opportunities should be accessible at all facilities. Strengthened training will help staff handle complex cases more confidently and ensure more consistent adherence to clinical guidelines.

Promote respectful, patient-centred care

Improving the interpersonal experience of maternal healthcare is essential. Training in communication, cultural sensitivity, and respectful care practices can help strengthen provider–patient relationships. Creating an atmosphere where patients feel heard, supported, and respected can improve service engagement and reduce delays in seeking care.

Establish strong monitoring and accountability systems

Facilities should implement routine audits of staffing levels, equipment availability, and adherence to clinical guidelines. Supportive supervision not punitive oversight can help identify challenges early and guide improvements. Monitoring systems can also highlight best practices that could be expanded across the district.

Encourage collaboration and shared learning across facilities

The positive experiences shared by staff in certain facilities suggest that improvement is possible even within existing constraints. Creating platforms where facilities can exchange successful strategies such as innovations in workflow, communication, or triage can help spread effective practices throughout the district.

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Conflict of interest

The authors declare that no competing interests exist that could have influenced the impartiality of this research.

Author contributions

Simbarashe Magaisa: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Project administration, writing original draft, Writing review & editing.
Nirmala Dorasamy: Conceptualization, Methodology, Validation, Writing – review & editing.

Availability of data

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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