

Recognition and Management of Prenatal Maternal Distress in Women Attending Maternity Services in Lusaka, Zambia

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Abstract

Introduction: Despite the presence of several risk factors for Prenatal Maternal Distress (PMD) and its associated negative effects, the condition is not routinely assessed as part of the Antenatal Care Package in Zambia. This study, therefore, aimed to assess the extent to which healthcare professionals can recognize and manage PMD in a care environment that does not mandate routine assessment for it. **Methods:** A cross-sectional study was conducted, with data collected through a self-administered questionnaire administered to 190 randomly sampled healthcare professionals working at selected hospitals in Lusaka. Data analysis was conducted using descriptive statistics, with $P < 0.05$ indicative of statistical significance. **Results:** Majority (76.3%) had no means of recognizing PMD, and slightly below half (31.1%) mentioned managing a woman with PMD. Most of the respondents (71.6%) had high knowledge of PMD, though (88.4%) could not define what it is. Slightly less than half (48.4%) described their workload as heavy, with (67%) having a positive attitude towards understanding PMD. **Conclusions:** Mental Health Assessments should be part of prenatal and antenatal care in Zambia to enhance the recognition and management of PMD and its associated conditions. Hospital managements must educate healthcare providers on the recognition and management of PMD.

Keywords

Prenatal, Maternal Distress, Psychological Distress

1. Introduction

In Zambia, the routine assessment of prenatal distress during pregnancy is not standard practice, as the Antenatal Care Package (ACP) lacks provisions for evaluating mental health status. Consequently, it is imperative to ascertain the capability of healthcare professionals to identify and manage prenatal maternal distress in an environment where mandated assessments are absent. This evaluation can guide the development or adaptation of an ACP that incorporates mental health evaluations and facilitates long-term care interventions aimed at improving the mental well-being of pregnant women through the early identification and management of prenatal distress.

The adverse effects of prenatal distress necessitate prompt and accurate identification and management by healthcare professionals to ensure timely and appropriate obstetric care. Inadequate care during this critical period disrupts the continuum of care and negatively impacts both mothers and infants. Increased prenatal distress is associated with complications such as preterm delivery, low birth weight, and delayed foetal growth and development [1]-[4]. Moreover, prenatal distress negatively influences maternal-foetal attachment and is a contributing factor to postpartum depression [5]. Factors including high-risk pregnancies, chronic illnesses, health complications during pregnancy, and medication use related to these conditions have been correlated with elevated levels of prenatal distress among pregnant women [6].

1.1. Background

Clinicians and other healthcare providers often underestimate the importance of assessing a pregnant woman's mental health during prenatal visits, assuming that some degree of mental distress is normal throughout pregnancy. This assumption was highlighted in a UK study [7], where healthcare professionals commonly regarded anxiety during the perinatal period as "normal" or "understandable". During antenatal visits, the primary focus of most healthcare workers is on the physical well-being of the pregnant woman, the health of the foetus, and the ideal progression of the pregnancy [8] [9]. This narrow focus often results in a lack of care aimed at improving the mental well-being of the pregnant woman.

However, several recent studies [5] [6] [10]-[13] emphasize the detrimental effects of prenatal mental health issues on pregnancy outcomes, underscoring the necessity of assessing a pregnant woman's psychological state for quality obstetric care. Yilmaz and Sahin (2019) asserted that pregnancy is a life event that induces physical and psychosocial changes, which most women experience as very stressful [6]. Pregnant women often face distress from various pregnancy-specific issues, including physical symptoms, changes in body image, social dynamics, emotions, parenting concerns, relationships, medical problems, anxiety about labour and delivery, and worries about the baby's health [14].

While pregnancy can bring joy and positive expectations, it can also lead to stress and difficulties [15].

This period involves significant transitions that often culminate in intense emotions such as joy, excitement, confusion, and stress [11]. The stress specific to pregnancy is referred to as prenatal distress [6]. Atasever (2018) defined prenatal distress as the anxiety and concerns arising from changes in a woman's body, lifestyle, roles, and relationships, including responsibilities due to pregnancy [16]. Maternal prenatal and postnatal distress, collectively known as perinatal distress, can manifest as anxiety, stress, or depression at any time during pregnancy and in the first year postpartum [17].

Although prevalence rates vary by population characteristics, timing, and screening type, previous systematic reviews have suggested that up to 18% of pregnant women experience depression, 14% to 54% experience anxiety, and many experience both [18]. In Zambia, a study by Mwape *et al.* (2016) revealed that 39.9% of pregnant women had psychological distress [19]. Factors associated with this distress included worries about HIV status, uncertainty about survival due to high maternal mortality, feelings of loss of control, and inadequate social support. Understanding prenatal maternal distress could help healthcare professionals provide appropriate support for a healthy pregnancy [6].

Pregnant women must be regularly assessed and educated on managing concerns and fears related to the prenatal, birth, and postnatal periods, as well as the difficulties encountered during pregnancy.

1.2. Recognition of Prenatal Maternal Distress

Dawn *et al.* (2015) stated that recognizing and managing prenatal distress may be more effective if pregnancy is viewed within the broader context of a woman's life, including her partner, family, friends, neighbourhood, and community—all of which influence her mental health and responses to pregnancy [20].

Healthcare professionals must consider these levels of influence when screening and treating maternal distress in the perinatal period. Healthcare professionals need to recognize that a woman's ability to understand or respond to a diagnosis of maternal distress (negative mood or anxiety) and accept treatment may be enhanced by involving her partner, close relatives, or friends in follow-up after screening.

Families and communities can either undermine or support efforts to screen and treat pregnant women based on their beliefs, values, and levels of information or misinformation [21].

In managing maternal prenatal distress, it is essential to identify a range of protective and resilience factors, such as mastery, self-efficacy, and social support among women, to inform intervention planning [20]. If efforts are directed toward strengthening women's psychosocial resources as early as possible—ideally before conception—it is conceivable that prenatal health and outcomes could be better optimized.

Screening tools are available to detect maternal prenatal distress. However, O'Connor *et al.* (2013) note that using such tools may present challenges [22].

They report that concerns regarding the selection of appropriate screening tools, the establishment of cut-off scores for identifying women at risk, the necessity for expert clinicians to follow up with those who score above established thresholds to make diagnoses, and the availability of affordable and effective treatments for those with established diagnoses may complicate the implementation of screening tools. The Edinburgh Postnatal Depression Scale (EPDS) is a widely utilized gold standard tool for depression screening in both prenatal and postnatal periods and measures both depressive and anxiety symptoms, which may contribute to ambiguity regarding risks.

Furthermore, experts have questioned the validity of diagnosing depressive states using standard diagnostic criteria for mood disturbances, as these criteria encompass typical somatic symptoms of pregnancy, such as fatigue, sleep disturbances, and appetite changes [20]. Distress appears to be highly subjective; thus, healthcare professionals must endeavour to apply individualized strategies for its recognition and management. Pregnant women are particularly vulnerable to experiencing distress, as the gravid state may be accompanied by high expectations that can disrupt their psychological well-being.

Strategies for recognizing and managing maternal prenatal distress must take into account a mother's broader socio-environmental context. With advancements in healthcare professionals' knowledge and the development of various screening tools for prenatal distress, it is imperative to identify the signs, symptoms, and diagnostic thresholds that warrant prenatal intervention.

Furthermore, it is necessary to adapt efficient, effective, and ecologically valid screening and intervention strategies for widespread use. Interdisciplinary engagement and collaboration are thus crucial for alleviating the burden of maternal stress, depression, and anxiety during the perinatal period.

1.3. Management of Prenatal Maternal Distress

A lack of respectful care from healthcare providers, including doctors and midwives, may lead to dissatisfaction with the health system, thereby reducing the likelihood of seeking health services, such as antenatal care (ANC), delivery, and postnatal services [23]. In addition, the attitudes and behaviours of maternal healthcare providers may directly influence the well-being of patients and clients, as well as the patient-provider relationship [23]. Furthermore, negative attitudes and behaviours may undermine the quality of care and the effectiveness of maternal and infant health promotion efforts, while compromising women's fundamental right to dignified and respectful maternal healthcare [1] [24] [25].

Taken together, the attitudes and behaviours of maternal health care providers (MHCPs) constitute a significant determinant of maternal and infant health outcomes [26] [27]. These attitudes influence women's ability to exercise their fundamental rights to freedom from violence and discrimination and to attain the highest possible standard of physical and mental health [28]. A recent statement by the World Health Organization (WHO) and the Human Reproduction Pro-

gramme has called for increased attention, research, and advocacy regarding the maltreatment of women during childbirth in healthcare facilities [24].

Untreated antenatal anxiety and depression are strong predictors of adverse pregnancy outcomes and can lead to considerable morbidity and distress both antenatally and postnatally [29]. Studies conducted in maternity facilities indicate that while midwives assess antenatal women for signs and symptoms of maternal distress during routine visits, this practice is not standardized [30].

The lack of time for midwives to contemplate and act upon their critical observations has been identified as a primary barrier to this omission [31]. Midwives often face overwhelming workloads that prevent them from adequately assessing prenatal distress and making timely decisions.

Consequently, this study concluded that early interventions for managing perinatal maternal distress, such as anxiety and depression, are essential to mitigate risks to both the mother and her foetus, irrespective of time constraints [32].

1.4. Knowledge of Health Care Professionals on Prenatal Maternal Distress

Several studies have emphasized the necessity for all key healthcare workers to be trained to provide information and engage in tailored discussions regarding post-mortem decisions [33]. Midwives often experience stress and emotional challenges while caring for bereaved families [34], with many expressing difficulties in this aspect of their practice [35], feeling ill-equipped due to insufficient support and training [36].

A survey involving over 2000 UK healthcare staff revealed that one-third of respondents reported inadequate training to counsel parents about investigations following stillbirth [35]. This survey demonstrated that staff actions—such as providing parents with understandable information, discussing options, and tailoring care to individual needs and attitudes—significantly influence parents' decision-making and their ability to cope with such events [35] [37]. To achieve this, both knowledge-based and practical training are essential to enhance healthcare workers' capacity and comfort in providing personalized care.

For healthcare providers to offer appropriate care to women experiencing maternal distress, they must possess adequate knowledge [7]. A study conducted among Dutch midwives indicated a deficiency of knowledge and skills regarding screening tools for assessing distressed women [38]. This deficiency undoubtedly reflects a broader lack of education in perinatal distress management.

Midwives who received education reported that they primarily acquired it through their nursing/midwifery training, which is likely outdated, given the age profile of participants. In addition to educational deficits, participants identified several organizational barriers, including the absence of care pathways, a lack of time, and heavy workloads, which negatively impacted their capacity to address issues faced by women.

These findings indicate that midwives require continuous professional devel-

opment opportunities that address knowledge, communication, and assessment skills. However, educational and training support, in the absence of appropriate referral pathways and support systems, will have limited benefits [39].

1.5. Factors Influencing Health Care Professionals' Ability to Recognize and Manage Prenatal Maternal Distress

Several factors may influence health care professionals' ability to recognize and manage prenatal distress. One significant factor is the practical skills that these professionals acquire. A survey conducted in Lusaka, Zambia, exploring access to and quality of maternity care, revealed that just over half of the 845 women who delivered in a health facility commended midwives for their provision of "good personal treatment" to maternity patients [1]. Although the specific meaning of "good personal treatment" remains unclear, it is reasonable to assert that a highly skilled health care professional who effectively applies their skills is more likely to provide individualized prenatal care to patients. In delivering individualized prenatal care, health care professionals may incorporate values associated with pregnancy. Consequently, a health care professional with adequate skills is better positioned to recognize that women in the prenatal period may face various distressors requiring prompt recognition and management.

The attitudes and behaviours of maternal health care providers (MHCPs) are critical elements for the recognition and management of perinatal distress, as they positively and negatively influence how women, their partners, and families perceive and experience maternal health care [1]. A lack of respectful care from providers, including doctors and midwives, may diminish the likelihood of providing care to perinatal women experiencing psychological distress.

This situation may lead to dissatisfaction with the health system. Importantly, the attitudes and behaviours of MHCPs can directly impact the well-being of patients and clients, as well as the patient-provider relationship. Moreover, negative attitudes and behaviours could undermine the quality of care and the effectiveness of maternal and infant health promotion efforts, while also compromising women's fundamental right to dignified and respectful maternal health care.

Deficiencies in MHCPs' working conditions and environments have been widely reported as contributing to provider behaviour, as evidenced in countries across Africa, Asia, Latin America, and the Middle East.

Common factors adversely affecting the care provided to women experiencing distress during the perinatal period include heavy workloads, long working hours, inadequate supportive supervision, strained relationships with co-workers, insufficient salaries, and a lack of necessary equipment and supplies [1]. Such deficiencies in working conditions and environments can result in stress, fatigue, frustration, and low job satisfaction among MHCPs, which, in turn, may lead to poor communication and uncaring attitudes towards patients, hindering health care professionals' ability to recognize and manage perinatal distress among women.

The perinatal period is characterized by increased healthcare utilization [38]

[40], providing midwives and other healthcare professionals with a unique opportunity to screen clients for signs of prenatal distress, thereby ensuring early detection and intervention. However, due to various factors, health care providers may sometimes be unable to conduct effective screening [31].

Some reasons cited for the failure to screen and manage prenatal distress include negative behaviours exhibited by practitioners, poor relationships with clients, and inadequate communication skills among healthcare providers. Additionally, women are reluctant to disclose their feelings, which further complicates the issue. The heavy workload of healthcare providers, coupled with a reluctance among professionals to identify affected women due to perceived deficiencies in skills or resources, contributes to the under-recognition and undertreatment of prenatal maternal distress [1] [41].

1.6. General Objective

To determine healthcare professionals' ability to recognize and manage prenatal maternal distress in women attending maternity services in Lusaka, Zambia.

1.7. Specific Objectives

- 1) To establish the practices of healthcare professionals in the management of prenatal maternal distress.
- 2) To assess healthcare professionals' knowledge regarding prenatal maternal distress.
- 3) To identify other factors that influence healthcare professionals' ability to recognize and manage prenatal maternal distress.

2. Methods

2.1. Study Design

The study utilized a quantitative cross-sectional design.

2.2. Study Setting

Zambia is a landlocked country located in Southern Africa, bordered by South Africa, Zimbabwe, Namibia, Botswana, Malawi, Tanzania, and Mozambique. The capital city is Lusaka, with a total population of 2.2 million in 2022. The study was conducted in two University Teaching Hospitals located in Lusaka District: Levy Mwanawasa General Hospital (LMGH) and Women and Newborn Hospital. Only departments within the hospital providing prenatal care services were included in the study.

2.3. Study Population

Comprised healthcare professionals delivering antenatal care services, including Consultant Obstetricians, Obstetricians, General Practitioners, and Midwives working in the selected study settings. The study targeted healthcare professionals who had provided antenatal care to women for three months. The accessible pop-

ulation consisted of individuals meeting the inclusion criteria of at least 3 months' work experience in the hospital and who were available for participation at the time of data collection.

2.4. Variables

Variables included knowledge levels, workload, attitude, and some socio-demographic factors such as age and time attending to clients. Knowledge in this study was operationalized as information on prenatal distress that healthcare professionals would have acquired from authoritative external sources and that can therefore be regarded as factual. It was graded as either high or low. Health care worker attitude was defined as a healthcare professional's disposition towards the recognition and management of prenatal distress in a pregnant woman. It was categorised as positive or negative. We considered confounders in our analysis.

The outcome variables were management of PMD and Recognition of PMD. Prenatal Distress Management Practices implied healthcare professionals' use of an explicit systematic approach to identify women at risk for prenatal distress, intervene with specific programs of care, and measure clinical outcomes. On the other hand, recognition of prenatal distress represented a self-reported ability to identify familiar signs of prenatal distress in a pregnant woman by the attending healthcare professional.

2.5. Sampling Methods

The study sites were purposively sampled based on their status as University Hospitals that provide comprehensive maternity care services to women with both normal and complicated pregnancies. These hospitals also serve as referral centres for more complicated pregnancies, which are at higher risk for prenatal maternal distress. Participants were randomly sampled from the target population to facilitate the generalization of study findings.

A lottery method (Fishbowl) without replacement was employed to select healthcare personnel for participation in the study. This ensured unbiased data collection, and the sample was small enough to make its use appropriate. A sampling frame of participants was made, with numbers assigned to each participant and put in a bowl. The papers were mixed, and the researcher then picked out a participant for the study.

2.6. Sample Size Calculation

The prevalence formula was used to calculate the sample size [42]. A proportion of 50% was used in the study to calculate the sample size of participants from the total population of 466 healthcare workers from both facilities.

$$n = \frac{Z^2 \times P \times (1 - P)}{d^2}$$

“where n is the Sample Size, Z is the statistic corresponding to the level of confidence at 95%, P is the expected prevalence at 50%, and d is the precision at 0.05”

[40]. Therefore:

$$n = \frac{1.96^2 \times 0.5 \times (1 - 0.5)}{0.05^2}$$

$$n = 385$$

Since the population size is less than 1000, it will be adjusted using the following formula:

$$n = \frac{n}{1 + n/N}$$

$$\text{Final} = \frac{385}{1 + 385/466}$$

$$= 211$$

2.7. Non-Response Rate

A non-response rate of 10% of the calculated sample size was calculated. Therefore, for the quantitative component of this study, the non-response rate is 21.1, or 22 people. The total sample size was then calculated by adding 211 to 22, which equalled 233 health care professionals.

2.8. Data Collection Tool

The data collection instrument utilized in this study was a self-administered questionnaire comprising closed-ended questions. The questionnaire was designed to explore demographic characteristics, knowledge assessments, and specific inquiries into healthcare professionals' abilities to recognize and manage prenatal distress.

2.9. Validity

To ensure the validity, the researchers conducted a comprehensive literature review to confirm adequate coverage of the relevant content. The researchers maintained a professional distance from participants during data collection to uphold objectivity, thereby facilitating the accurate reflection of respondents' perspectives in the study findings. Additionally, the instrument for quantitative data underwent pre-testing through a pilot study to ensure that the questions effectively measure the constructs of interest as defined by the researchers.

2.10. Reliability

Reliability was confirmed by ensuring that each section of the questionnaire thoroughly measures all pertinent variables and that data were collected from participants using a consistent instrument and methodology. Triangulation at various stages further maintained the reliability of the instrument and the collected data.

2.11. Data Collection Technique

Data collection took place for approximately 6 months, from August to December, 2024. Participants were provided with a questionnaire to complete, which took

approximately 20 to 30 minutes. The researchers distributed the questionnaires during the designated data collection period, which was from 06:00 to 16:00 hours daily. Participants were requested to schedule a specific time for the researchers to collect the completed questionnaires. Before data collection, participants were informed of their right to withdraw from the study at any time without fear of adverse consequences. Participants signed a written consent form to indicate their agreement to participate in the study. The information provided in the completed questionnaires was reviewed for accuracy before collection.

2.12. Data Analysis

Data were entered into Statistical Package for the Social Sciences (SPSS) software, version 23, for analysis. The dependent variable was recognition of PMD and management of PMD. The independent variables included some independent variables such as length of work at the facility, age, workload, staff attitude, and knowledge levels. Descriptive statistical analysis was employed to compute frequencies, percentages, and means for both independent and dependent variables. Chi-square tests were utilized to assess associations between categorical dependent variables and independent variables. The confidence interval was set at 95%, with a significance level of 5%.

2.13. Ethical Considerations

Ethical approval was granted from the University of Zambia Biomedical Research Ethics Committee (UNZA BREC) under reference number 1222-2020. Further permissions were obtained from the National Health Authority (NHA) at the Ministry of Health (MoH). Additionally, written permissions were obtained from the Lusaka Provincial Director (PHD) and management teams of both hospitals (LMGH and WNBH) to conduct data collection within their facilities. Consent was further obtained from the individual participants, and they were made to understand that they could refuse to participate in the study at any time. No personal identification information was collected from the participants, and confidentiality was maintained throughout.

3. Results

3.1. Socio-Demographic Factors

A total of 190 healthcare workers out of the 221 calculated sample size were interviewed as participants in the study, translating to 86% response rate. The majority were female (161, 84.7%), aged between 30 and 49 years (68, 35.8%), midwives by profession (103, 54.2%), and worked at their institution for 1 - 3 years (65, 34.2%). Additionally, most of them were married (90, 47.4%) and single (90, 47.4%) (**Table 1**).

3.2. Recognition and Management of PMD

Most participants (145, 76.3%) mentioned that there is no tool to use when as-

sessing PMD in the hospital; 172 (90.5%) of them indicated an interest in learning more about the condition and how to manage it (**Table 2**).

Table 1. Demographic characteristics of participants recruited from healthcare units offering reproductive health services at Levy Mwanawasa General Hospital and Women's and Newborn Hospital, University Teaching Hospitals, Lusaka (Zambia), August to December 2024 (N = 190).

Variable	Indicators	Frequency (n)	Percentage (%)
Sex	Male	29	15.3
	Female	161	84.7
Age	0 - 20 years	45	23.7
	21 - 29 years	74	38.9
	30 - 49 years	68	35.8
	50 - 60 years	3	1.6
Religion	Christian	183	96.3
	Muslim	5	3.7
	Hindu	1	0.5
	Other	1	0.5
Marital Status	Married	90	47.4
	Single	90	47.4
	Divorced	3	1.6
	Widowed	5	2.6
	Other	2	1.1
Qualifications	Consultant Doctor	3	1.6
	Obstetrician	3	1.6
	General Doctor	13	6.8
	Midwife	103	54.2
	Nurse	45	23.7
	Other	23	12.1
Length of time in current position	Below 1 year	27	14.2
	1 - 3 years	60	31.6
	4 - 7 years	46	24.2
	8 - 11 years	36	18.9
	Above 12 years	21	11.1
Length of time working at the hospital	Below 1 year	47	24.7
	1 - 3 years	65	34.2
	4 - 7 years	38	20.0
	8 - 11 years	24	12.6
	Above 12 years	16	8.4

Table 2. Perceived workload levels and recognition of PMD of participants recruited from the healthcare units offering reproductive health services at Levy Mwanawasa General Hospital and Women's and Newborn Hospital University Teaching Hospitals, Lusaka (Zambia) from August to December 2024 (n = 190).

Variable	Indicators	Frequency (n)	Percentage (%)
Length of time taken to assess care	Less than 10 minutes	26	13.7
	10 minutes	46	24.2
	30 minutes	64	33.7
	More than 30 minutes	51	26.8
	Not sure	3	1.6
There is enough staff in the department	Strongly agree	27	14.2
	Somewhat agree	34	17.9
	Somewhat disagree	54	28.4
	Strongly disagree	72	37.9
	Not sure	3	1.6
Number of clients attended to per day	3 clients per shift	5	2.6
	6 clients per shift	17	8.9
	8 clients per shift	12	6.3
	More than 8 per shift	150	78.9
	Not sure	6	3.2
Number of hours you work per day	Less than 6 hours	8	4.2
	6 hours	60	31.6
	8 hours	58	30.5
	More than 8 hours	58	30.5
	Not sure	6	3.2
Description of the amount of work	Light	14	7.4
	Heavy	92	48.4
	Very heavy	65	34.2
	Unbearable	15	7.9
	Not sure	4	2.1
Workload	High	80	42.1
	Moderate	92	48.4
	Low	18	9.5
RECOGNITION OF PMD (n = 190)			
Do you use a tool when assessing PMD	Yes	35	18.4
	No	145	76.3
	Don't know	10	5.3
Was able to mention a tool that can be used	Yes	128	67.4
	No	12	6.3
	Don't know	50	26.3
Do you need training on PMD assessment	Yes	172	90.5
	No	5	2.6
	Not sure	13	6.8

Of those interviewed (91, 47.9%) had never treated a woman with PMD, while (40, 21.1) indicated that they did not know. They had never provided clients with medication (61, 32.1%), cognitive behavior therapy (65, 34.2%), or referral to a mental health specialist (86, 45.3%) for PMD before (**Table 3**).

Table 3. Perception of the provision of care for clients with PMD from participants recruited from healthcare units offering reproductive health services at Levy Mwanawasa General Hospital and Women's and Newborn Hospital, University Teaching Hospitals, Lusaka, from August to December 2024 (Zambia) (N = 190).

Variable	Indicators	Frequency (n)	Percentage (%)
Managed a woman with PMD before?	Yes	59	31.1
	No	91	47.9
	Don't know	40	21.1
I have provided clients with prenatal maternal distress with the following care			
Counselling	Never	37	19.5
	Rarely	14	7.4
	Sometimes	57	30.0
	Often	52	27.4
	Don't know	30	15.8
Medication	Never	61	32.1
	Rarely	27	14.2
	Sometimes	32	16.8
	Often	26	13.7
	Don't know	44	23.2
Cognitive Behaviour Therapy	Never	65	34.2
	Rarely	27	14.2
	Sometimes	38	20.0
	Often	16	8.4
	Don't know	44	23.2
Referral to a mental health specialist	Never	86	45.3
	Rarely	19	10.0
	Sometimes	27	14.2
	Often	17	8.9
	Don't know	41	21.6
Counselling and medication	Never	57	30.0
	Rarely	23	12.1
	Sometimes	38	20.0
	Often	26	13.7
	Don't know	46	24.2
All	Never	43	22.3
	Rarely	12	6.3
	Sometimes	9	4.7
	Often	16	8.4
	Don't know	110	57.9

Most times, the clients are often referred to an obstetrician (44, 23.2%) or counsellor sometimes (41, 21.6%), though most chose to indicate a lack of knowledge on whether they referred the women or not (**Table 4**).

Table 4. Perception of referral of clients with PMD of participants recruited from the healthcare units offering reproductive health services at Levy Mwanawasa General Hospital and Women's and Newborn Hospital, University Teaching Hospitals, Lusaka (Zambia), August to December 2024 (N = 190).

Variable	Indicators	Frequency (n)	Percentage (%)
I refer clients with prenatal maternal distress to the following people			
Mother-baby unit	Never	64	33.7
	Rarely	13	6.8
	Sometimes	15	7.9
	Often	21	11.1
	Don't know	77	40.5
Counsellor	Never	36	18.9
	Rarely	14	7.4
	Sometimes	41	21.6
	Often	39	20.5
	Don't know	60	31.6
Psychiatrist	Never	51	26.8
	Rarely	18	9.5
	Sometimes	27	14.2
	Often	29	15.3
	Don't know	64	33.7
Midwife	Never	36	18.9
	Rarely	16	8.4
	Sometimes	31	16.3
	Often	41	21.6
	Don't know	66	34.7
Obstetrician	Never	35	18.4
	Rarely	14	7.4
	Sometimes	32	16.8
	Often	44	23.2
	Don't know	65	34.2
No one	Never	53	27.9
	Rarely	2	1.1
	Sometimes	4	2.1
	Often	6	3.2
	Don't know	124	65.3

3.3. Barriers to Care Provision

Majority of the participants (118, 62.1%) identified unavailability of resources as a barrier to management of prenatal maternal distress. They further highlighted that client family influence (125, 65.8%), cultural beliefs (136, 71.6%), denial (135, 71.1%), health worker attitudes (124, 65.3%), and the skill levels (118, 62.1%) are barriers to treatment of the condition (**Table 5**).

Table 5. Perception of the barriers/negative impacts to treatment of PMD of participants recruited from the healthcare units offering reproductive health services at Levy Mwana-wasa General Hospital and Women's and Newborn Hospital, University Teaching Hospital, Lusaka (Zambia) from August to December 2024 (N = 190).

Variable	Indicator	Frequency (n)	Percentage (%)
Managing prenatal distress maternal distress will cause the following negative impacts			
None	Yes	24	12.6
	No	166	87.4
The following are barriers to the treatment of prenatal maternal distress			
None, let this be the last option	Yes	38	20.0
	No	56	29.5
	Don't know	96	50.5
Unavailability of resources	Yes	118	62.1
	No	22	11.6
	Don't know	50	26.3
Client family influence	Yes	125	65.8
	No	18	9.5
	Don't know	47	24.7
Cultural beliefs	Yes	136	71.6
	No	9	4.7
	Don't know	45	23.7
Denial	Yes	135	71.1
	No	6	3.2
	Don't know	49	25.8
Health care professionals' attitudes	Yes	124	65.3
	No	18	9.5
	Don't know	48	25.3
Health care professional's skill level	Yes	118	62.1
	No	23	12.1
	Don't know	49	25.8

3.4. Independent and Dependent Variables

Knowledge level was high among health care workers (136, 71.6%), which indicated that participants had heard of the condition before (**Table 2**). Of the total

health care workers interviewed, 92 (48.8%) categorized their workload as moderate, while 80 (42.1%) termed it as high (**Figure 1**). Most (150, 78.9%) reported attending to more than 8 clients per shift and working 8 hours or more (58, 30.5%) on average daily. More than half of the respondents (72, 37.9%) strongly disagreed that staff level was inadequate and mentioned that they attended to more than 8 clients per shift (150, 78.9%) (**Table 2**). The respondents (128, 67%) had a positive attitude towards understanding PMD, while approximately 62 (33%) displayed a negative attitude.

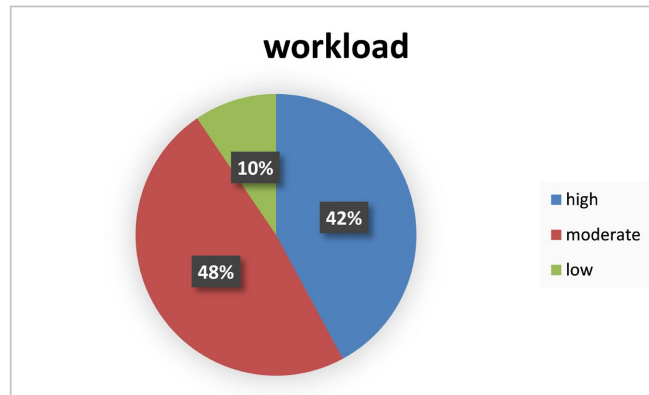


Figure 1. Workload Levels of Healthcare Professionals population $n = 190$. Findings of recognition and management of PMD study, Zambia, 2024.

3.5. Relationship between Variables

The variables under study were subjected to statistical tests, which identified whether there was an association between dependent and independent variables. Chi-square and Fisher's exact tests were conducted. A statistical significance between knowledge levels ($p \leq 0.000$; $p \leq 0.001$), attitude ($p \leq 0.000$; $p \leq 0.001$), and workload ($p \leq 0.000$; $p \leq 0.001$), of staff at the two hospitals, with the ability of staff to recognize (**Table 6**) and manage (**Table 7**) PMD was found. Results show that participants with high knowledge and positive attitude were able to recognize PMD in their patients (**Table 6**).

Table 6. Crosstabulation for Recognition of PMD of participants recruited from the healthcare units offering reproductive health services at Levy Mwanawasa General Hospital and Women's and Newborn Hospital, University Teaching Hospitals, Lusaka (Zambia) from August to December 2024 ($N = 190$).

Variable	Indicator	Recognition of PMD			P-Value
		Yes	No	Don't Know	
Demographic Factors					
Age	0 - 20	15	18	12	0.759
	21 - 29	23	38	13	
	30 - 49	21	33	14	
	50 - 60	0	2	1	

Continued

Sex	Male	10	15	4	0.606
	Female	49	79	36	
Religion	Christian	58	86	39	1.000
	Hindu	1	3	1	
	Muslim	0	1	0	
	Other	0	1	0	
Marital Status	Married	2	1	2	0.656
	Single	1	1	1	
	Divorced	27	42	21	
	Widowed	29	47	16	
Qualification	Consultant Doctor	0	2	1	0.141
	Obstetrician	2	0	1	
	General Doctor	4	6	3	
	Midwife	24	53	26	
	Nurse	19	19	7	
	Other	10	11	2	
Duration in current position	Below 1 year	11	14	2	0.630
	1 - 3 years	20	27	13	
	4 - 7 years	13	20	13	
	8 - 11 years	9	20	7	
	Above 12 years	6	10	5	
Duration at UTH	Below 1 year	17	21	9	0.317
	1 - 3 years	17	34	14	
	4 - 7 years	9	20	9	
	8 - 11 years	6	12	6	
	Above 12 years	10	4	2	
Independent Variables					
Workload	High	92	0	0	0.000
	Moderate	36	12	80	
	Low	0	0	18	
Knowledge Level	High	128	8	0	0.000
	Low	0	4	50	
Attitude of Health Care Worker	Positive	128	0	0	0.000
	Negative	0	12	50	

On the other hand, the majority of participants with positive attitudes, high knowledge, and who classified their workload as moderate stated that they cannot manage PMD (**Table 7**).

Table 7. Crosstabulation for management of PMD of participants recruited from the healthcare units offering reproductive health services at Levy Mwanawasa General Hospital and Women's and Newborn Hospital, University Teaching Hospitals, Lusaka (Zambia) from August to December 2024 (N = 190).

Variable	Indicator	Management of PMD			
		Yes	No	Don't Know	P-Value
Demographic Factors					
Age	0 - 20	15	18	12	0.759
	21 - 29	23	38	13	
	30 - 49	21	33	14	
	50 - 60	0	2	1	
Sex	Male	10	15	4	0.606
	Female	49	76	36	
Religion	Christian	58	86	39	1.000
	Hindu	1	3	01	
	Muslim	0	1	0	
	Other	0	1	0	
Marital Status	Married	2	1	2	0.656
	Single	1	1	1	
	Divorced	27	42	21	
	Widowed	29	47	16	
Qualification	Consultant Doctor	0	2	1	0.141
	Obstetrician	2	0	1	
	General Doctor	4	6	3	
	Midwife	24	53	26	
	Nurse	19	19	7	
	Other	10	11	2	
Duration in current position	Below 1 year	11	14	2	0.630
	1 - 3 years	20	27	13	
	4 - 7 years	13	20	13	
	8 - 11 years	9	20	7	
	Above 12 years	6	10	5	
Duration at UTH	Below 1 year	17	21	9	0.317
	1 - 3 years	17	34	14	
	4 - 7 years	9	20	9	
	8 - 11 years	6	12	6	
	Above 12 years	10	4	2	

Continued

		Independent Variables			
Workload	High	59	33	0	0.001
	Moderate	0	58	22	
	Low	0	0	18	
Knowledge Level	High	59	77	0	0.001
	Low	0	14	40	
Attitude of Health Care Workers	Positive	59	69	0	0.001
	Negative	0	22	40	

4. Discussion

With a 90% response rate, the study revealed that the majority of respondents were unable to recognize Perinatal Mood Disorders (PMD) due to the absence of assessment tools in health facilities in Zambia. Furthermore, notable results indicated a high level of theoretical knowledge regarding condition-specific questions among study participants, a positive attitude toward the significance of recognizing and managing the condition, and participants generally rated their workload as moderate.

A significant number of respondents reported never having managed or referred any woman with PMD for further treatment. This lack of action is likely attributable to healthcare workers' inability to recognize the condition, as it is not routinely investigated during reproductive healthcare. The current findings regarding the high levels of knowledge among healthcare personnel about PMD align with the research conducted by Noonan *et al.* (2019), which found similarly high knowledge levels regarding the recognition of stress, anxiety, and depression in women [43].

Although most respondents in the present study could theoretically identify concepts associated with PMD, they found difficulty in recognizing it. This discrepancy may stem from the fact that mental health was included in the basic training of participants in both studies, without the required in-service training to update workers' knowledge so that it is easily recalled. The current study found that knowledge levels significantly influenced their ability to recognize and manage PMD.

The lack of recognition of PMD in Zambia is connected to the inadequate application of the acknowledgment of the importance of addressing mental health issues for women during the perinatal period within the Zambian health sector. This oversight results in insufficient diagnosis and treatment of the condition [44]. Early screening and management, along with enhanced support for women experiencing mental disorders during pregnancy, are considered the best measures of care [45] [46]. Sorsa, Kylma, and Bondas (2021) advocated for the development of tools that service providers can use to facilitate connections with mothers experiencing perinatal psychological distress [47]. The authors further encouraged

health facilities to enhance the training of healthcare personnel on mental health issues affecting women before and after pregnancy [45] [46] [48]. The findings of this study indicated that no tools are available for the recognition and management of PMD.

Moreover, the current study identified several barriers to management of PMD in the two hospitals, which included the unavailability of resources, family influence, cultural beliefs, denial, health worker attitudes, and the skill level of healthcare personnel. These findings contrast somewhat with those highlighted by Smith *et al.* (2018) and Brown and Sprague (2021), who reported stigma, poor awareness, and unclear policies as barriers to care [49] [50].

Public stigma, which also affects healthcare providers, has additionally been linked to a lack of help-seeking behaviours among women, thereby hindering early identification of the condition, as women may refrain from reporting their symptoms when seeking care [51] [52]. Furthermore, Smith *et al.* (2018) concurred with the present findings, indicating that cultural factors and resource inadequacies are barriers that impede the effective management of perinatal distress [49].

They suggested that if PMD is managed through a multilevel approach at the individual, organizational, and governmental levels, access to care for women experiencing the condition could be improved. This implies that women should report their symptoms to appropriate healthcare facilities, which should implement measures to identify and manage the condition, while the government enacts policies that support the recognition and management of PMD among women in Zambia.

Healthcare workers generally exhibit an interest in managing perinatal mental health issues [53], as evidenced in the current study, in which the majority of respondents expressed a desire to learn more about perinatal mood disorders (PMD). Despite this interest, many healthcare workers may lack the necessary confidence and knowledge to effectively manage such conditions. Therefore, additional training for healthcare personnel in Zambia may be beneficial in enhancing their capacity to address the needs of these clients.

The current study found that workload significantly influences healthcare workers' ability to recognize and manage PMD, contrary to findings from Manava (2015), which indicated no correlation [1].

Furthermore, a negative attitude among healthcare workers towards patient management has been cited as a factor affecting the recognition and management of patients, potentially leading to inadequate reporting of mental health conditions [1]. In contrast to general reports, the current study found that healthcare workers displayed a positive attitude.

Nonetheless, there remains a need for ongoing improvement in the attitudes and behaviours of health workers, as this study demonstrated that attitude does impact the recognition and management of PMD among health workers in Lusaka. Positive attitudes can enhance mental health outcomes for both the women

receiving care and the healthcare workers themselves [1].

5. Conclusion

In Zambia, inadequate mechanisms for recognizing and managing prenatal maternal distress exist, as mental health management is not included in the prenatal care package provided to women by the Ministry of Health. Healthcare workers must receive training on how to recognize, manage, and refer mental health issues affecting women during the perinatal period.

6. Limitations of the Study

This study was conducted solely in the Lusaka District and in public hospitals, which limits the generalizability of the findings to other healthcare facilities in the country, as conditions may differ from those represented.

Recommendations

- 1) As workload, attitude, and knowledge levels of staff are factors associated with the ability of healthcare workers to recognize and manage PMD, the facility should develop targeted interventions to address them.
- 2) Unavailability of resources, cultural beliefs, client family influences, denial, healthcare attitudes, and skill levels are some of the identified barriers to care provision; the institution should address these through better planning for resource mobilization and targeted health education messages.
- 3) Hospital management to advocate to the Ministry of Health in Zambia for the routine investigation of mental disorders and psychological distress during the perinatal period, which are not done.
- 4) The hospital should identify tools to be used for mental health assessment and train health care professionals on how to use them

Authors' Contribution

Conception and design: Namayipo Wamukankamba Stella Nankamba, Michael Kanyanta, Maureen Masumo Makoleka, Sebean Mayimbo, Natalia Mbewe, Victoria Kalusopa, Doctor Ruth Wahila, Patricia Katowa – Mukwato. Acquisition of data: Namayipo Wamukankamba Stella Nankamba. Analysis and interpretation of data: Namayipo Wamukankamba Stella Nankamba. Drafting the manuscript: Namayipo Wamukankamba Stella Nankamba. Revising the manuscript for important intellectual content: Namayipo Wamukankamba Stella Nankamba, Michael Kanyanta, Maureen Masumo Makoleka. Approval of the version of the manuscript to be published: Namayipo Wamukankamba Stella Nankamba, Michael Kanyanta, Maureen Masumo Makoleka. All authors have read and agreed to the final manuscript.

Conflicts of Interest

The authors declare no competing interests.

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