ORIGINAL RESEARCH

Supporting psychiatric mental health nurse practitioners' preparedness to treat mental health concerns during pregnancy: Results from a grounded theory study

Rachel Eakley*[1], Susan Kools[2,3], Allison B. Deutch[4], Audrey Lyndon[1]

[1] *New York University, Rory Meyer College of Nursing, New York, NY, United States*
[2] *University of Virginia, Charlottesville, VA, United States*
[3] *University of California San Francisco, San Francisco, CA, United States*
[4] *New York University, Grossman School of Medicine, New York, NY, United States*

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ABSTRACT

Background and objective: Pregnant persons are less likely to be screened and treated for depression and anxiety during pregnancy compared to the pre- and post-natal periods, despite adverse effects associated with untreated mental health concerns during pregnancy. Patients have reported that maternal and mental health providers seem unable or unwilling to discuss treatment with psychopharmacological options during pregnancy. Literature concerning this pattern has not included the perspective of psychiatric mental health nurse practitioners (PMHNP). The objective of this study was to identify the barriers and needs of PMHNPs regarding the treatment of mental health concerns during pregnancy.

Methods: In this constructivist grounded theory study, data were collected between February 2023 and February 2024 through in-depth interview. Eligible participants were PMHNPs, or PMHNP students, working with patients who might become pregnant in an outpatient setting.

Results: Seventeen PMHNPs or students participated in this study. Many believed they were unprepared to treat pregnant patients and described barriers and needs that impede their comfort and willingness to treat people who are pregnant. These included inadequate training, limited research, and concerns about legal liability. PMHNPs requested more information about perinatal mental health and its treatment to be incorporated into training programs and clinical experience.

Conclusions: Many PMHNPs were unaware or underinformed of available resources and best practices for treatment during pregnancy. In addition to best practices for the treatment of people who are pregnant, PMHNP programs should consider including preparation for the emotional consequences of practice as well as clear and accurate information about malpractice and liability risks.

Key Words: Perinatal mental health, Pregnancy, Psychopharmacology, Psychiatric mental health nurse practitioner, Professional preparation, Grounded theory

* **Correspondence:** Rachel Eakley; Email: rachel.eakley@nyu.edu; Address: New York University, Rory Meyer College of Nursing, New York, NY, United States.

1. INTRODUCTION

Pregnant persons are less likely to be screened and treated for depression and anxiety compared to pre- and post-natal periods[1–3] and less than half of pregnant people with mental health care needs received referral or treatment during pregnancy.[4–6] Attempts to initiate or maintain mental health care during pregnancy can be difficult for patients due to incomplete or unhelpful information from providers, family, friends, media, and internet sources and concerns about being judged as an unfit parent by providers or family.[7] Patients have also reported that their maternal and mental health care providers appeared unable or unwilling to discuss the treatment of mental health conditions, including the use of psychopharmacology, during pregnancy.[8,9] Many patients report being discharged from care when they disclosed to their provider that they had become pregnant.[10] These patterns may expose people who are pregnant and their fetuses to the negative consequences of untreated mood and anxiety disorders during pregnancy, including low birth weight, low APGAR scores, preeclampsia, postpartum depression, low rates of breastfeeding, and poor infant-mother attachment.[11–15]

Reproductive psychiatry is a subspecialty that focuses on the diagnoses and treatment of mental health concerns across the reproductive lifespan, including perinatal mental health care needs.[16] The number of reproductive psychiatry specialists does not appear to meet the needs of pregnant people seeking mental healthcare and pregnant people experience long wait times for an appointment with a specialist.[17] Some maternal health specialists consider reluctance among outpatient mental health providers to prescribe medication during pregnancy as a significant barrier to mental health care for pregnant people.[18] This reluctance and has been attributed to low provider confidence, inexperience, and liability concerns.[19–21]

Though many psychiatrists expressed confidence in their ability to provide evidence-based care during pregnancy, including the use of antidepressants, far fewer reported providing psychopharmacological treatment for pregnant patients with mental health concerns.[7] Several studies suggest that physicians overestimate the risk of harm from psychopharmacology during pregnancy, inaccurately describe medications in this class as more harmful than other classes,[22–24] and may underestimate or be unaware of the potential impact of untreated depression and anxiety during pregnancy. While pregnant patients often describe distress and uncertainty during treatment planning for mental health concerns during pregnancy,[25,26] the experiences of providers has been less well described.

Previous research has reported on the practice patterns of psychiatrists and maternal health care providers such as obstetricians, certified nurse midwives, and primary care physicians.[18,27] However, the perspective of psychiatric mental health nurse practitioners (PMHNP) has not been included. According to the American Psychiatric Nurses Association (APNA) 2022 Psychiatric-Mental Health Nursing Workforce Report, 70% of PMHNPs currently work in outpatient settings including federally qualified healthcare centers (FQHC), mental health clinics, and PMHNP or physician private practice offices.[28] For 82% of respondents, the initial preparation for PMHNP practice was a master's of science degree program (MSN). Though the 2022 workforce report describes practice information related to child/adolescent and adult age groups, it does not report on familiarity with maternal mental health or perinatal clients.

Two legislative elements that impact the professional responsibilities of nurse practitioners, including PMHNPs, are the related but distinct aspects of scope of practice and practice authority. Scope of practice refers to the activities that a nurse practitioner is permitted to perform while practice authority describes the extent to which a nurse practitioner may practice independently or under supervision.[29] In the U.S., scope of practice and practice authority regulations for nurse practitioners are set by individual state legislature and can vary by specialization, for example PMHNPs, certified nurse midwives, and family nurse practitioners. Briefly, practice authority is divided into three categories: full practice, reduced practice, and restricted practice.[29] Full practice authority grants nurse practitioners the ability to practice independently to diagnose patients, order laboratory analysis, and prescribe medication without a supervising or collaborating physician. Some full practice authority states require the nurse practitioner to obtain a certain level of experience, typically a given number of practice hours, under the supervision of a physician prior to independent practice. In reduced practice settings, nurse practitioners may have some limits to their scope of practice related to specific medications or treatments or they may be able to provide those treatments only as part of a physician's practice. The most limited form of practice authority, restricted practice, requires nurse practitioners to work under the supervision of a physician and not function as independent practitioners for the length of their career.

PMHNPs may be well placed to help address low rates of mental health treatment for pregnant patients, however, the PMHNP perspective has not yet been described in the literature. While the barriers and facilitators to perinatal mental healthcare are multi-level and involve patient, health professional, interpersonal, organizational, implementational,

political, and societal levels,[30] this study was intended to explore provider specific barriers that may contribute to a workforce that is unable to meet the needs of pregnant people with mental health concerns due to a reluctance to work with perinatal clients among outpatient providers. The purpose of this study was to understand this reluctance and the barriers and needs of PMHNPs in outpatient practice that may shape their comfort and willingness to provide psychopharmacological treatment for pregnant people with mental health concerns. We also aimed to identify solutions to increase PMHNP preparedness to treat pregnant patients.

2. METHODS

We conducted a constructivist grounded theory study to explore the needs and barriers for PMNHPs related to treating mental health conditions during pregnancy. This analysis stems from a study of clinical reluctance to provide psychopharmacological treatment during pregnancy among outpatient mental health providers which demonstrated that the provider's relationship with uncertainty greatly impacted their willingness to provide this type of treatment.[31] Constructivist grounded theory is a qualitative methodology that takes into consideration the subjective and involved role of the researcher.[32] Often considered part of a theory/methods package with Symbolic Interactionism[32] in constructivist grounded theory meaning and knowledge are believed to be socially constructed through interactions that occur between the participants, the researchers, and the research itself.[32,33]

2.1 Rigor and reflexivity

We maintained rigor and reflexivity via journaling, memo-writing, and through supervision and collaboration among co-authors and others with relevant expertise in perinatal mental health and qualitative inquiry. In preparation for the study, initial assumptions were informed by clinical experience and existing literature. Assumptions included 1) PMHNP may be reluctant to treat patients who are pregnant; 2) pre-licensure training may not adequately prepare PMHNPs to provide psychopharmacological treatment to people who are pregnant.

The lead author (RE) is a PMHNP and nurse educator with an independent private practice in New York City. AD is a physician with extensive experience in the reproductive psychiatry specialty. AL is a perinatal nurse with expertise in maternal morbidity and qualitative research methodology. SK is a psychiatric mental health nurse scientist with expertise in qualitative research methodology. All authors self-identify as white women.

2.2 Participants

Details of recruitment and sampling have been previously reported.[31] In brief, we recruited participants primarily through community message boards and listservs for psychiatric mental health professionals, direct contact through publicly available directories, and nomination by peers or previous participants. Recruitment materials omitted any reference to pregnancy in order to avoid discouraging participation from providers without a specialization in perinatal or reproductive mental health. Using a purposive sampling strategy, eligibility was initially limited to psychiatric mental health providers who 1) worked in an outpatient clinic or private practice setting with 2) patients who might become pregnant, 3) without a reproductive psychiatry specialty, 4) located in the state of New York, and 5) English speaking. Providers of different ages, genders, race or ethnicity, level of experience, specialization, geographic location, and urbanicity were sought out to include multiple perspectives in the analysis. Theoretical sampling strategies were informed by early analysis to amend criteria over time to include providers who identified with a perinatal or reproductive psychiatry specialty, located anywhere in the United States, and current psychiatric mental health nurse practitioner students.

Physicians were eligible to participate, however, only four interviews were completed with physicians. Given the differences in education and training processes between the physician and PMHNP professions, these interviews are omitted from the present analysis. Additional results of the analysis are reported elsewhere.[31] One participant was well known to the lead author from previous employment. Participants were not recruited from the university where the lead author works as an educator.

2.3 Data collection

Data were collected between February 2023 and February 2024 through in-depth interviews. A questionnaire was used to collect personal demographics, professional information, and characteristics of providers' practice and patient populations, including experience treating perinatal clients. These data were used to contextualize interview responses and guide purposive sampling. An interview guide was developed and amended throughout the process of data collection. The interview guide provided initial prompts and the interview followed participants' concerns and interests. Interviews performed later in the process also involved member reflection on early analysis.

2.4 Data analysis

Data collection and analysis began concurrently in an iterative process guided by the practice of constructivist grounded

theory.[32] Constant comparison was used to compare data within and between interviews. Analysis progressed through several phases of coding beginning with initial coding which identified individual units of meaning and creation of tentative codes. Initial coding and analysis informed updates to the interview guide and provided direction for theoretical sampling strategies, including the inclusion of retirees and PMHNP students. We used complementary grounded theory methods of dimensional analysis and situational analysis to guide our approach.

In dimensional analysis, codes are used to represent the dimensions of experience and designate the context, conditions, processes, and consequences of a phenomenon and create an overarching vocabulary of analysis.[34,35] Context is used to refer to the boundaries of the phenomenon of interests, conditions shape the actions and interactions, or processes, that lead to specific consequences.[34] Analysis then proceeds through a phase of differentiation in order to determine the dimension, known as the perspective, that provides the most thorough explanation of the phenomenon.[34] The context, conditions, processes, and consequence are then used to challenge the saliency of the perspective in order reintegrate and organize the dimensions into an explanatory theory grounded in the data.[34,35] Situational and positional maps were used to analyze the relationships between concepts and help move the analysis beyond the study of action toward an understanding of the relationships between the positions, locations, and power of the actors.[36]

In this manuscript, we build upon an analysis of clinical reluctance to treat pregnant individuals (reported elsewhere)[31] to examine the needs of PMHNPs concerning the treatment of mental health concerns for people who are pregnant and identify potential barriers to treatment. In brief, the overarching explanatory concept in the analysis of reluctance was uncertainty tolerance (reported elsewhere),[31] which was situated in the context of preparation for professional practice including prelicensure training, continuing education, practice setting, local scope of practice and practice authority, and available resources. Conditions shaping uncertainty tolerance included the beliefs and experience reported by providers that impacted their practice decisions, such as personal or family experiences with mental health and pregnancy, and the role of the provider in treatment planning. Processes used by providers to manage the inherent uncertainty of treatment in pregnancy included increasing their personal comfort, reducing uncertainty, diffusing responsibility, or improving their confidence in the treatment of mental health concerns during pregnancy. These processes lead to the consequences of engaging in treatment planning with pregnant clients, setting limitations around what the provider was willing to provide, or offering no care by discharging or referring clients elsewhere when pregnant. Data collection and analysis continued until theoretical saturation was achieved by defining and differentiating the properties of the salient dimensions until an overarching explanation, or perspective, was identified in the analysis, and the barriers and needs had been fully developed. Barriers were identified as dimensions that interfered with providers' ability or willingness to treat mental health concerns during pregnancy. Needs were identified by participants directly or implied in their responses as dimensions that would increase willingness or comfort with treating perinatal mental health concerns. Categories, dimensions, and selected subdimensions related to the barriers and needs that contribute to the preparedness to treat mental health concerns during pregnancy among PMHNPs are displayed in Table 1.

2.5 Ethical considerations

Human subjects approval was granted by the Institutional Review Board (IRB) of New York University, New York. Informed consent and consent to record were obtained prior to initiating study procedures and confirmed verbally on audio recording prior to beginning the interview. Verbal consent was deemed sufficient by the IRB for virtual interviews. Participants were informed that their data would be kept confidential and secure and all identifying information would be redacted prior to analysis or publication. Students of the authors were not eligible for participation. All participants were given a $50 gift card in appreciation for their time.

3. Results

3.1 Sample characteristics

A total of 17 participants were included in this analysis, including 15 licensed PMHNPs and two students who were currently enrolled in psychiatric mental health nursing masters' programs. Twelve participants self-identified as white, three as Black or African American, one as Asian American, and one as multi-racial. The mean age of participants was 47 (range 26-71) and the median length of experience was 7 years (range 1-20) in the PMHNP role and 20 years (4-40) for overall experience including time working as a registered nurse. Thirteen participants identified as women, three as men, and one as genderfluid/nonbinary. Participants were located across the Unites States with a majority located within the Northeast. New York State was the most common state of employment (n = 5), followed by Texas (n = 2). Only one participant provided care in a language other than English (Spanish). Demographic details of participants are further summarized alongside national workforce estimates in Table 2. In some ways, the sample reflects greater diversity than

the overall PMHNP workforce described by the APNA in 2022. However, most providers identified as white, female, and worked in urban settings. The perspectives and lived experiences of other identities are less well represented in this analysis.

Table 1. Categories, dimensions, and selected subdimensions related to the preparedness of PMHNPs to provide treatment for mental health concerns during pregnancy

Perspective: Uncertainty Tolerance			
Category	**Dimensions**	**Example Subdimensions**	
		Barriers	**Needs**
Context	Preparation for professional practice including pre-licensure education, training, and early professional experiences Practice characteristics such as clinic or group practice, individual practice, available resources, collaborators/consultants, scope of practice and practice authority regulations Personal experience with mental health and pregnancy Family experience with mental health and pregnancy	Inadequate preparation due to limited inclusion in prelicensure training, incomplete or inadequate guidance on the treatment of perinatal mental healthcare needs, "warnings" from faculty and preceptors, limited prelicensure clinical hours, lack of perinatal mental health preceptors Scope of practice limitations (e.g. controlled medications), restricted practice authority including treatment limits set by supervising physicians or costs paid to supervising physicians Lack of local resources for collaboration, potential medical needs, and referral sources. High anxiety among those working in individual private practice setting.	Increase content related to perinatal prescribing in prelicensure training with focus on how to treat mental health concerns during pregnancy not merely what to avoid, interdisciplinary and interprofessional learning opportunities, inclusion of PMHNPs in formal reproductive psychiatry fellowships, creation of subspecialty certification Appropriate scope of practice and practice authority regulations
Conditions	Beliefs and experiences impacting practice: Perspective on the role of the provider in treatment planning Beliefs about research/knowledge	Perception of low quality of research/information Lack of awareness of clinical consensus guidelines and resources	Improved dissemination of research, guidelines, and clinical resources currently available to providers Increase awareness of available resources
Processes	Improving confidence through continuing education, experience, and consultation Increasing personal comfort Reducing uncertainty Diffusing responsibility	Avoidance of negative emotional experiences of fear, uncertainty, anxiety Limited uncertainty tolerance in the setting of uncertain or unpredictable outcomes Risk assessment centered on risk to self, risk to fetus due to medication exposure	Improved preparation for the emotional aspects of professional practice, development of insight into impact of anxiety on treatment planning and decision making Risk assessment centered on risk to patient and/or fetus due to untreated mental health concerns during pregnancy Improved understanding of malpractice liability and effective risk management strategies without restricting access to evidence-based care
Consequences	Engaging in treatment planning with clients through: setting limitations on treatment options offering no care by discharging or referring clients who are pregnant elsewhere collaborative and patient-centered care		

Table 2. Participant demographic information with workforce PMHNP comparison (n = 17)

Participant characteristic	Sample		U.S. Workforce (28)	
	Mean	Range	Mean	Range
Age in years[§]	47	26-71	54.1	25-88
Race/ethnicity	**n**	**%**		**%**
White	12	71		80
African American/Black	3	18		10
Asian American	1	6		5.95
Latinx	0	0		2
American Indian or Alaskan Native	0	0		2
Native Hawaiian or Pacific Islander	0	0		0.5
Multiple races/ethnicities	1	6		*
Gender identity	**n**	**%**		**%**
Female	13	76		88
Male	3	18		10
Nonbinary/Gender Fluid	1	6		0.44
Work setting†	**n**	**%**		**%**
Urban	12	71		88
Suburban	2	12		11
Rural	4	24		1
Practice Authority	**n**	**%**		
Full (OR, MA, NH, NY, VT)	9	53		
Reduced (IL, LA, NJ, WI)	4	24		
Restricted (GA, MO, TX)	4	24		

[§]One participant declined to answer. *Data not reported. [†]Multiple answers possible

Most participants entered the PMHNP profession with an MSN (n = 8) or post-masters' certificate (n = 6) and one doctor of nursing practice (DNP). In addition to their training as PMHNPs, two participants were certified nurse midwives (CNM), two were family nurse practitioners (FNP), and one was also a licensed psychologist (PsyD). Two participants had obtained a PhD in nursing and one had both a PhD and DNP degree. All practicing PMHNPs provided medication management and all but two provided individual psychotherapy to some patients. Many participants had more than one place of employment. Ten participants described their work setting as an individual private practice. Two worked in a group private practice, four in a mental health clinic, two in a primary care clinic, and one worked in a prenatal care setting. One participant had recently retired at the time of the interview. Both PMHNP students worked in perinatal care settings as registered nurses and intend to pursue perinatal mental health as a specialty. Table 3 provides additional information regarding education and professional characteristics of the participants.

Many, but not all, participants endorsed a lack of preparation and hesitation to treat patients with medication when pregnant. Generally, low willingness was associated with a lack of knowledge or experience and with efforts to avoid personal discomfort or legal liability for possible negative outcomes. While several barriers and needs were explicitly described by the participants, our analysis also identified needs that were implied by the responses and their implications. The barriers and needs discussed in this paper refer to PMHNPs' comfort and/or willingness to provide psychopharmacological treatment for pregnant clients.

3.2 Identified barriers

3.2.1 *Scope of practice and practice authority*

Full, reduced, and restrictive practice authority were represented among our participants. Many participants described the ways their local scope of practice or practice authority limited or facilitated their ability to care for pregnant people with mental health concerns. For example, one PMHNP explained that in order to provide controlled medications (e.g., benzodiazepines, stimulants) in his state, he must have a collaborative agreement with a physician which he has decided is not practical for his practice. Another PMHNP shared that

the costs of paying a collaborative physician limited his ability to expand his private practice. One PMHNP summarized her experience working in a restricted practice state-

"[This state] is a highly restricted practice state, so I am required to work under a supervising physician. They have to review minimum 10% of all of my notes. And then every single note for every controlled prescription I prescribe. I am not allowed to prescribe Schedule II drugs. I am, however, allowed to recommend them, have my supervising psychiatrist review my note, and if she agrees, send the medication. We meet for supervision. So, it's very much a collaborative relationship" (11).

Table 3. Professional characteristics (n = 17)

	Mean	Range
Professional characteristic		
Mean length of experience as PMHNP*,† in years (range)	7	1-20
Mean length of experience overall in years (range)	20	4-40
	n	**%**
Initial mental health preparation		
MSN	8	47
DNP	1	6
Post-master's certificate	6	35
Current PMHNP student	2	12
Additional credentials, academic degrees, and training§		
Family nurse practitioner	2	12
Certified nurse midwife	2	12
DNP (in addition to PMHNP degree)	1	6
Psychologist (PhD or PsyD)	1	6
PhD (subject other than psychology)	3	18
Perinatal mental health or reproductive psychiatry training	3	18
Practice setting§		
Retired	1	6
Outpatient settings		
Individual private practice	10	59
Group practice	2	12
Mental health clinic	3	18
Telehealth mental health service	1	6
Primary care clinic	2	12
Prenatal care clinic	1	6
Services offered§		
Medication management†	15	100
Individual psychotherapy†	13	87
Couples and/or family therapy†	2	12
Group therapy or skills groups	2	12
Perinatal care, lactation consultation	1	6
Payment options§		
Private insurance	14	82
Public insurance	6	35
Out of network/private pay only	1	6

*PMHNP Psychiatric Mental Health Nurse Practitioner; †Excludes current students from calculation; §Some participants may endorse more than one category and the total may exceed the total number of participants.

Limits to practice might also be imposed at the individual level, for example one PMHNP in a restricted practice state explained that "in a state like [redacted], we work closely with whoever the supervising psychiatrist is, and if they say, 'Yeah, I don't really do that,' quite frankly, neither can you as an [nurse practitioner] or a [physicians assistant]" (11). Therefore, if the supervising psychiatrist did not want to treat pregnant patients, neither could the nurse practitioners working under their supervision.

Not all concerns about practice authority pertained to restricted practice. One participant expressed concern that full practice authority may lead to some PMHNPs to work in private practice without adequate training or experience-
"We have an independent practice state in [this state], so that's good, but I don't think anybody ever envisioned that people would get out of school with 500 and 750 clinical hours and just start practice. You don't have the experience and you don't know what you don't know, and who are you going to ask? You can get on message groups and stuff like that, but that's not really a good way to answer complicated clinical questions." (7)

3.2.2 *Resources*

Many PMHNPs described a lack of local resources in terms of potential collaborators, perinatal specialists, nearby medical care, and referral sources. Many providers felt more comfortable treating pregnant clients if they were working in primary care or mental health clinics, due to ease of consulting colleagues or ordering laboratory studies compared to working in an individual private practice. For example, one PMHNP described his consideration of whether, or how, to continue to provide medication management at part of his practice at all-
"I was saying that being a solo provider, I think I'm going to drop medication management services. But [. . .] I just think I'm going to do it maybe as a contractor or as an employee [. . .] embedded within an agency that, you know, looks at more severe and persistent mental illness versus the worried well, number one. And number two, [an agency] that has medical backup so that if I need labs or need to collaborate with a primary care person, that it's easy. It's more of like a wraparound kind of a thing." (9)

Consistent with the above, PMHNPs in individual private practice settings felt more comfortable prescribing to pregnant clients if they had an established relationship with an expert in perinatal mental health with whom they could consult. Not all providers experienced the lack of resources in their area as a reason to avoid treating pregnant clients. Instead, some providers felt compelled to learn how to provide this care "because there is no one else." One PMHNP in a full practice authority state expressed her belief that some nurse practitioners feel responsible to provide care in settings that other professions find less desirable-
"But the reason the nurse practitioners are there in the rural areas, et cetera, is no one else wants to be there. And we're willing to be there, we're willing to give this care." (07)

3.2.3 *Quality of research*

Outside of formal training, many participants also perceived a lack of available information in the scientific literature and appeared unaware of existing guidelines, clinical consensus, and professional help-lines that are currently available.
"Personal hesitation with continuing medication in pregnancy. Just kind of not, I don't feel like the research is really well-rounded when it comes to taking medications in pregnancy and it definitely leads me to be more hesitant with continuing medications because you just don't always know." (06)

Some PMHNPs characterized the current state of scientific literature in a manner that dramatically underestimated the relative safety of specific medications during pregnancy and consensus within the research with comments such as "well, we just don't know." One participant explained-
"I mean the research is not always clear on how medication can change a child's trajectory, it's just not always clear. It just says it can get into the bloodstream. It can translate from mom to baby. That's what it said. You know, but that doesn't tell me what could happen. Could the baby grow an extra toe, I have no idea as a clinician." (03)

3.2.4 *Limited opportunities for learning*

Current students described feeling limited in their ability to find preceptors in their desired specialty. Their opportunities were limited by the availability of local clinicians that specialize in perinatal mental health and were willing to precept graduate students. They described limited clinical experience in perinatal mental health as an important barrier to pursuing this subspecialty even when specifically interested in the topic.

3.3 Identified needs

3.3.1 *Updates to PMHNP curriculum*

Most participants agreed that PMHNP programs should include more content related to perinatal mental health care in their course work. Participants often connected the hesitation to treat pregnant patients to a lack of information: "Maybe there is hesitation from a provider's standpoint of not really having that knowledge to feel like you're doing a good enough job of giving them the full information" (06). Many of the participants stated that they would not treat patients who were pregnant and named inadequate training, knowledge, or experience to confidently provide care during

pregnancy. Most participants stated that there was very little information about mental health during pregnancy and its treatment in their education-

"I think it would be very helpful if the school would even have just one class, you know, of, 'This is our psych med class and we're having a guest speaker who specializes in pregnancy to come and like teach that topic,' if like the professor themselves isn't well versed in it or something, because it seems like they are still, kind of, teaching stuff that seems outdated." (15)

Often, participants reported that the educational emphasis was on what not to do without providing information about what the best practices are during pregnancy. Many also believed they were advised to avoid medication during pregnancy all together-

"A lot of the education is kind of geared toward what not to do [...] a lot of it leaves you feeling that you shouldn't be treating these patients or gearing the treatment towards not giving them medication" (06).

Those that believed their training exposed them to more information about perinatal mental health and prescribing practices also learned from women's health nurse practitioners or CNMs that were in their cohort as post-masters' certificate students. One participant noted that this topic was a priority in her program to help address a local need and prepare well-rounded PMHNPs that could address all mental health needs in their rural community. Many participants were CNMs or FNPs who had returned to receive a post-masters' certificate in psychiatric mental health advanced practice nursing after they observed the negative impact a lack of local providers willing to provide mental health care for pregnant people had on patients in their practice. Participants who were certified as both FNP or CNM and PMHNP noted that they received very little information about this topic in either of their programs. Many participants expressed an interest in interdisciplinary learning opportunities and emphasized the benefits of learning from multiple specialties including obstetricians, psychiatrists, and others.

3.3.2 *Resources*

Some providers described specific resources they believed would be helpful to their practice and increase their comfort prescribing to patients during pregnancy. Some of these resources already exist, and requests for them highlight a lack of awareness among PMHNPs. For instance, several PMHNPs expressed an interest in published guidelines or telephone helplines for providers-

"And I personally, now at many years in, would love to have a helpline that I could call and run a case by a psychiatrist. I used to be in different supervision groups where I had access to psychiatrists where I could chew these over and listen to their insights. They've got a lot more training and experience, I'd love to talk to them" (07).

However, evidence-based treatment guidelines[37,38] and reproductive psychiatry consult helplines[39,40] are currently available to aid providers in the treatment of pregnant patients.

3.4 Implied needs: De-centering the provider; recentering the patient

3.4.1 *Emotional preparedness*

Participants often spoke of their practice in terms of the emotional impact of their roles using terms such as "fear," "terrified," "uncomfortable," "confidence," and how these emotional states shaped their treatment practices. An important distinction was observed between being "willing to" and "comfortable with" treating pregnant clients. For example, many providers described feeling uncomfortable with the role and experience fear or anxiety that something "may go wrong." However, some are still willing to treat during pregnancy—

"I certainly don't want to let my own fear, especially if it's not completely founded or rational fear, I don't want to let that get in the way of care, the care. So, I'm willing to take some risk, in order to provide good care and to make sure they have good care, whether I provide it or someone else. But it often feels like [...] they already have a relationship with me. I don't know. They trust me. So, if I can make it work, I try to make it work" (13).

Student participants reported being warned away from this specialty by their instructors and other faculty. These instructors appear to convey their own fear of working with patients who are pregnant "that's a dangerous field to work in" (15). We believe these comments expose an implied need for prelicensure training and early professional socialization to better prepare PMHNPs to manage the emotional consequences of clinical practice.

3.4.2 *Malpractice and liability*

Another implied need can be found in the preoccupation with legal liability expressed by many participants. PMHNPs in this study expressed a diffuse and ambiguous fear of "something bad happening" that would then lead to them being sued for malpractice, however, this fear was rarely endorsed in the context of withholding treatment. While providers feared that they would be held legally responsible if something bad occurs as a result of medication exposure, they did not explore this fear about adverse events that might occur to the fetus or pregnant person due to untreated mental health

symptoms.

Providers who were more willing to treat pregnant people also expressed a more nuanced understanding of the probability of being sued for malpractice. For example, one PMHNP explained steps that a provider can engage in that minimize the risk of a malpractice suit-

"I think if you're practicing within your scope, you're documenting everything as you should, rationale for your decisions, as far as ensuring that your patient feels heard and knows about risk associated with any decision you're making. I think that goes a long way. That doesn't mean that that'll completely shield you, from, you know, patients that are allowed to sue their providers if they feel like the standard of care was not met, but I think those things help [...] I think if psychiatric providers are really comfortable with utilizing evidence-based practice and taking all the steps they need to justify or get a good understanding of their actions and decisions, such as consulting a supervising physician, and also generally, I feel like liability issues really stem from patients who experience providers who are not listening to them" (11).

Another explored that while the threat of a malpractice lawsuit might discourage some providers from treating this patient population, they felt more motivated to provide care-

"I am aware of the negative reinforcement of liability and malpractice and not wanting to make mistakes, but I feel more motivated by just wanting to be helpful and hoping for a positive outcome. In fact, I think that by being genuine, by wanting to help, by documenting reasonably well, the risk of liability is like pretty low." (14)

Providers appeared to overestimate or over-index on risk for legal consequences following an adverse outcome. These concerns highlight an opportunity to improve PMHNPs' knowledge of malpractice and liability policy and how to mitigate risk without unnecessarily restricting treatment options. Importantly, many PMHNPs did not explore the possibility of being liable for an adverse event if they withheld care or made treatment decisions that were not grounded in evidence.

4. Discussion

The insights shared by PMHNPs in this study illuminated a number of barriers and needs that must be addressed to increase the preparedness of the mental health workforce to treat pregnant patients and safely prescribe psychopharmacology when appropriate. Participants directly describe implications for practice, education, and policy in their interview responses and address the multi-level nature of barriers and facilitator of perinatal mental healthcare access.

4.1 Education and training

Nearly all participants believed that perinatal mental health and psychopharmacology during pregnancy should be included to a greater degree in prelicensure training programs. Some PMHNPs maintain child/adolescent or adult board certifications, but these are no longer offered for newly graduating PMHNPs and the only board certification available now is for the entire lifespan.[41] However, many participants report that very little information was included in their program about pregnancy, meaning a major part of the lifespan has been omitted. Given the limited amount of information included in most PMHNP programs related to safely prescribing medications during pregnancy, it is therefore possible that newly graduated PMHNPs are entering private practice without the repository of knowledge and experience needed to provided treatment during pregnancy and without the professional connections for consultation.

Participants also highlighted the importance of multispecialty training and value opportunities to learn with other disciplines such as midwives, obstetricians, psychiatrists, primary care providers, and others. According to the International Society of Reproductive Psychiatry, there are only nine fellowship programs in reproductive psychiatry.[42] Reproductive psychiatry fellowships are primarily oriented for physicians with few opportunities for nurse practitioners. Schools of nursing may consider developing dual certification programs between mental health and women's health midwifery as many participants sought out both certifications without a preexisting option that synthesizes both topics in order to feel qualified to treat this patient. Nursing schools could also develop subspeciality certificate programs for perinatal mental health similar to those established by many schools for substance use treatment, palliative care, or transgender non-binary health care practices.

Two implied needs identified in our analysis have meaningful implications for education and training. The emphasis on one's own emotional experience and the avoidance of discomfort evident in many responses suggest that education must prepare students for the emotional consequences of practice. Education related to identifying one's own emotions/biases, how they may or may not show up in practice, and how to work through them should be included in pre-licensure programing, continuing education, and early professional development. It is also possible that an outsized focus on liability belies a misunderstanding of malpractice and liability and may be carried over from the emphasis liability in the field of obstetrics. This again suggests an area of improvement for prelicensure training of nurse practitioners. Educators should be sure to include clear and accurate information about risk for liability malpractice and how to

mitigate those risks.

Many PMHNPs believed that treatment guidelines and consult helplines would help them to feel more comfortable treating pregnant clients. Participants' lack of awareness of these resources suggests that the promotion of these materials has not reached a wide range of providers. PMHNPs also spoke to elements of their professional identity that prompted them to provide care to patients when they perceived that "no one else" was willing or able to provide this care. However, PMHNPs with colleagues who were experts in in perinatal mental health felt more equipped to provide psychopharmacological treatment for mental health during pregnancy.

4.2 Policy

Participants discussed the ways in which state scope of practice and practice authority facilitated or limited their ability to provide medication to clients who are pregnant. State boards of nursing must work to ensure that practice regulations are not overly restrictive to the point where they foreclose care to people in need and also not excessively permissive to the degree that they expose patients to inadequately prepared practitioners.

4.3 Limitations

This study had several limitations. Though recruitment efforts sought to include a diverse group of providers in terms of race, ethnicity, age, experience practice settings, locations, and other factors, the majority of participants and all of the authors identify as white, female, and practiced in an urban setting. While this is reflective of the overall PMHNP workforce, it limits the analysis of culturally specific contexts that contribute to the treatment of perinatal mental health concerns. Future research should aim to address this limitation and provide a more comprehensive understanding of how the individual, provider, interpersonal level may influence the management of perinatal mental health through discrimination, structural racism, lack of cultural humility, and other political or societal factors. We conducted this study in the U.S. and though the findings may be transferable, differences in scope of practice and practice authority may limit their direct applicability to international settings. However, our results are consistent with reports of psychiatrists' attitudes in several countries,[21,23,24] and multi-level barriers described in the MATRIx conceptual framework.[30] Future work is needed to further synthesize and expand these findings within the perinatal mental health field and implementation research to bridge the gap between knowledge and care.

5. Conclusion

Many PMHNPs felt unprepared to provide medication management of mental health concerns to people who are pregnant. PMHNPs name a lack of information in their training, limited professional opportunities, and inadequate resources as the primary motivations behind their reluctance. Scope of practice and practice authority limitations also curtail PMHNPs' ability to treat pregnant patients even when they are willing to do so. Participants described very little inclusion of this topic in their prelicensure training and individuals who wanted additional information had to seek out learning opportunities outside of their formal programming. This reliance on individual providers to have the interest, motivation, time, and finances to seek additional training is likely to result in a dearth of qualified providers to meet the mental health care needs of pregnant patients.

Participants believed that including material regarding the treatment of mental health concerns during pregnancy in training programs, continuing education, and the creation of resources to support outpatient providers will improve workforce preparedness to treat pregnant patients. However, many participants were not aware of existing resources, including trainings, guidelines, and consult hotlines that are already available. Participant responses also suggest opportunities for improvement of pre-licensure training related to the emotional competencies required of PMHNPs and greater clarity regarding the relative risk to providers following an adverse outcome.

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Authors contributions

This manuscript was developed as part of Dr. Eakley's PhD dissertation which has been submitted for publication on ProQuest as part of the graduation requirements for the degree of Doctor of Philosophy at NYU Rory Meyers College of Nursing. Dr. Eakley was responsible for project conceptualization, funding acquisition, investigation, formal analysis, visualization, drafted original manuscript, and revisions. All other authors provided supervision to the research and contributed to the manuscript through review and editing. Drs. Lyndon and Kool were also responsible for methodology advisement. Dr Lyndon contributed to the validation of the analysis. All authors read and approved the final manuscript.

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CONFLICTS OF INTEREST DISCLOSURE

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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No additional data are available.

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