

1 Title: "Pain in my heart": Understanding perinatal depression among women living with HIV in
2 Malawi

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18

19 Abstract

20

21 Background: Perinatal depression (PND) can interfere with HIV care engagement and outcomes.
22 We examined experiences of PND among women living with HIV (WLWH) in Malawi.

23

24 Methods: We screened 73 WLWH presenting for perinatal care in Lilongwe, Malawi using the
25 Edinburgh Postnatal Depression Scale (EPDS). We conducted interviews with 24 women
26 experiencing PND and analyzed data using inductive and deductive coding and narrative
27 analysis.

28

29 Results: Women experienced a double burden of physical and mental illness, expressed as pain
30 in one's heart. Receiving an HIV diagnosis unexpectedly during antenatal care was a key
31 contributor to developing PND. This development was influenced by stigmatization and social
32 support.

33

34 Conclusions: These findings highlight the need to recognize the mental health implications of
35 routine screening for HIV and to routinely screen and treat PND among WLWH. Culturally
36 appropriate mental health interventions are needed in settings with a high HIV burden.

37

38 Introduction

39 The scale-up of antiretroviral therapy to all pregnant and breastfeeding women living
40 with HIV, known as Option B+, has the potential to dramatically improve maternal health and
41 end mother-to-child HIV transmission (MTCT) (1). In Malawi, all pregnant women diagnosed
42 with HIV in antenatal care (ANC) begin lifelong antiretroviral therapy (ART) under Option B+
43 (2). However, women who initiate ART during pregnancy under Option B+ are one-fifth as
44 likely to return to HIV care after their initial visit compared to non-pregnant women initiating
45 ART in Malawi (3). Maternal mental health is likely an important factor in undermining the
46 delivery of Option B+ by affecting initiation of and retention in HIV care, with implications for
47 ongoing risk of MTCT and negative effects on women's quality of life and psychological well-
48 being (4).

49 Globally, adults living with HIV are at an increased risk of depression, with the
50 association being stronger among patients who are newly diagnosed and women (5). A
51 systematic review conducted in high-, middle-, and low-income countries found that pregnant

52 and postpartum women living with HIV are at particularly high risk for perinatal depression
53 (PND) due to multiple bio-psychosocial risk factors (4). These risk factors include increased
54 stress, HIV-related stigma, a lack of social support, concerns about disclosing their HIV status,
55 and concerns about their infant's health and HIV status (4).

56 Through Option B+, more women are becoming aware of their HIV status and initiating
57 ART during the perinatal period. Simultaneously, many are experiencing PND. PND is known to
58 affect 13.1% of women in low and middle-income countries, with as many as 19.2% of women
59 having a depressive episode within the first three months postpartum (6,7). Among women living
60 with HIV in Sub-Saharan Africa, a meta-analysis found a pooled prevalence for PND of 42.5%
61 for prenatal women and 30.7% for postpartum women, indicating a high prevalence among this
62 population (8).

63 PND is known to have detrimental effects on both mothers and infants (4,9). For
64 example, behavioral traits associated with depression (i.e., neglecting ANC) can lead to adverse
65 effects on fetal health and child development (9). Among women living with HIV, PND is also
66 associated with increased risk for HIV progression as a function of dietary changes, impaired
67 immune function, and suboptimal ART adherence and engagement in HIV care (10,11).

68 Given the connections between HIV, PND, and maternal and infant health, there is a
69 great need for a fuller understanding of the PND experience of women living with HIV in low-
70 income settings (12,13). Understanding the social etiology of PND will guide efforts to intervene
71 on and alleviate PND among women living with HIV. Addressing PND among women living
72 with HIV may also improve women's retention in HIV care, a global health priority, as well
73 broader maternal and child health outcomes (14). This study aims to understand the experience
74 of PND among women living with HIV in Malawi.

75 Methods

76 *Study Site and Population*

77 We completed in-depth interviews about PND with women seeking pre- or postnatal care
78 at five ANC clinics (two urban and three rural) in Lilongwe, Malawi between July and August
79 2018. All women living with HIV seeking pre- or postnatal care at the study sites who screened
80 positive for PND and who were over the age of 18 were eligible for the study. PND was defined
81 as depression occurring during pregnancy or the first 12 months postpartum (14,15), and was
82 assessed using the Edinburgh Postnatal Depression Scale (EPDS), which was previously
83 validated in Chichewa (16,17). Women were classified as having PND if they received a score of
84 ≥ 10 on the EPDS. Consecutive women were screened by a trained counselor at each site until
85 four to five women with PND were identified who agreed to participate in the study. Women
86 reporting suicidal ideation in the EPDS were referred to mental health specialists as appropriate.

87 *Data Instruments*

88 We developed a semi-structured interview guide to explore women's experiences of
89 PND, its determinants and manifestations, and its impact on HIV care engagement. This guide
90 began by presenting PND symptoms and asking if they had seen someone with these symptoms
91 and how they would describe them, then presented vignettes, or short stories with hypothetical
92 characters, and closed by asking women about their personal experiences with depression.
93 Vignettes were used due to the sensitivity of the study topic (18). The vignette in the interview
94 guide centered around a woman with a new child experiencing signs of PND and receiving an
95 HIV diagnosis. The interviewer then asked how this woman would be treated in her community
96 and how the woman being interviewed would handle the situation. The data collector then asked
97 how the woman had been feeling in her most recent pregnancy and who she had confided in. The

98 guide closed with a discussion of depression treatments, namely how the woman thought those
99 experiencing depression would be most helped. The guide was created in English and translated
100 into Chichewa. A trained, female research assistant from Malawi conducted all interviews and
101 met with the study team weekly to discuss the data collection process.

102 *Analysis*

103 All interviews were conducted and audiotaped in Chichewa, simultaneously transcribed
104 and translated to English by AK, and uploaded to NVivo v.12 for data analysis (19). We used a
105 combination of thematic and narrative analysis (20). Analysis and interpretation began during
106 data collection as interviews were transcribed and translated (21). After reviewing the first few
107 transcripts, two research assistants (KL; JD) based in the United States created a codebook to
108 begin categorizing data that included both descriptive and interpretive codes (20). Using these
109 descriptive and interpretive codes, the first author coded the data using a hybrid of data-driven
110 (i.e., inductive) coding and concept-driven (i.e., deductive) coding, with concepts coming from
111 prior literature, the research team's previous experience, and the research questions (22). The
112 first author also analyzed words and phrases that were significant, listed their meanings, and
113 created *in vivo* codes to capture phrases women used to describe their PND (13,22). The first
114 author met regularly with the Malawian interviewer and translator and other members of the
115 research team to clarify when translation was unclear, refine the codebook, and identify themes.

116 The analysis also involved creating analytic memos to document the development of the
117 team's understanding of women's experiences of living with both PND and HIV and to identify
118 emergent patterns and relationships between codes, which assisted in connecting the data
119 (22,23). The first author then created matrices to identify and analyze similarities and differences
120 between participants for key themes (24). Lastly, using narrative analysis, the first author wrote

121 an HIV diagnosis narrative based on the participant ‘Ruth.’ Because women’s stories often began
122 with their HIV-diagnosis, a life-changing event, the narrative structure assisted in analysis by
123 establishing chronology (20,25,26). We use the illustrative case of Ruth to highlight processes
124 over time within one woman’s experience, as a complement to thematic summaries and quotes.

125 This study was approved by the Institutional Review Boards at the University of North
126 Carolina at Chapel Hill and at the Malawi National Health Sciences Research Committee.

127 Results

128 *Demographic Information*

129 73 women were screened and 24 (33%) had elevated symptoms of PND. We conducted
130 24 in-depth interviews (14 with prenatal and 10 with postpartum women with living with HIV
131 and PND). Of the 24 with elevated symptoms of PND, 14 were pregnant and 10 were postpartum
132 at the time of the interview (Table I). The proportion of women with PND was higher at the three
133 rural sites (range: 45-71%) compared to the two urban sites (13-29%) (Table I). Of the 73
134 women screened, 14 (19% of all women; 58% of those with PND) reported suicidal ideation.
135 Report of suicidal ideation was also higher at the three rural sites (27-63% of all women) than at
136 the urban sites (0-24% of all women).

Clinic Site	Clinic Locale	Number Screened for PND+	Number with PND	Number with Suicidal Ideation	Percent with PND	Percent with Suicidal Ideation
Site A	Urban	30	4	0	13%	0%
Site B	Urban	17	5	4	29%	24%
Site C	Rural	11	5	3	45%	27%
Site D	Rural	7	5	2	71%	29%
Site E	Rural	8	5	5	63%	63%
Total		73	24	14	33%	19%

+ Women were screened until 4 to 5 were found to have PND at each site.

137

138 Women were, on average, 27 years old and most had more than one child, were married,
139 unemployed, and had at least some primary education (Table II). One woman was beginning
140 ART at the current appointment while the remainder had already initiated ART. Most women
141 (71%) had received their HIV status over two years ago and none had been screened for or
142 diagnosed with PND previously.

Table II: Women's Demographic Information	
Women's Demographic Information	N (%)
Type of Participant	
Prenatal Woman	14 (58%)
Postnatal Woman	10 (42%)
Age (Mean (SD))	27 (5.48)
Pregnancy Number	
First	3 (13%)
Second	9 (38%)
Third	6 (33%)
Fourth	4 (17%)
Fifth or more	2 (8%)
Marital Status	
Married	20 (83%)
Separated	2 (8%)
Divorced	2 (8%)
Education	
None	2 (8%)
S1-S7	12 (50%)
S8	2 (8%)
Secondary or More	8 (33%)
Initiating ART for the first time	
Yes	1 (4%)
Length Living with HIV	
2+ years	17 (71%)
1-2 years	1 (4%)
6 months – 1 year	1 (4%)
Diagnosed in last 6 months	5 (21%)

143

144 *Women's Experience of PND*

145 Here we present the experiences of women living with both HIV and PND in Malawi.
146 We highlight the narrative of one respondent, 'Ruth,' alongside others' stories to demonstrate
147 how PND often manifests and how a woman's HIV diagnosis is a key contributor to her

148 development of PND. Ruth’s story represents a typical case, which helps provide insight into
149 women’s PND experiences.

150 *“Pain in my heart”: a Double Burden*

151 Ruth was a pregnant participant who had received an HIV diagnosis during a past
152 pregnancy over two years ago. When Ruth and others described how their PND presented itself
153 in their lives, they often described their culmination of symptoms causing “pain in my heart.”
154 When talking about her depression during her interview, Ruth said that her heart was troubled;
155 her depression would not stop in her heart and was persisting because it had come from the
156 combination of her HIV diagnosis, pregnancy, and marital issues. Other women used phrases
157 referring to the heart. Women used this phrase of having pain in their hearts to describe how
158 depression felt to them and how this feeling persisted in their heart throughout time, disrupting
159 their lives and not allowing them to tend to other tasks. When a prenatal woman that had been
160 diagnosed in her current pregnancy was asked if she knew about depression, she described her
161 own experience as the following: “from the time I started my HIV treatment, I feel a lot of pain
162 in my heart. It’s not like I am worried about anything, but I just feel so much pain in my heart, as
163 if I have been shocked by something” (prenatal, living with HIV <6 months). This pain persisted
164 because she did not feel that she could confide in anyone about her HIV status and because her
165 husband had abandoned her once she disclosed her diagnosis. A woman diagnosed with HIV
166 within the last two years said that she kept feeling an overwhelming pain in her heart that kept
167 her from working and that this pain stemmed from her overthinking and worry. This worry was
168 about raising her children alone, as her husband had abandoned her after she became HIV-
169 positive. Importantly, women explained that understanding how others felt in their heart and
170 helping other women strengthen their heart were potential mechanisms for addressing PND.

171 The persistence of women’s depression was often expressed through women’s double
172 burden of living with both HIV and PND. This double burden was closely tied to having an
173 unexpected HIV diagnosis, with the diagnosis making the depression harder to handle. During
174 her interview, Ruth described the persistence of her depression and the pain in her heart as a
175 large burden. Discussions of this double burden were most common when women were asked to
176 imagine a woman with PND and HIV and one with only PND. HIV and PND were both thought
177 of as diseases, one being physical and one being mental: “one of them [with only PND] is just
178 depressed but her body is okay whereas the other one [with both PND and HIV] is depressed and
179 her body has viruses” (prenatal, living with HIV over 2 years). All women said that living with
180 both would be more difficult and would be different than only having PND.

181 Women also expressed that they could handle their PND more easily if it did not co-
182 occur with HIV. As a woman’s HIV diagnosis was a key contributor to her developing PND,
183 without this diagnosis, many women believed they would not have developed it or would have
184 experienced a milder form. One woman stated that receiving an HIV diagnosis made her PND
185 worse: “you get very depressed because you think of the problems you already have at home and
186 then you have even more problems now. The depression increases” (postnatal, living with HIV
187 over 2 years). Without an HIV diagnosis, PND was also perceived to have an endpoint whereas
188 PND stemming from HIV was expected to be lifelong because the primary cause (i.e., their HIV
189 status) was also lifelong.

190 Ruth and others felt that this double burden combined with stigma and marital issues led
191 them to have suicidal thoughts, as they claimed that committing suicide would rid them of all of
192 their problems. Fourteen out of 24 women (58%) expressed suicidal ideation and such thoughts
193 were more common among currently pregnant women and those lacking support from their

194 partner. Of the 14 women with suicidal thoughts, nine had passive or low-risk suicidal ideation
195 and five had active or high-risk suicidal ideation.

196 In addition to suicidal thoughts, women also revealed that their burdens could affect their
197 ART adherence. Ruth explained that “if you are depressed, you cannot manage to do those things
198 [take ART medication] because of the depression and you’re hurt in your heart every day,
199 because when someone is depressed the heart always hurts. For you to be bothered about your
200 life, you just say whatever happens will happen.” Women’s PND resulted in hopelessness, which
201 could lead them to either forget to take their medication or to lack the motivation to go to the
202 clinic. At the same time, Ruth said that women often think too much when they have PND, and it
203 is harder to remember one’s medication when one has so many thoughts.

204 Yet, suicidal thoughts did not result in suicide attempts and ART barriers did not result in
205 women’s lack of adherence to ART for Ruth and many others. High reported adherence was
206 most common among women in urban areas and among postnatal women. Ruth was motivated to
207 take her ART “so that the baby [she was] expecting should not go through the burden that [she
208 was] going through” by contracting HIV. She also felt responsible for her other children and
209 wanted to remain healthy so that she could raise them. Adherence was often made easier when
210 women had disclosed their status to others, as they then felt accountable to those to whom they
211 had disclosed and felt encouraged to accept their HIV status and begin and remain in treatment.

212 *Intersecting Identities: HIV-Positive, Pregnant, and in an Unstable Marriage*

213 Ruth had known she would be tested for HIV as part of routine ANC, but did not suspect
214 that she had contracted HIV. In discussing her HIV diagnosis, she stated that “depression is
215 inevitable because you have been diagnosed with HIV at a time you were not expecting it.” Ruth
216 found it difficult to accept the reality of having HIV when she did not anticipate a diagnosis.

217 For Ruth and others that received their HIV diagnosis during pregnancy, their diagnosis
218 compounded pre-existing anxieties about being a mother, predisposing them to develop PND.
219 One woman in her fourth pregnancy began “wondering how [she] would be able to look after
220 [her children] with the HIV and [kept] wondering if this was the end of [her] life” after her
221 diagnosis (postnatal, living with HIV 1-2 years). She continually expressed her worry about her
222 diagnosis and about how she would be able to parent while living with HIV.

223 In addition to being pregnant when receiving her diagnosis, Ruth learned that her
224 husband was also HIV-positive but had been hiding his diagnosis from her. Upon learning of
225 Ruth’s diagnosis, her husband acted as though she “went wayward and brought the virus into the
226 marriage.” Like Ruth, most women were in relationships in which they believed they had
227 contracted HIV from their husband. Yet, most women’s husbands reacted negatively to their
228 wives’ HIV diagnosis and denied their own responsibility. Women’s HIV diagnoses combined
229 with their pregnancy often exacerbated preexisting marital issues and created new ones. These
230 marital issues meant that women lacked social support from a partner, contributing to them both
231 developing PND and accelerating and exacerbating it:

232 “I sometimes do not talk to him because something is troubling me. To think the same
233 person who transmitted the virus to me is the one who is insulting me...” (prenatal, living
234 with HIV < 6 months).

235 For Ruth, the combination of not anticipating her HIV diagnosis, being pregnant when
236 she received her diagnosis, and unknowingly contracting HIV from her husband resulted in her
237 feeling overwhelmed and like her challenges were insurmountable. It was then difficult for her to
238 accept the reality of having HIV in the midst of her overwhelming circumstances. Many other
239 women noted an inability to accept an HIV diagnosis or a denial of their diagnosis as

240 contributing to feeling depressed. While an inability to accept a diagnosis and an active denial of
241 a diagnosis may be different, women used these two descriptions interchangeably.

242 *Stigma and Social Support*

243 In addition to their marital issues, many women felt stigmatized and unsupported by
244 others. One woman stated that “people who can encourage us to live a life with little depression
245 are rare” (prenatal, living with HIV over 2 years). Both HIV and PND were emotionally charged
246 topics in women’s communities and women often received mixed reactions from community
247 members. Mixed or negative reactions largely stemmed from others not accepting women’s HIV
248 diagnosis, meaning that they did not accept the women as their full selves with an HIV diagnosis.
249 One woman directly linked HIV stigma to her development of depression: “I sometimes ask
250 myself if [my community knows] about my HIV status and if that is the reason they treat me in
251 the way they do. I then get depressed because I think too much” (postnatal, living with HIV over
252 2 years). Women feeling stigmatized by others often led to their overthinking, which was both a
253 cause and symptom of PND.

254 While HIV stigma was a prominent determinant of some women’s depression, others felt
255 directly stigmatized for their depression because they felt that they were perceived as a bad
256 mother. Women were sometimes warned that they “shouldn’t be sad, because the baby [will]
257 also be sad” (prenatal, living with HIV over 2 years), or were described as sick, mad, in trouble,
258 lazy, or panicked. Importantly, once women were stigmatized due to their PND, they sometimes
259 began to worry that people were stigmatizing them due to their HIV status even if people did not
260 know their status, which created an internal cycle of worry. Still others felt a lack of love or
261 ambivalence towards them once people knew about their HIV or PND. Ambivalence towards

262 women in these circumstances was often as negative as active stigmatization, as women were not
263 supported and thus unable to move towards accepting their status and lessening their PND.

264 Yet, some women found sources of support. Linked to their denial or struggle to come to
265 terms with their HIV status, women did not immediately disclose their HIV status or feelings of
266 depression to others. Rather, they turned to prayer. Fourteen of the 24 women listed prayer as a
267 source of support in response to their HIV diagnosis. One woman said that she “would just pray
268 for God to remove [her] worries because...He is the one who can remove [her] anxieties”
269 (prenatal, living with HIV over 2 years), indicating that both she and those around her could not
270 remove her anxieties related to her HIV.

271 After prayer, many women turned to one or two specific people for support. Ruth
272 confided in one of her in-laws, and most women talked to a family member, friend, or their
273 husband. While most did not find support in their husbands, four women found encouragement
274 in talking with them, including two women who noted that their husbands were HIV-positive.
275 Women that had been living with HIV for longer were more likely to have found sources of
276 support. Additionally, if women knew others that were living with HIV, they were likely to serve
277 as sources of support.

278 Throughout women’s discussions of social support, they described social support as
279 being composed of three components: interaction, encouragement, and offloading or sharing
280 worries. Interaction was seen as a distraction for women to stop worrying about their HIV and
281 PND. Encouragement was discussed as both needed by women and provided by them to others
282 so that “[they] get strengthened in [their] heart” (prenatal, living with HIV over 2 years).
283 Encouragement thus helped their depression and their worries. Offloading was identified as a
284 critical component for preventing suicide. Some had not found anyone that they could share their

285 worries with: “I have never met anyone whom I could share my worries with... sometimes I get
286 depressed but can’t tell anyone” (postnatal, living with HIV over 2 years). Thus, women needed
287 a combination of all three components of social support, as they all served different functions in
288 alleviating PND.

289 Discussion

290

291 In our population, women with PND experienced a unique double burden of HIV and
292 PND, which was commonly expressed as having pain in their hearts and as worry. Women’s
293 HIV diagnosis, especially when it was unexpected and received during routine ANC, was a key
294 contributor to their developing PND. Women’s unexpected diagnosis intersected with their
295 pregnancy and marital relationships to contribute to their PND. These relationships were then
296 influenced, positively or negatively, by women’s social interactions and relationships.

297 Our study sheds light on the experience of women living with both PND and HIV in a
298 low-income country with high HIV prevalence. Three main themes emerged from our
299 interviews: a double burden of having a physical and mental illness, as expressed through having
300 pain in one’s heart; women’s intersecting identities of being HIV-positive, pregnant, and in an
301 unstable marriage; and the key roles of stigmatization and social support (or lack thereof) in
302 influencing the development and trajectory of PND.

303 First, given the many contributing factors to women’s PND, it is not surprising that
304 women would experience a large burden. Yet, while the co-occurrence of HIV and depression is
305 often cited in the literature about this population, there is a lack of discussion around what this
306 co-occurrence means for women’s experiences and the burden it creates (4,27–29). This finding
307 reemphasizes that these two epidemics often collide in the lives of women and their intersection
308 deserves global attention through increased screening and treatment (14).

309 Second, the high interconnection of contributors to PND is supported in other qualitative
310 work (13). Women’s HIV diagnosis has been noted as a source of depression in prior literature in
311 sub-Saharan Africa, with women reporting a 3.5-fold higher number of mental health issues,
312 especially depression, after an HIV diagnosis (27,28). We add to this literature by finding this
313 HIV diagnosis to be particularly burdensome when it is not expected and is diagnosed during
314 routine ANC. Research from South Africa found that if women are living with HIV, women’s
315 PND is worse because women are worried about having children to look after while living with
316 HIV (13). The role of a woman’s marriage was quite prominent in our data. Based on our data, it
317 is possible that women living with HIV and experiencing PND may, in particular, lack support
318 from their partner. Another study in Lilongwe, Malawi found that women that had not disclosed
319 their HIV status to their partner had twice the prevalence of PND, which likely indicates a poor
320 relationship with and emotional support from a partner (13,30). Thus, women’s marriage may
321 relate to their depression specifically among HIV-positive women, as HIV women’s HIV status
322 may indicate a lack of ability to have previously negotiated condom use with a partner and a lack
323 of emotional support within marriage (31).

324 Third, women’s stigma related to HIV and PND cut across all of their identities
325 mentioned above (31,32). Most prior work focuses on HIV-related stigma specifically and finds
326 that women reporting greater stigma related to HIV in Malawi are significantly more likely to
327 report depression (32). This indicates that in addition to women having an unexpected HIV
328 diagnosis, HIV may contribute to PND through stigma. A study in South Africa found that the
329 relationship between stigma and HIV among HIV-positive women persists after controlling for
330 marital status and pregnancy intention, indicating that it is a distinctly important component of
331 women’s identities contributing to PND (33). Stigma related to depression plays a role as well.

332 One study in South Africa found that psychological or emotional illnesses, including depression,
333 hold an additional layer of stigma and increase stress and perceived stigma upon disclosure of
334 status (34). Yet, this work was not specific to PND (34). While we found depression-related
335 stigma to be present, we argue that there is unique stigma related to PND, as women were
336 worried about being perceived as a bad mother due to their depression. Additionally, while the
337 literature documents well how stigma affects depression, it is less well understood how
338 ambivalence or a lack of support can be a contributing factor. Multiple women did not mention
339 overt stigma, but indicated that ambivalence and a lack of support also contributed to their PND.

340 Regarding the association between PND and HIV, most literature reports that depression
341 is associated with lower ART adherence, which often serves as the motivation for why PND
342 should be addressed among HIV-positive women. Yet, while the women in our study said that
343 other depressed women may not adhere to ART, most claimed that they did not have issues with
344 adherence themselves. It is possible that the women choosing to participate in our interviews
345 were more likely to be those well engaged in care; it is also possible the women felt some social
346 desirability pressure to report good adherence for themselves, while feeling more free to note
347 that others might have such a difficulty. One explanation, as noted by another study in
348 Lilongwe, Malawi is that because these women are in a population with high engagement in
349 care, PND is not associated with lower ART adherence (35). Another explanation our study
350 found is that during this perinatal period, women may be more motivated to adhere to ART as
351 they want to have a healthy pregnancy and remain healthy for raising their children. It is
352 important to note this motivating factor, as it may be protective in women's ART retention
353 during the perinatal period.

354 *Recommendations*

355 Moving forward, literature suggesting that HIV and depression care should be combined
356 in treatment and that providers should attend to the emotional and psychological needs of women
357 need to be transferred to the perinatal population and expand beyond ART counseling (28,32).
358 Additionally, examples exist that address PND at the community level using pre-existing
359 primary care structures and training lay health workers in counseling (36–38). Given that HIV-
360 infected women often experience a double burden of physical and mental illness that is
361 influenced by social support, stigmatization, and family dynamics, these interventions have the
362 possibility of being expanded and adapted to women living with HIV. Specifically, the
363 Friendship Bench, individual talking therapy based on problem-solving therapy delivered by a
364 lay health worker, has been found to be effective in Zimbabwe among a general population
365 suffering from depression, the majority of whom were living with HIV (37). Importantly, the
366 Friendship Bench and similar interventions draw on pre-existing structures of primary care and
367 ART counseling services and train lay health workers, indicating that they are scalable given the
368 high proportion of women living with HIV that also have PND. Additionally, they focus on
369 counseling and providing social support, which is often a critically missing piece of women’s
370 current experiences.

371 *Limitations*

372 Our findings should be considered in the context of certain limitations. First, while the
373 use of vignettes is an appropriate strategy for discussing sensitive topics, it creates difficulty in
374 disentangling women’s personal experiences from their perceptions of others’ experiences.
375 Second, the data was translated directly into English from an audio-recording in Chichewa,
376 which may result in inconsistencies in translation. However, the translator was an active member
377 of the research team and was available for discussion, which aided immensely in data analysis

378 and interpretation.(39) Third, it is possible that there was social desirability bias in discussing
379 ART adherence. Lastly, we have limited generalizability, as we only spoke with women engaged
380 in ART and with women that were willing to talk about their PND from five clinics in Malawi.
381 However, our five sites do capture a diverse patient population and all women that screened
382 positively for PND agreed to be interviewed.

383 Conclusions

384 By improving our understanding of the social etiology of PND among women living with
385 HIV, we will be better able to construct interventions that are specifically designed for women
386 living with both PND and HIV and that are responsive to the experiences of women.(13) In
387 conclusion, our findings indicate a great need for programs to recognize and address the mental
388 health issues during routine HIV testing and ART treatment and the importance of recognizing
389 women's whole identities and experiences in assessing the burden of PND in this population.

390 Acknowledgments

391 This research was supported by grant R34 MH 116806 and R00 MH 112413 from the National Institute
392 of Mental health (NIMH) and by a developmental grant from the UNC Center for AIDS Research
393 (CFAR), an NIH-funded program (P30 AI 050410). This paper does not reflect the views of the NIMH
394 or NIH.

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