

## Patterns of use of a maternal mental health service in a low-resource antenatal setting in South Africa

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### What is known about this topic

- The prevalence of perinatal depression is particularly high in South Africa.
- There is a treatment gap of 75% in South Africa for common mental disorders.
- Many cultural and attitudinal barriers to mental healthcare have been identified in South Africa.

### What this paper adds

- This is the first study reporting the uptake of a mental health service integrated into antenatal care.
- Younger women are less likely to accept or attend counselling when it is offered to them.
- Referral pathways to other social and legal support services may also be of assistance in antenatal settings.

### Introduction

In a systematic review of perinatal psychological well-being in Africa, Sawyer *et al.* (2010) reported a prevalence of 11% and 19% for antenatal and postnatal depression respectively. Rates in South Africa are even higher. In two peri-urban settlements near Cape Town, 39% of pregnant women screened positive for

### Abstract

The prevalence of perinatal common mental disorders in South Africa is high, yet little is known about mental health service use among pregnant and postnatal women. This paper reports on pregnant women's patterns of use of a counselling service at a primary level obstetric facility in Cape Town, South Africa, between January 2010 and December 2011. It investigates whether these are associated with demographics, severity and risk of depressive symptoms. Participants ( $N = 3311$ ) were screened for psychological distress using the Edinburgh Postnatal Depression Scale (EPDS) at their first antenatal visit. Risk factors for antenatal depression were assessed using a 11-item checklist. Questionnaires were self-administered, but some participants required assistance. Participants scoring positive ( $\geq 13$ ) on the EPDS were offered referral to on-site, individual counselling, and assigned to one of three groups according to their service use: declined referral; accepted referral and attended counselling sessions; and accepted referral but defaulted all appointments. Consent to participate was received by 3437 (96.4%) participants who were offered screening, of which 627 (18.9%) screened positive on the EPDS. Of these, 363 (57.9%) attended counselling. Both bivariate analyses and regression analyses revealed that age and risk factor assessment score were associated with screening positive on the EPDS. Odds ratios (OR) for accepting counselling were OR = 0.94 (95% CI = 0.92–0.97) for gestation, OR = 1.27 (95% CI = 1.15–1.39) for EPDS score and OR = 0.48 (95% CI = 0.23–0.99) for reporting three or more risk factors. OR for attending counselling were, for age: OR = 1.06 (95% CI = 1.00–1.12) and for reporting three or more risk factors: OR = 0.60 (95% CI = 0.37–0.97). While the majority of women with psychological distress accessed the counselling service provided, strategies to increase service use of younger pregnant women specifically are required.

**Keywords:** depression, mental health care, mental health services, service uptake, pregnancy, primary healthcare, use of healthcare

antenatal depression (Hartley *et al.* 2011) and 49% were diagnosed with antenatal depression in a rural setting (Rochat *et al.* 2011). In addition, a 35% prevalence of postnatal depression was reported using the Structured Clinical Interview for DSM-IV (First *et al.* 1994), in an urban population outside Cape Town (Cooper *et al.* 1999). The high prevalence of maternal mental disorders and their adverse health conse-

quences on mothers and their children if left untreated (Lusskin *et al.* 2007, Hanlon *et al.* 2009, Hayes & Sharif 2009, Wachs *et al.* 2009) makes perinatal mental health a global public health issue. It is therefore essential that mental health be available and accessible to pregnant and postnatal women suffering from a mental disorder.

Yet, there is an estimated 75% treatment gap for common mental disorders in South Africa (Seedat *et al.* 2009a). Further, primary level mental health services are scarce, and tend to be fragmented and inadequately resourced across the country (Peterson & Lund 2011), with only 7% of psychologists working in the public sector (Padarath & English 2011). Moreover, issues of stigma and discrimination in low-resource settings are often reasons why people with common mental disorders do not access mental health services, even when these are available (Saxena *et al.* 2007). Other barriers to mental healthcare in low- and middle-income countries (LMICs) reported in the literature include practical barriers (such as work and childcare), lack of awareness, negative attitudes, cultural beliefs and language barriers (Grote *et al.* 2007, Seedat *et al.* 2009a). There is evidence that clinical characteristics among people with mood disorders may affect service use (Wang 2006, Mohr *et al.* 2010). It has been suggested that distressed individuals are more likely to anticipate barriers to care and to perceive stigma as an obstacle (Alvidrez & Azocar 1999). Persons with depression also have decreased motivation to take steps to overcome perceived barriers and engage in counselling (Mohr *et al.* 2010).

A recent South African study reported that the barriers to treatment for individuals with mental health disorders were mostly attitudinal, rather than structural (Bruwer *et al.* 2011). Local studies have shown that individuals do not necessarily perceive depression as a mental health problem, but rather as a consequence of adverse life circumstances, such as poverty or lack of support (Anderson *et al.* 2006, Bruwer *et al.* 2011). There is extensive evidence from LMICs which suggests that adverse psychosocial and socio-demographic factors, such as high exposure to stressful life events or poor social support, are strong risk factors for the development of depression and contribute to the high prevalence of perinatal depression in LMICs in particular (Fisher *et al.* 2012, Roos *et al.* 2013). Thus, these circumstances may contribute to both the need for mental health services and barriers to accessing it.

Considering the dearth of literature on mental health service provision and use at primary care level in South Africa, the aim of this paper was to report the patterns of use of an integrated primary level

counselling service. It also sought to investigate whether severity of depressive symptoms was linked to mental health service use among pregnant women, and whether specific risk factors for antenatal depression could explain some of the patterns of service use. Understanding the profile of women who are less likely to use mental health services may help adapt these services for optimal use. This could also contribute to informing the development of additional perinatal mental health services at the provincial and national levels, which ultimately could contribute to reducing the mental health treatment gap in South Africa.

## Methods

### Setting

Data for this study were collected as part of the Perinatal Mental Health Project's (PMHP) routine monitoring of an integrated, on-site screening and counselling service delivery at a public obstetric facility in Cape Town (Honikman *et al.* 2012). The service employs a stepped-care approach to remove as many barriers to accessing mental healthcare as possible. At women's initial antenatal visit, midwives conduct a screening for psychological distress as part of the history-taking procedures. Women who screen positive are referred to PMHP counsellors, who are trained, non-specialised health workers, located within the antenatal facility. When women show more severe distress and specialist intervention is indicated, women are then offered referral to an on-site psychiatrist who attends the clinic on a sessional basis.

### Sample

Women who were aged 18 years or older, and who screened positive for psychological distress between January 2010 and December 2011 were eligible for inclusion in the study. All women who were screened by the PMHP had provided written informed consent for their screening information to be used for research purposes. Time constraints meant that not all women attending the facility were offered screening, particularly on days of high clinic attendance.

### Instruments

Screening consisted of two questionnaires. The Edinburgh Postnatal Depression Scale (EPDS; Cox *et al.* 1987) was used to screen for psychological distress. It is a 10-item Likert scale questionnaire, which has

been validated in South Africa (De Bruin *et al.* 2004), and can be used in the antenatal period (Cox & Holden 1994). A cutoff score of 13 for psychological distress was chosen, based on a sensitivity of 80% and a specificity of 76.6%, demonstrated for a peri-urban South African environment (Lawrie *et al.* 1998). The EPDS had a good reliability in the present sample ( $\alpha = 0.82$ ).

The Risk Factor Assessment (RFA) assessed the presence of risk factors for psychological distress during pregnancy. The RFA was devised by the PMHP, based on local clinical practice and the common risk factors for perinatal psychological distress and depression reported in the literature (Josefsson *et al.* 2002, Robertson *et al.* 2004, Husain *et al.* 2006, Luskin *et al.* 2007). It consists of a checklist of 11 items, each item assessing the presence or absence of one risk factor, with an answer of yes or no, such as an unwanted pregnancy; difficult life events in the past year; an absent/unsupportive partner; domestic violence; lack of support from family/friends and previous history of mental health problems (Vythilingum *et al.* 2013). As a means to counter response bias, questions are phrased so that answering 'yes' indicates the presence of risk for some items, but the absence of risk for others. The RFA score is the total number of risk factors presented.

Translation and back-translation of the EPDS and RFA were conducted in English, Afrikaans, isiXhosa, the predominant spoken local languages, as well as French to accommodate the high number of franco-phone African women.

### Data collection procedure

Participants were offered screening at their first antenatal visit. Midwives obtained informed consent for participation in the service and for the use of screening data for research purposes. The EPDS and RFA were then privately self-administered and scored by midwives. Where necessary, they also assisted participants who experienced difficulties in reading or completing the questionnaires. Age (in years) and gestation (in weeks) for each participant was recorded at screening, and when possible, gravidity (number of pregnancies) and parity (number of live births) were also recorded.

Participants who were psychologically distressed (scored 13 or above on the EPDS) were offered referral to on-site, trained counsellors. It was explained to participants that the individual counselling sessions offered were free, held at the antenatal clinic, and that sessions could coincide with their next antenatal visits, to minimise additional travelling time and cost.

If a participant did not attend a scheduled counselling appointment (defaulted appointment), the counsellor made up to three attempts to contact the participant by telephone to reschedule her appointment.

Participants were assigned to one of three groups according to their response to the service offered: participants who declined the referral to the counselling service were assigned to the 'declined' group; participants who accepted the referral and attended one or more counselling sessions were assigned to the 'counselled' group; participants who accepted counselling but defaulted all appointments were assigned to the 'defaulted' group. The total number of sessions attended and defaulted for each participant in the counselled group was recorded.

### Data analysis

Data were entered on Epidata and analysed using IBM SPSS 21.0 (IBM Corp 2012). Because variables were non-normally distributed, non-parametric bivariate analyses were carried out to examine group differences in demographic factors, as well as in RFA and EPDS scores. Spearman correlations were carried out to assess associations among these variables, while the Mann-Whitney *U*-test was used to compare two groups, for which effect sizes using Pearson's *r* were reported (Field 2009). The Kruskal-Wallis test was used when comparing three groups, followed by posthoc tests using the Bonferroni correction.

Gravidity and parity were dichotomised: participants were categorised as experiencing their first pregnancy vs. subsequent pregnancies, and as having no children vs. at least one child. Where appropriate, the number of counselling sessions attended and defaulted was also transformed into a categorical variable. The number of risk factors presented was also dichotomised, using a cut-off of three risk factors, to assess the service use of participants considered at low risk (less than three risk factors) compared to those at high risk of depression (three or more risk factors). This cut-off score was chosen because it is also used as a referral criterion of PMHP's routine counselling service. Chi-square analyses were performed across the different study groups for these categorical variables.

Finally, all significant variables in the bivariate analyses were entered into multiple logistic regressions, variables being included at the same time, to assess the impact of the combined predictors in relation to service use. Regression diagnostics for error residuals and multicollinearity were assessed.

### Ethical procedure

The study was approved by the Research Ethics Committee of the University of Cape Town, South Africa (REC Ref. 324/2004).

### Results

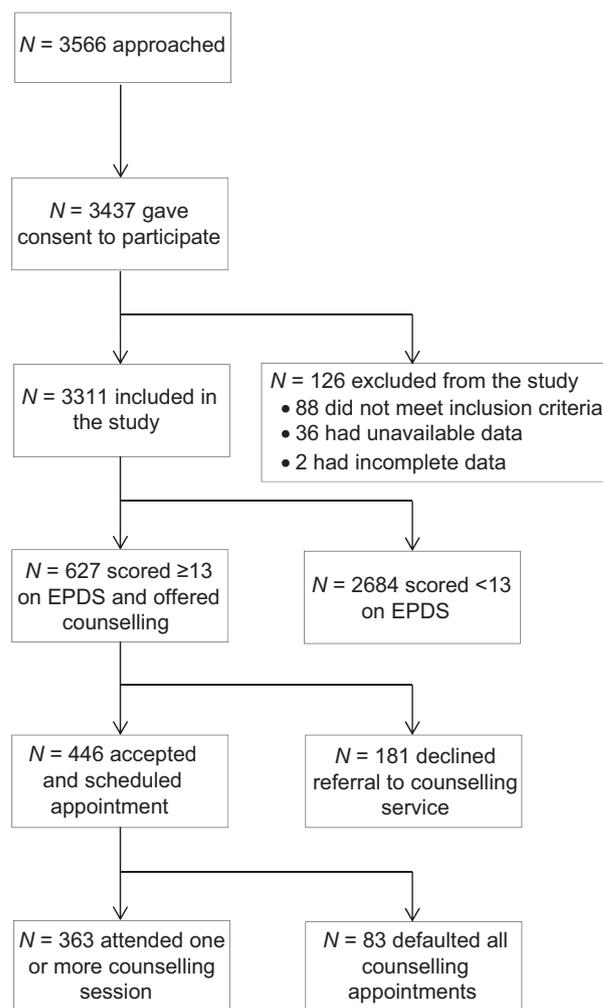
#### Sample characteristics

Of all women who presented at the facility for their first antenatal visit between 2010 and 2011, 86.5% ( $N = 3566$ ) were offered screening, and informed consent was received by 3437 women (96.4%). A total of 126 participants were excluded from the study: 88 did not meet the inclusion criteria; data were substantially incomplete for two participants and unavailable for 36 participants. The final sample consisted of 3311 participants. In total, 627 participants scored 13 or above on the EPDS: 181 participants (28.9%) declined counselling and were assigned to the 'declined' group; 363 participants (57.9%) attended at least one counselling session and were assigned to the 'counselled' group; and 83 participants (13.2%) accepted counselling, but defaulted all counselling appointments, and so were assigned to the 'defaulted' group (see Figure 1).

Table 1 summarises the participants' demographic characteristics, as well as their EPDS and RFA scores. Overall, 10.3% of participants were under 21 years of age ( $N = 340$ ). Most participants were screened in their second trimester ( $N = 1917$ ; 58.3%) and third trimester ( $N = 1101$ ; 33.5%). This was the first pregnancy for nearly half of the participants ( $N = 1444$ ; 43.9%), and 24.2% ( $N = 801$ ) reported having experienced a previous termination of pregnancy or pregnancy loss. There was a strong correlation between EPDS and RFA scores ( $\rho = 0.44$ ,  $P < 0.001$ ). Although coefficients were small, age was also significantly correlated with EPDS scores ( $\rho = -0.09$ ,  $P < 0.001$ ) and RFA scores ( $\rho = 0.07$ ,  $P < 0.001$ ). Gestation was not associated with either age, EPDS or RFA scores.

#### Variables associated with screening positive on the EPDS

Altogether, 627 participants (18.9%) scored positive on the EPDS (see Table 1). There were no associations between screening positive and gravidity, parity or gestation. However, participants who screened positive were significantly younger ( $U = 758,267.5$ ,  $P < 0.001$ ,  $r = -0.07$ ) and had higher RFA scores ( $U = 387,039.5$ ,  $P < 0.001$ ,  $r = -0.38$ ), compared to participants who scored negative on the EPDS.



**Figure 1** Selection and allocation of participants to service use groups.

The multiple logistic regression analysis revealed that RFA score (OR = 1.97, 95% CI = 1.85–2.10) and age (OR = 0.95, 95% CI = 0.93–0.97) remained significant predictors: both variables increased the likelihood of screening positive on the EPDS (see Table 2).

#### Variables associated with accepting referral to counselling

A significant difference in age, gestation, EPDS and RFA scores was found between participants who accepted the referral to counselling and those who declined referral counselling (see Table 3). Those who accepted counselling were older, had a lower gestation, and had higher EPDS and RFA scores compared to those who declined counselling. When the number of risk factors was dichotomised into two groups (RFA category), the odds of accepting counselling

**Table 1** Descriptive statistics of demographic variables, EPDS scores and RFA scores

	All participants			Participants who screened positive			Participants who screened negative		
	N	Median	Range	N	Median	Range	N	Median	Range
Age	3308	26.00	18–50	626	25.00	18–50	2682	26.00	18–47
Gestation	3288	23.00	5–42	624	23.00	5–40	2664	23.00	5–42
EPDS score	3311	8.00	0–30	627	15.00	13–30	2684	7.00	0–12
RFA score	3311	1.00	0–9	627	3.00	0–9	2684	1.00	0–7

EPDS, Edinburgh Postnatal Depression Scale; RFA, Risk Factor Assessment.

**Table 2** Predictors of screening positive on the EDPS (multiple logistic regression model)

Variables included	B (SE)	OR	95% CI
Age	−0.05* (0.01)	0.95	0.93–0.97
RFA score	0.68* (0.03)	1.97	1.85–2.10

EPDS, Edinburgh Postnatal Depression Scale; SE, standard error; OR, odds ratio; CI, confidence interval.

$R^2 = 0.17$  (Homer & Lemeshow), 0.16 (Cox & Snell), 0.25 (Nagelkerke). Model  $\chi^2(2) = 560.07$ ,  $P < 0.001$ .

\* $P < 0.001$ .

were 3.24 times higher (95% CI = 2.24–4.68) for participants who presented three or more risk factors ( $N = 264$ , 82.5%), compared to those who presented two or less risk factors ( $N = 182$ , 59.3%;  $\chi^2(1, 627) = 41.13$ ,  $P < 0.001$ ). No associations were found between accepting counselling and gravidity or parity.

Table 4 displays the results of chi-square analyses, demonstrating that, besides the loss of a previous pregnancy or child, the presence of each risk factor was associated with accepting counselling. Reporting an unwanted pregnancy had the highest OR of 3.38. In addition, the OR of accepting counselling were 2.49, 2.47 and 2.22 times higher for participants who reported a lack of partner, lack of emotional support from family and friends, and a lack of practical support, respectively, compared to participants who did not report these risk factors.

The multiple logistic regression, where all significant variables were entered, revealed different results. Only gestation, EPDS scores and RFA category remained significant (see Table 5). However, higher odds of accepting counselling were associated with lower gestation (OR = 0.94, 95% CI = 0.92–0.97), higher EPDS scores (OR = 1.27, 95% CI = 1.15–1.39) and reporting *less than* three risk factors (OR = 0.48, 95% CI = 0.23–0.99).

### Variables associated with attending counselling

Age was the only significant variable associated with attendance (see Table 6): participants who attended counselling were significantly older than those who defaulted all counselling appointments.

Participants who attended counselling tended to report more risk factors (median = 3.0) compared to those who defaulted counselling (median = 2.0,  $U = 13,223.5$ ,  $P = 0.078$ ,  $r = -0.08$ ), but this difference was marginally non-significant. However, the odds of attending counselling were 1.73 times higher (95% CI = 1.07–2.80) for participants with three or more risk factors ( $N = 224$ , 84.8%), compared to those with two or less risk factors ( $N = 139$ , 76.4%), and this association was significant,  $\chi^2(1, 446) = 5.11$ ,  $P = 0.024$ .

None of the risk factors were individually associated with attendance. The odds of participants attending counselling were 2.21 times higher (95% CI = 0.92–5.33) for those who reported domestic violence ( $N = 53$ , 89.8%), compared to those who did not ( $N = 304$ , 80.0%), however association was marginally non-significant,  $\chi^2(1, 439) = 3.25$ ,  $P = 0.071$ .

When age and RFA category were entered into a multiple logistic regression, both remained significant, though the regression model explained little generalised variance (see Table 7). Though the odds of attending counselling increased with age (OR = 1.06, 95% CI = 1.00–1.12), they decreased when participants reported three or more risk factors (OR = 0.60, 95% CI = 0.37–0.97).

### Differences between participants who declined counselling and those who defaulted counselling

Participants who defaulted counselling had a lower gestation at screening ( $U = 5642$ ,  $P = 0.001$ ,  $r = -0.20$ ), higher EPDS scores ( $U = 5143$ ,  $P < 0.001$ ,  $r = -0.26$ ) and higher RFA scores ( $U = 5577$ ,

**Table 3** Differences in demographics and EPDS and RFA scores between participants who accepted counselling and those who declined counselling

	Declined			Accepted			<i>U</i>	<i>P</i>	<i>r</i> *
	<i>N</i>	Median	Range	<i>N</i>	Median	Range			
Age	181	25.00	18–50	445	25.00	18–39	35,877.5	0.032	–0.09
Gestation	180	26.00	6–40	444	23.00	5–40	32,269.5	<0.001	–0.15
EPDS score	181	14.00	13–23	446	16.00	13–30	25,934.0	<0.001	–0.28
RFA score	181	2.00	0–8	446	3.00	0–9	26,187.0	<0.001	–0.28

EPDS, Edinburgh Postnatal Depression Scale; RFA, risk factor assessment.

\*Effect size, calculated using Pearson's *r*.

**Table 4** Association between the presence of risk factors and accepting counselling

Risk factor (RF)	Declined		Accepted		$\chi^2$	<i>P</i>	OR*	95% CI
	<i>N</i>	<i>N</i> (%) with RF	<i>N</i>	<i>N</i> (%) with RF				
Unplanned/unwanted pregnancy	178	12 (6.7)	443	87 (19.6)	15.76	<0.001	3.38	1.80–6.35
Difficult life event in the past year	181	102 (56.4)	444	299 (67.3)	6.75	0.009	1.60	1.12–2.28
No partner	178	19 (10.7)	428	98 (22.9)	12.06	0.001	2.49	1.47–4.21
No support from partner	180	28 (15.6)	442	121 (27.4)	9.81	0.002	2.05	1.30–3.22
Domestic violence	180	14 (7.8)	439	59 (13.4)	3.93	0.047	1.84	1.00–3.39
Lack of emotional support from family/friends	181	10 (5.5)	443	56 (12.6)	6.88	0.009	2.47	1.23–4.97
Past abuse	181	46 (25.4)	444	170 (38.3)	9.42	0.002	1.82	1.24–2.68
Lack of practical support	181	15 (8.3)	437	73 (16.7)	7.43	0.006	2.22	1.24–3.98
Poor relationship with mother	181	34 (18.8)	445	123 (27.6)	5.37	0.020	1.65	1.08–2.53
Loss of previous pregnancy or child	181	42 (23.2)	445	123 (27.6)	1.30	0.253	1.26	0.85–1.89
History of mental health problems	181	41 (22.7)	442	162 (36.7)	11.46	0.001	1.98	1.33–2.94

CI, confidence interval.

\*OR = odds ratio of accepting counselling when a risk factor is present, compared to when the risk factor is absent.

$P = 0.001$ ,  $r = -0.21$ ), compared to participants who declined counselling. However, the two groups did not differ with respect to age ( $U = 7348.5$ ,  $P = 0.777$ ,  $r = -0.02$ ).

#### Variables associated with number of sessions attended and appointments defaulted in the counselled group

The participants who attended counselling had a median number of two counselling sessions. The number of sessions per participant ranged from 1 to 10 sessions, and 144 (40.7%) participants attended one session only.

The number of sessions attended was categorised into three groups: one session; two sessions; and three or more sessions. Gestation was the only variable that differed between these three groups,  $H(2) = 15.27$ ,  $P < 0.001$ , with a median of 26, 23 and 21 weeks respectively. Further analyses, applying the Bonferroni correction (effects reported at the 0.0167

level of significance), suggest that gestation at screening was significantly lower for those who attended three or more sessions compared to those who only attended one session ( $U = 7255$ ,  $P < 0.001$ ,  $r = -0.23$ ). There were no differences in age, EPDS or RFA scores between these three groups, and no associations with gravidity or parity.

The number of sessions defaulted among participants who attended counselling ranged from 1 to 4, but the majority did not default any sessions ( $N = 229$ ; 65.6%), and 72 participants (20.6%) defaulted one session only. When the number of sessions defaulted was dichotomised into no session defaulted or one or more session defaulted, there were no differences in age, gestation, EPDS scores or RFA scores between these two groups. However, both gravidity,  $\chi^2(1, 348) = 5.17$ ,  $P = 0.023$ , and parity,  $\chi^2(1, 348) = 6.82$ ,  $P = 0.009$ , were associated with the number of sessions defaulted: odds of participants not defaulting appointments were 1.71 (95% CI = 1.07–2.71) times higher for those who were in

**Table 5** Predictors of accepting counselling (multiple logistic regression model)

Variables included	B (SE)	OR	95% CI
Age	-0.03* (0.02)	1.03	0.99–1.08
Gestation	-0.06** (0.01)	0.94	0.92–0.97
EPDS	0.24** (0.05)	1.27	1.16–1.39
RFA score	<0.01 (0.24)	1.00	0.63–1.61
RFA category	-0.74* (0.37)	0.48	0.23–0.99
Unwanted pregnancy	-0.77 (0.44)	0.46	0.20–1.08
Difficult life event in the past year	-0.21 (0.32)	0.82	0.44–1.51
No partner	-0.71 (0.50)	0.49	0.18–1.31
No support from partner	0.57 (0.47)	1.77	0.70–4.46
Domestic violence	0.14 (0.41)	1.15	0.51–2.59
Lack of emotional support from family/friends	-0.63 (0.49)	0.53	0.20–1.40
Past abuse	0.04 (0.32)	1.04	0.56–1.95
Lack of practical support	-0.12 (0.43)	0.88	0.38–2.06
Poor relationship with mother	0.04 (0.34)	1.04	0.54–2.03
History of mental health problems	-0.20 (0.36)	0.82	0.40–1.66

EPDS, Edinburgh Postnatal Depression Scale; RFA, Risk Factor Assessment; SE, standard error; OR, odds ratio; CI, confidence interval.

$R^2 = 0.12$  (Homer & Lemeshow), 0.18 (Cox & Snell), 0.26 (Nagelkerke). Model  $\chi^2(15) = 112.87$ ,  $P < 0.001$ .

\* $P < 0.05$ ; \*\* $P < 0.001$ .

their first pregnancy ( $N = 104$ , 72.7%), compared to those who were not ( $N = 125$ , 61.0%); the odds of not defaulting appointments were 1.81 (95% CI = 1.16–2.83) times higher for those who reported no live births ( $N = 131$ , 72.0%), compared to those who did ( $N = 98$ , 58.7%).

## Discussion

Overall, nearly 19% of the participants screened positive for psychological distress. This is lower than that found by Hartley *et al.* (2011), who reported a 39% rate of pregnant women screening positive on the

EPDS, using a cut-off score of 14, in a neighbouring township.

In this study, nearly 60% of women who were screened with psychological distress accepted the referral to a counselling service. To the authors' knowledge, this is the first study reporting rates of use of an integrated mental health service in a low-resource setting. Considering the large mental health treatment gap in South Africa (Seedat *et al.* 2009a) and the presence of barriers that constrain the use of available mental healthcare resources (Saxena *et al.* 2007), the uptake of the counselling service in this study was relatively satisfactory. This may have been facilitated by the steps taken by the counsellors to contact the women, as outlined earlier, as well as by the availability of pamphlets in the patient waiting room. These outlined the symptoms of depression and anxiety, addressed stigma and provided information about the PMHP service. This strategy was possible due to the relatively high literacy rate of 81.7% in the Western Cape, and of 85.2% in Cape Town specifically (Statistics South Africa 2007).

The results of this study showed that pregnant women with more severe psychological distress were more likely to accept referral to counselling. This corroborates results from another study which reported that women of low socioeconomic status who reported more severe symptoms of depression displayed a greater 'willingness to participate' than those who were less depressed (van der Waerden *et al.* 2010). However, the severity of psychological distress or depressive symptoms among distressed women in the present study was not associated with attendance. This contradicts previous research suggesting that severe depressive symptoms negatively affect treatment seeking and attendance behaviour (Wang 2006, Mohr *et al.* 2010).

The finding that increased distress was associated with increased number of risk factors supports evidence indicating that depression in LMICs often occurs in conjunction with multiple social problems

**Table 6** Differences in demographics and EPDS and RFA scores between defaulted and counselled groups

	Defaulted			Counselled			U	P	r*
	N	Median	Range	N	Median	Range			
Age	83	24.00	18–38	362	26.00	18–39	12,617.0	0.023	-0.11
Gestation	83	22.00	8–38	361	23.00	5–40	13,994.5	0.349	-0.04
EPDS score	83	15.00	13–29	363	16.00	13–30	13,987.0	0.306	-0.05
RFA score	83	2.00	0–9	363	3.00	0–9	13,223.5	0.078	-0.08

EPDS, Edinburgh Postnatal Depression Scale; RFA, risk factor assessment.

\*Effect size, calculated using Pearson's  $r$ .

**Table 7** Predictors of attending counselling (multiple logistic regression model)

Variables included	B (SE)	OR	95% CI
Age	0.05* (0.03)	1.06	1.00–1.12
RFA category	−0.52* (0.25)	0.60	0.37–0.97

EPDS, Edinburgh Postnatal Depression Scale; RFA, risk factor assessment; SE, standard error; OR, odds ratio; CI, confidence interval.

$F^2 = 0.02$  (Homer & Lemeshow), 0.02 (Cox & Snell), 0.03 (Nagelkerke). Model  $\chi^2(2) = 9.53$ ,  $P < 0.01$ .

\* $P < 0.05$ .

(Seedat *et al.* 2009b), and is often viewed as a consequence of social adversity, rather than as a mental health problem (Sorsdahl & Stein 2010). Yet in the present study, the likelihood of accepting and attending counselling was decreased when reporting a higher number of risk factors. It is possible that women may not have perceived psychosocial intervention as an appropriate strategy to address the practical problems and stressors that they face. This indicates the importance of improving mental health literacy among women to raise their awareness around depression, life stressors and the benefits of psychosocial interventions more specifically.

Considering the high number of risk factors and stressors reported in this study, referral pathways to other social and legal support services may also be of assistance in antenatal settings. Tomlinson *et al.* (2013) advocate for such horizontal interventions into maternal and child health programmes, which could address the multiple risk factors that pregnant women in South Africa face. These referrals may also be a useful opportunity to access care for women for whom stigma and discrimination are barriers to taking up mental health services.

Assessing women's motivations or expectations in relation to counselling could help to determine why women with more risk factors are less likely to attend counselling. Age was the only other factor associated with service use in the multivariate analysis, and may have confounded the association between the high number of risk factors and service use. Indeed, a lower age was consistently associated with a decreased likelihood of accepting and attending the counselling service in the present study, which supports previous evidence (Cantilino *et al.* 2007, Varga & Brookes 2008). Though age was not associated with severity of symptoms for psychological distress, past research suggests that adolescents and younger women from low- economic environments tend to be particularly vulnerable to mental health problems dur-

ing pregnancy and at greater risk for suicide (Fergusson *et al.* 2000, Barnett *et al.* 2008). Considering the 24.4% rate of teenage pregnancy in South Africa (Padarath & English 2011), further research should investigate the patterns of mental health service use of adolescents, and young women, and identify the barriers to care specific to this population.

Of the women who attended counselling, the majority came for two sessions or more, and most of these women did not default any counselling appointments, suggesting that the women found the service satisfactory. Most women who only came for one session tended to be screened in the third trimester of their pregnancy and were less likely to default appointments. This indicates that women may only have attended one session because they gave birth before a subsequent appointment could be scheduled and attended. Similarly, in the counselled group, women with more children were more likely to default several counselling appointments compared to women with no children. These findings reflect important limitations of integrating mental health services in an obstetric facility, in that barriers to accessing antenatal care also become barriers to accessing mental health care.

A more thorough investigation of women's reasons for defaulting counselling appointments, or declining the service altogether, was not conducted, and is a limitation of this study. Logistical barriers, not accounted for in this study, may have explained why, despite the relatively high service uptake and retention in the counselling service, over 40% of pregnant women screened with psychological distress either declined referral to counselling or defaulted all counselling appointments, even when services were integrated into antenatal care.

Further analyses suggested that women who defaulted counselling appointments presented with a different profile to those who declined counselling, and a rather similar one to those who attended counselling. This confirms that there are other variables, not accounted for in this study, which could explain the different responses to the mental health service presented in this study. Perhaps, personality traits, which have been investigated in relation to risk for perinatal depression, may also have an impact on service use (Roos *et al.* 2013). For example, pregnant women who tend to use avoidant strategies to cope may be more likely to decline or default counselling appointments, compared to women with more optimistic or co-operative personalities.

The fact that pregnant women were offered counselling on the basis of a screening test as opposed to a diagnostic assessment may have resulted in a

number of referrals of false-positive cases, which may also have affected declining and defaulting rates. This corroborates the finding that women who presented with less severe depression symptoms were more likely to decline counselling, compared to those who showed more severe distress.

This addresses a concern reported by Kagee *et al.* (2013), who suggest that screening for common mental disorders in low-resource settings may lead to over-diagnosis and that allocation of resources and personnel to provide adequate treatment needs to be carefully considered. Similar to previous studies (Marcus *et al.* 2003, Gilbody *et al.* 2008, Miller *et al.* 2009), they suggest that screening should perhaps be employed as an initial step, followed by a diagnostic assessment for depression, before engaging in treatment. However, in a low-resource setting, there may not be sufficient personnel with the time or expertise to triage this additional step. Also, the high number of risk factors reported in this sample is characteristic of LMICs. This, together with the evidence that a high proportion of women who are distressed during pregnancy develop postnatal depression (Fisher *et al.* 2012), means that it is important for screening and counselling services to reach women who present milder symptoms of depression during pregnancy, or who are at risk of developing depression, to prevent more severe symptoms from developing at a later stage. For this reason, the combination of screening for depressive symptoms and risk factors, similar to the service described in the present paper, may be more cost-effective and efficient in low-resource settings. However, it is not clear from the present study, what the needs of the women reporting more severe symptoms or a higher number of risk factors are. More research is necessary to understand whether women's lack of engagement in mental health services reflects the inadequacy of the service, or whether it reflects women's limited understanding of the benefit that psychosocial interventions can have on their experience of chronic stressors and their mental health.

## Conclusion

The paper suggests that a majority of women are willing and do attend counselling services when these are integrated with an antenatal care setting. This is supported by the fact that, providing they were screened early enough in their pregnancy, the majority of women who accepted counselling attended multiple counselling sessions. Further qualitative research is needed to investigate women's view of the counselling service, as well as women's reasons for declining or defaulting counselling appointments.

The mental health needs of women with a high number of high risk factors must also be determined so as to be able to develop appropriate and acceptable care.

Considering that antenatal depression is a strong risk factor for postnatal depression, it is important to improve mental health literacy among women and their families, and specifically raise awareness about the psychological support that counselling can provide to women suffering from mild depression or psychological distress during pregnancy. Targeting this population, in addition to those with more severe symptoms, would provide the opportunity to direct women to appropriate care or support, enhance maternal functioning and may prevent adverse infant cognitive, emotional and behavioural outcomes.

The finding that younger pregnant women are more likely to decline and attend counselling is noteworthy. Further research is needed to identify the needs and motivation of that specific population in engaging in mental health services. It may thus be possible to develop targeted strategies to increase service uptake in this high-risk population.

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## Conflict of interest

The authors declare that they have no conflict of interest.

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