



DISPOSITIONAL MINDFULNESS AND ITS ASSOCIATION WITH ANTENATAL DEPRESSION AND ANXIETY AMONG PREGNANT WOMEN IN KHARIAN, PAKISTAN

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Abstract

Background and Objective: Antenatal depression and anxiety are common in low- and middle-income countries yet remain under-recognised in routine obstetric care. Dispositional (trait) mindfulness has been proposed as a protective psychological resource, but it has not been examined in pregnant women in this part of Pakistan. This study determined the prevalence of antenatal depression and anxiety and their association with dispositional mindfulness.

Methodology: A cross-sectional study was conducted on 397 pregnant women attending primary, secondary, and tertiary care facilities in Kharian, Punjab, Pakistan. Depression and anxiety were measured with the Hospital Anxiety and Depression Scale (HADS; a subscale score ≥ 11 defined a case) and dispositional mindfulness with the Mindful Attention Awareness Scale (MAAS). Data were analysed in SPSS using descriptive statistics, the chi-square test, independent-samples t-tests, and Pearson correlation, with $p < 0.05$ considered significant.

Results: The prevalence of antenatal anxiety was 22.7% (90/397) and of depression 20.4% (81/397). Mean MAAS score was 4.42 ± 0.77 . Women who screened positive for anxiety had significantly lower mindfulness than those who did not (3.90 ± 0.82 vs 4.58 ± 0.69 ; $t = -7.16$, $p < 0.001$), as did women positive for depression (3.90 ± 0.78 vs 4.56 ± 0.71 ; $t = -6.90$, $p < 0.001$). MAAS scores correlated inversely with HADS-anxiety ($r = -0.49$, $p < 0.001$) and HADS-depression scores ($r = -0.42$, $p < 0.001$). Sociodemographic and haematological variables showed no significant association with either outcome.

Conclusion: Approximately one in five pregnant women in Kharian screened positive for anxiety or depression, and lower dispositional mindfulness was strongly associated with both. Mindfulness-based approaches warrant evaluation as part of antenatal mental-health care in this setting.

Key Words: Antenatal depression; Antenatal anxiety; Dispositional mindfulness; Pregnancy; HADS; Pakistan.

Introduction

Depression and anxiety are the commonest mental-health disorders complicating pregnancy. A recent meta-analysis and meta-regression of pregnant women reported that depressive and anxiety symptoms are present across all three trimesters and tend to rise as pregnancy advances [1]. The burden is consistently heavier in South Asia, where socioeconomic adversity, limited mental-health literacy, and the absence of mental-health services within antenatal care converge to elevate risk [2]. In Pakistan specifically, cross-sectional work in rural communities has shown that more than a quarter of pregnant women report clinically relevant depressive symptoms, driven largely by psychosocial rather than purely demographic factors [3].

Antenatal depression and anxiety are not confined to the mother. Prospective cohort data link maternal prenatal depression, anxiety, and stress to poorer infant social-emotional, communication, and motor development, with effects that are independent of postpartum mood [4]. These intergenerational consequences make the early identification of at-risk women, and the search for modifiable protective factors, a public-health priority.

One such modifiable factor is dispositional mindfulness — the trait-like tendency to attend to present-moment experience with open, non-judgemental awareness. In pregnant women, higher dispositional mindfulness has been associated with fewer depressive and anxiety symptoms [5], and mindfulness-based interventions reduce antenatal depressive symptoms in randomised trials and meta-analyses [6,7]. Despite this, the relationship between dispositional mindfulness and antenatal mood has not been characterised in pregnant women in Kharian, Pakistan, where the cultural and socioeconomic context differs markedly from the high-income settings in which most mindfulness research has been conducted.

The present study therefore aimed to determine the prevalence of antenatal depression and anxiety and to examine their association with dispositional mindfulness among pregnant women in Kharian, Pakistan.

Methodology

A cross-sectional study was conducted on 397 pregnant women attending primary, secondary, and tertiary level health-care facilities in the city of Kharian, district Gujrat, Punjab, Pakistan. The required sample size, estimated using the RAOSOFT online calculator, was approximately 400. A convenient sampling technique was used. Pregnant women of any gestational age who consented were included; those with a previously diagnosed psychiatric illness on treatment, or who declined participation, were excluded. The study was approved by the institutional ethical review committee, and written informed consent was obtained from every participant.

Depression and anxiety were assessed with the Hospital Anxiety and Depression Scale (HADS), which yields separate seven-item anxiety and depression subscales scored 0–21; the conventional bands of 0–7 (normal), 8–10 (borderline), and 11–21 (case) were applied, and a subscale score ≥ 11 was taken to indicate a probable case. The HADS has demonstrated acceptable structure and validity in pregnant populations [9,10]. Dispositional mindfulness was measured with the 15-item Mindful Attention Awareness Scale (MAAS), on which higher mean scores indicate greater trait mindfulness [11]. Sociodemographic and obstetric data (age, education, area of residence, gravidity, parity, trimester, body-mass index) and a complete blood count (including haemoglobin) were also recorded. Data were analysed using SPSS. Frequencies and percentages were calculated for categorical variables, and means with standard deviations for continuous variables. The association of caseness with categorical variables was tested with the chi-square test. Mean MAAS scores were compared between cases and non-cases using the independent-samples t-test, and the linear relationship between MAAS and HADS scores was examined with the Pearson correlation coefficient. A p-value < 0.05 was considered statistically significant.

Results

The mean age of the 397 participants was 28.3 ± 4.8 years. Most were in the third trimester (57.9%) and were multigravida (82.6%); 59.4% lived in rural areas. Educational attainment ranged from illiterate (9.8%) to postgraduate (8.1%). By body-mass index, 35.8% were of normal weight, 35.3% overweight, and 23.7% obese, and 51.1% were anaemic (haemoglobin <11 g/dL). Sample characteristics are shown in Table I.

The prevalence of antenatal anxiety (HADS-anxiety ≥ 11) was 22.7% (90/397) and of antenatal depression (HADS-depression ≥ 11) was 20.4% (81/397). The mean HADS-anxiety score was 7.3 ± 4.3 and the mean HADS-depression score was 7.4 ± 4.0 .

The overall mean MAAS score was 4.42 ± 0.77 . Dispositional mindfulness was significantly lower in women who screened positive for anxiety than in those who did not (3.90 ± 0.82 vs 4.58 ± 0.69 ; $t = -7.16$, $p < 0.001$) and, likewise, lower in women positive for depression (3.90 ± 0.78 vs 4.56 ± 0.71 ; $t = -6.90$, $p < 0.001$) (Table II). Consistent with this, MAAS scores were inversely correlated with both HADS-anxiety scores ($r = -0.49$, $p < 0.001$) and HADS-depression scores ($r = -0.42$, $p < 0.001$), indicating that higher trait mindfulness was associated with fewer symptoms of both conditions.

In contrast, none of the sociodemographic variables (age group, education, area of residence, parity) or haematological categories (anaemia severity, body-mass index) was significantly associated with either anxiety or depression caseness (all $p > 0.05$).

Table I. Sociodemographic and clinical characteristics of participants (N = 397)

Characteristic	n (%)
Age 19–29 / 30–39 / 40–49 years	251 (63.2) / 135 (34.0) / 11 (2.8)
Residence: urban / rural	161 (40.6) / 236 (59.4)
Education: illiterate / under-matric / matric / intermediate / bachelors / postgraduate	39 (9.8) / 108 (27.2) / 110 (27.7) / 59 (14.9) / 49 (12.3) / 32 (8.1)
Gravidity: primigravida / multigravida	69 (17.4) / 328 (82.6)
Parity: nulliparous / primiparous / multiparous / grand-multiparous	98 (24.7) / 120 (30.2) / 167 (42.1) / 12 (3.0)
Trimester: first / second / third	62 (15.6) / 105 (26.4) / 230 (57.9)
BMI: underweight / normal / overweight / obese	21 (5.3) / 142 (35.8) / 140 (35.3) / 94 (23.7)
Anaemia: none / mild / moderate / severe	194 (48.9) / 182 (45.8) / 19 (4.8) / 2 (0.5)

Table II. Dispositional mindfulness (MAAS) by antenatal anxiety and depression status

Outcome	Cases: MAAS (mean $\pm$ SD)	Non-cases: MAAS (mean $\pm$ SD)	t	p
Anxiety (≥ 11)	3.90 $\pm$ 0.82 (n=90)	4.58 $\pm$ 0.69 (n=307)	-7.16	<0.001
Depression (≥ 11)	3.90 $\pm$ 0.78 (n=81)	4.56 $\pm$ 0.71 (n=316)	-6.90	<0.001

Discussion

In this sample of pregnant women from Kharian, antenatal anxiety and depression were common, affecting 22.7% and 20.4% of women respectively. These figures sit within the range reported for South Asian populations and for Pakistan, where antenatal depressive symptoms have been documented in a quarter or more of pregnant women and where the social patterning of antenatal distress is well described [1,2,3]. The consistency of our prevalence estimates with this literature supports the validity of HADS-based screening in this setting. The central finding was that lower dispositional mindfulness was strongly associated with both antenatal anxiety and depression. Women screening positive for either condition scored roughly two-thirds of a scale point lower on the MAAS than those screening negative, and trait mindfulness correlated inversely with symptom severity for both outcomes. This is concordant with work in pregnant women elsewhere, in which higher dispositional mindfulness has been linked to fewer depressive and anxiety symptoms [5], and it provides a plausible mechanism for the benefits seen with mindfulness-based interventions, which reduce antenatal depression in randomised trials and meta-analyses, with particularly large effects reported in low- and middle-income settings [6,7,8]. Because dispositional mindfulness is modifiable, these findings suggest a practical avenue for prevention and early intervention in a context where pharmacological and specialist psychological services are scarce.

The clinical relevance of identifying at-risk women is underscored by evidence that maternal prenatal depression and anxiety are associated with poorer infant neurodevelopment independent of postpartum mood [4]. Routine antenatal screening for mood symptoms, coupled with low-cost mindfulness-based strategies, may therefore have benefits that extend beyond the mother to the child. Notably, the sociodemographic and haematological factors examined were not significantly associated with antenatal anxiety or depression in this sample. This argues against simple demographic or anaemia-based risk stratification in this population and points instead to psychological resources such as mindfulness as more informative correlates of antenatal mood.

This study has limitations. Its cross-sectional design precludes causal inference; while lower mindfulness was associated with more symptoms, the direction of the relationship cannot be established. Participants were recruited by convenient sampling from a single city, which may limit generalisability, and both the HADS and MAAS are self-report screening instruments rather than diagnostic tools. Residual confounding cannot be excluded.

Conclusion

Antenatal anxiety and depression affected approximately one in five pregnant women in Kharian, Pakistan, and lower dispositional mindfulness was strongly and consistently associated with both. Incorporating mindfulness assessment and mindfulness-based interventions into antenatal care merits evaluation as a feasible strategy for improving maternal mental health in this setting.

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