COPING AND DEPRESSION IN PREGNANCY: A STUDY AMONG PREGNANT WOMEN IN UNIVERSITY MEDICAL CENTER HO CHI MINH CITY

Nguyen Phuong Dung[1], Phan Quoc Dung[2], Nguyen Dinh Bach[3], Nguyen Ngoc Hong Phuc[4], Truong Ke Quan[5*]

ABSTRACT

Aim: To determine the association between depression and coping strategies among pregnant women in the obstetrics ward at the University Medical Center Ho Chi Minh City. ***Methods:*** A cross-sectional study of 278 pregnant women (March–May 2023) used face-to-face interviews with a structured questionnaire based on the Edinburgh Postnatal Depression Scale and the Vietnamese version Brief COPE scale. Antenatal Depression was defined as EPDS ≥10. Poisson regression analyzed associations between coping strategies and depression after adjusting for sociodemographic and obstetric factors, with prevalence ratios (PR) and 95% confidence intervals (CI); $p < 0.05$ was significant. ***Results:*** The prevalence of antenatal depression was 17.3%. After adjusting for sociodemographic and obstetric confounders, emotional support was negatively associated with depression (aPR=0.58, 95% CI: 0.42-0.81, p=0.001), while self-blame showed the strongest positive association (aPR=2.19, 95% CI: 1.48-3.24, p<0.001), followed by denial (aPR=1.80, p=0.01), behavioral disengagement (aPR=1.53, p=0.01), and venting (aPR=1.50, p=0.03). ***Conclusion:*** The prevalence of depressive symptoms in pregnant women in University Medical Center Ho Chi Minh City was 17.3%. Coping strategies are strongly linked to antenatal depression; promoting positive coping, especially emotional support, may help reduce depressive symptoms in pregnant women.

Keywords: *Antenatal depression; Coping strategies; Pregnancy; EPDS; Brief COPE; Vietnam*

I. INTRODUCTION

Pregnancy is a significant life event characterized by profound physical, emotional, and social changes. Although it is often regarded as a joyful and fulfilling period, it can also be a time of increased psychological vulnerability. Research has shown that between 15% and 65% of pregnant women worldwide experience symptoms of depression during pregnancy, known as antenatal depression(1). This condition has become one of the most common complications of pregnancy, with consequences that extend beyond the mother to her child and family. In severe cases, antenatal depression may even lead to suicidal thoughts or behavior(2). From a public health perspective, these consequences contribute to increased healthcare utilization and social burden. Understanding its associated psychological and behavioral factors, particularly coping strategies, is crucial for designing effective preventive and therapeutic interventions.

Coping refers to the cognitive and behavioral efforts individuals use to manage internal and external demands perceived as

[1] *School of Medicine, Western Sydney University, Australia*
[2] *Binh Dong area Medical Center, Ho Chi Minh City*
[3] *Hanoi University of Business and Technology, Hanoi, Vietnam*
[4] *University of Medicine and Pharmacy at Ho Chi Minh City, Vietnam*
[5] *Ho Chi Minh City Center for Disease Control (HCDC), Vietnam*
Responsible person: Truong Ke Quan
Email: truongkequan2@gmail.com
Date of receipt: 18/08/2025
Date of scientific judgment: 22/08/2025
Reviewed date: 22/09/2025

stressful or exceeding their resources(3). The way pregnant women cope with stressors and risk factors during pregnancy is an important determinant of their mental health. Ineffective or maladaptive coping strategies not only fail to resolve stressful situations but can also exacerbate psychological distress, negative pregnancy outcomes and potentially leading to mental health disorders such as stress, anxiety, burnout, or depression(3,4). Conversely, women who adopt adaptive coping strategies such as seeking social support, problem-solving, or positive reframing, are more likely to maintain emotional stability and experience lower levels of depressive symptoms(3,4). Therefore, the assessment of coping patterns among pregnant women provides valuable insight into the prediction and prevention of antenatal depression.

Vietnam has undergone rapid economic growth and social transformation in recent decades, resulting in changes in family dynamics, gender roles, and urban lifestyles. These shifts have introduced new stressors for women of reproductive age, particularly those living in large cities. Pregnant women in Ho Chi Minh City may experience financial pressure, work-related stress, and limited social support, while also facing traditional expectations surrounding motherhood. Although a few Vietnamese studies have examined antenatal depression, most have focused on demographic or obstetric factors, no study has examined coping strategies among pregnant women in Vietnam or explored how coping relates to depression during pregnancy (5–7). Identifying coping strategies and their relationship to depression is essential for developing appropriate screening and support programs.

Therefore, this study aims to assess the prevalence of antenatal depression and examine its association with coping strategies among pregnant women in University Medical Center Ho Chi Minh City. Understanding how women experience and cope with depression during pregnancy will provide valuable insights for the design of culturally sensitive interventions and policies that promote maternal mental health and well-being.

II. METHODS

Study design and setting

The cross-sectional study was conducted in the obstetrics ward at University Medical Center Ho Chi Minh City (UMC) for antenatal care from March 2023 to May 2023. The target population consisted of pregnant women who attended obstetrics check-ups at UMC during the research period. Participants must meet the following criteria including: 1) Being at least 18 years old; 2) Visiting the selected hospital for regular health checkups during a study period; 3) Agreeing to enroll in the study; 4) Being able to answer questions. Exclusion criteria included: 1) pregnant women unable to communicate due to inability to hear, read, write, or speak; and 2) pregnant women who were too unwell to participate in the interview.

Sample size and sampling procedure

The sample size was calculated using a single population proportion formula considering a 15.8% prevalence of depressive symptoms in pregnant women(8). With an allowable error of 0.1,

p = 0.05, and α = 0.05, the minimum required sample was 205. Ultimately, 278 pregnant women completed paper questionnaires after giving informed consent, and their responses were analyzed.

$$n = \frac{z^2_{1-\alpha/2}}{d^2} p (1- p)$$

Convenience sampling was applied to recruit eligible participants. During the three-month study period, the investigator visited

the registration area of the UMC obstetrics ward each morning. Pregnant women meeting all inclusion criteria were invited to participate. Medical identification numbers were used to prevent duplicate enrollment. The sampling was stopped until the end of the study period.

Instruments

Data were collected using a brief sociodemographic and obstetric questionnaire, along with two standardized scales: the Vietnamese version of the Edinburgh Postnatal Depression Scale (EPDS) and the Vietnamese version of Brief COPE scale. The sociodemographic and obstetric questionnaire gathered basic information, including: age, religion, marital status, income, education level, gestational age, history of obstetric, unplanned pregnancy and stressful life event.

The EPDS is a 10-item self-report scale widely used to assess depressive symptoms during pregnancy. Each item is scored from 0 to 3, with higher scores indicating greater symptom severity. A cutoff score of 10 or above was applied to identify participants screening positive for antenatal depression.

The Brief COPE scale was used to assess coping strategies. It consists of 28 items grouped into 14 subscales: emotional support, positive reframing, use of informational support, acceptance, planning, self-distraction, active coping, venting, religion, humor, behavioral disengagement, self-blame, denial, and substance use. Each item is rated on a four-point Likert scale, with higher scores indicating more frequent use of the corresponding coping strategy. The scale has been validated in diverse populations, including pregnant women, and demonstrates good reliability and validity(9).

Data collection

A convenient sample of pregnant women was recruited in the obstetrics ward at UMC. Data were collected through face-to-face interviews conducted by trained researchers. Each interview lasted approximately 20–25 minutes and guided by structured questions aligned with the study objectives. All researchers received training in interviewing techniques, empathy, and quality control to enhance data reliability. After the participants finished their surveys, researchers would review the responses to check for completeness, after which the data were coded, converted into numerical form, and entered for management and analysis. All data were securely stored and treated as strictly confidential.

Statistical Analysis

The data were managed and analyzed by using Epidata 4.6 and STATA 17 software. Descriptive analysis was performed by the frequency and proportions of qualitative variables. Means and standard errors were used to describe quantitative variables. The dependent variable was antenatal depression, while the independent variables were coping strategies. Poisson regression with robust standard errors was employed to assess the association between each coping strategy and antenatal depression. Both crude and adjusted models were constructed. The adjusted models controlled for potential confounders including sociodemographic characteristics and obstetric. Prevalence ratios (PR) with 95% confidence intervals (CI) were reported to quantify the associations. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

Ethical approval was obtained from the Medical Ethics Committee, University of Medicine and Pharmacy at Ho Chi Minh City (No. 168/HDDD-DHYD, 14/02/2023).

III. RESULTS

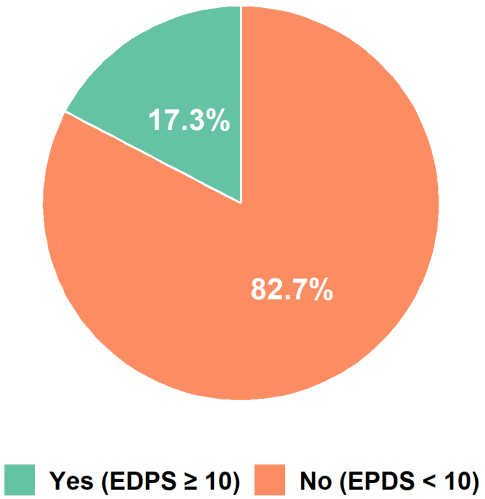

Fig 1: *Prevalence of antenatal depression among pregnant women*

Table 1: *Sociodemographic characteristics of the participants (n = 278)*

Characteristics	Means ± SD or n(%) (N = 278)	Antenatal Depression	
		Yes (EPDS ≥ 10)	No (EPDS < 10)
		n(%)	n(%)
Age	30.0 ± 4.0		
Age group			
18 – 24	19 (6.8)	5 (26.3)	14 (73.7)
25 – 29	114 (41.0)	21 (18.6)	93 (81.4)
30 – 34	107 (38.5)	17 (15.9)	90 (84.1)
≥ 35	38 (13.7)	5 (13.2)	33 (86.8)
Religion			
Yes	68 (24.5)	13 (19.1)	55 (80.9)
No	210 (75.5)	35 (16.7)	175(83.3)
Education level			
≤ High school	40 (14.4)	5 (12.5)	35 (87.5)
> High school	238 (85.6)	43 (18.1)	195 (81.9)
Marital status			
Married	259 (93.2)	45 (17.4)	214 (82.6)
Single/ cohabitating	19 (6.8)	3 (15.8)	16 (84.2)
Income			
Medium and high	274 (98.6)	47(17.1)	227(82.9)
Low	4 (1.4)	1(25)	3(75)
Currently working			
Yes	182 (65.5)	32 (17.6)	150 (82.4)
No	96 (34.5)	16 (16.7)	80 (83.3)

Table 2: *Obstetric history and current pregnancy characteristics of the participants (n = 278)*

Characteristics	n(%) (N = 278)	Antenatal Depression	
		Yes (EPDS ≥ 10)	No (EPDS < 10)
		n(%)	n(%)
Gestational age			
First trimester	43 (15.5)	7 (16.3)	36 (83.7)
Second trimester	119 (42.8)	23 (19.3)	96 (80.7)
Third trimester	116 (41.7)	18 (15.5)	98 (84.5)
Number of living children			
≥ 1 child	103 (37.5)	17(16.5)	86(83.5)
No children	175 (62.5)	31(17.7)	144 (82.3)
History of preterm birth			
No	269 (96.8)	47 (17.5)	222 (82.5)
Yes	9 (3.2)	1 (11.1)	8 (88.9)
History of low birth weight			
No	272 (97.8)	48 (17.6)	224 (82.4)
Yes	6 (2.2)	0	6 (100.0)
History of infant with health problems			
No	278 (100)	48(17.3)	230(82.7)
Yes	0 (0)	0	0
History of miscarriage			
No	234 (84.2)	38 (16.2)	196 (83.8)
Yes	44 (15.8)	10 (22.7)	34 (77.3)
History of abortion			
No	265 (95.3)	44(16.6)	221 (83.4)
Yes	13 (4.7)	4 (30.8)	9 (69.2)
History of stillbirth			
No	260 (93.5)	46 (17.9)	214 (82.1)
Yes	18 (6.5)	2 (11.1)	16 (88.9)
Unplanned pregnancy			
No	204 (73.4)	28 (13.7)	176 (86.3)
Yes	74 (26.6)	20 (27.0)	54 (73.0)
Stressful life events during pregnancy			
No	213 (76.4)	21 (9.9)	192 (90.1)
Yes	65 (23.6)	27(41.5)	38 (58.5)

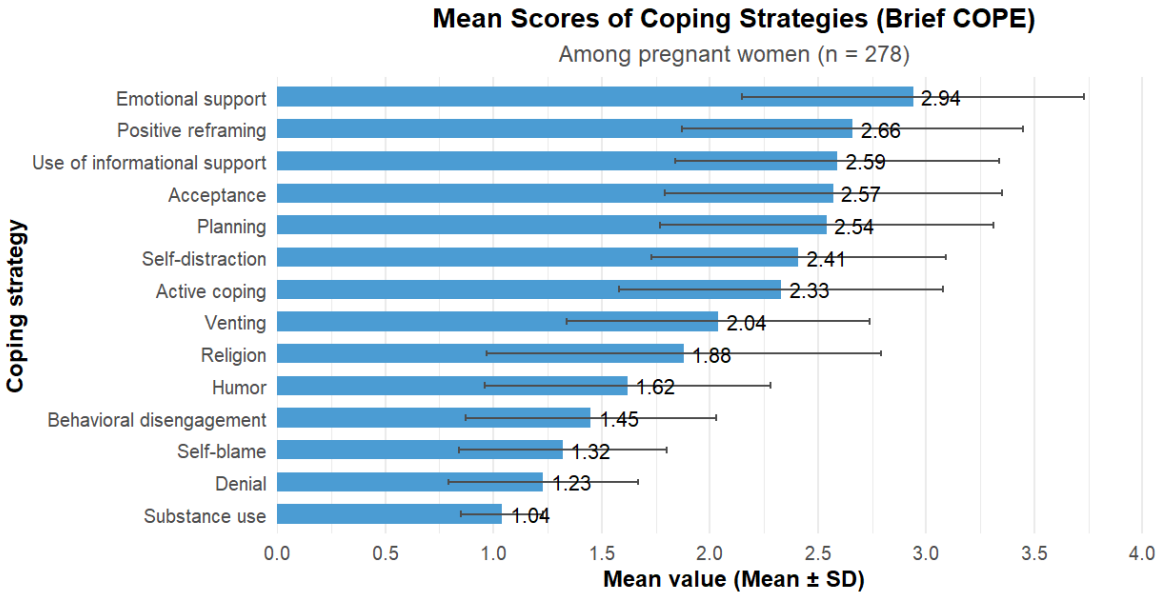

Fig 2: ***Mean scores of coping strategies among pregnant women (n=278)***

Figure 2 presents the mean scores of coping strategies among pregnant women. Participants predominantly employed approach-oriented coping strategies, with emotional support being the most frequently used (M=2.94, SD=0.79), followed by positive reframing (M=2.66, SD=0.79) and informational support (M=2.59, SD=0.75). In contrast, avoidance coping strategies were less commonly utilized, with substance use having the lowest mean score (M=1.04, SD=0.19), followed by denial (M=1.23, SD=0.44) and self-blame (M=1.32, SD=0.48). Overall, pregnant women preferred adaptive, approach-oriented coping over maladaptive avoidance strategies.

Table 3: ***Association between depression and coping strategies (n=278)***

Subscale	aPR	CI 95%	P-value
Self-distraction	1.25	0.87 – 1.81	0.2344
Active coping	1.21	0.89 – 1.64	0.2184
Denial	1.80	1.15 – 2.82	0.0108 *
Substance use	0.28	0.02 – 3.50	0.3221
Emotional support	0.58	0.42 – 0.81	0.0014 **
Use of informational support	1.12	0.84 – 1.51	0.4339
Behavioral disengagement	1.53	1.11 – 2.12	0.0101 *
Venting	1.50	1.04 – 2.15	0.0294 *
Positive reframing	0.98	0.72 – 1.32	0.8828
Planning	0.79	0.59 – 1.06	0.1131
Humor	0.86	0.58 – 1.29	0.4726
Acceptance	0.84	0.62 – 1.13	0.2438
Religion	1.32	1.04 – 1.67	0.0224 *
Self-blame	2.19	1.48 – 3.24	0.0001 ***

Note: aPR = adjusted Prevalence Ratio; CI = Confidence Interval. Model adjusted for sociodemographic and obstetric characteristics. * p<0.05, ** p<0.01, *** p<0.001

Significant associations were found between depression and *denial, emotional support, behavioral disengagement, venting, religion and self-blame* ($p < 0.05$). Notably, depressed women were less likely to seek *emotional support* compared to non-depressed women. In contrast, *denial* (aPR = 1.80; 95% CI: 1.15 – 2.82), *behavioral disengagement* (aPR = 1.53; 95% CI: 1.11 – 2.12), *venting* (aPR = 1.50; 95% CI: 1.04 – 2.15), and *religion* (aPR = 1.32; 95% CI: 1.04 – 1.67) were positively associated with depression. *Self-blame* showed the strongest association (aPR = 2.19; 95% CI: 1.48 – 3.24), indicating that women who used *self-blame* strategy had 2.19 times the prevalence of depression compared to those who did not use this strategy. No significant associations were observed with *self-distraction, active coping, substance use, informational support, positive reframing, planning, humor, or acceptance* ($p > 0.05$).

IV. DISCUSSION

This study aimed to examine the prevalence of antenatal depression and its association with coping strategies among 278 pregnant women in UMC. The prevalence of depressive symptoms (EPDS ≥ 10) was 17.3%. After controlling for sociodemographic and obstetric confounders, our findings revealed that specific coping strategies were significantly associated with depression. Avoidance strategies such as *self-blame, denial, venting* and *behavioral disengagement* were positively associated with depression, while approach strategies, particularly *emotional support*, were negatively associated.

The 17.3% prevalence of antenatal depression in our sample is lower than that found in Pham Thi Thu Phuong's study (2020), which reported 24% (5). This difference in results may be attributed to the use of different screening instruments and limitations in sample size. A 2021 study at Nguyen Tri Phuong Hospital, employing a comparable sample size, identified antenatal depression symptoms in 27.1% of pregnant women, notably higher than the present prevalence of 17.3%(10). This discrepancy can potentially be explained by differences in the study population; the Nguyen Tri Phuong Hospital study specifically examined pregnant women in their third trimester, which is one of the two trimesters associated with the highest rates of depression during pregnancy while this study recruited pregnant women from all three gestational periods.

Avoidance coping styles were positively related to antenatal depression among pregnant women. *Self-blame* emerged as the strongest predictor, followed by *behavioral disengagement*, *venting* and *denial*. The findings are consistent with prior study about coping styles among pregnant women that avoidance coping styles during pregnancy are strongly associated with increased depressive symptoms(4). Although avoidance may offer temporary relief by allowing individuals to escape the source of stress, it prevents effective emotional processing and problem-solving, which can exacerbate psychological distress over time(3). In the Vietnamese context, these results may reflect broader cultural factors that influence how women manage emotional distress(11). Traditional gender roles and expectations for women to maintain family harmony may discourage open expression of negative emotions, leading to internalized stress and the use of avoidance strategies such as denial or self-blame. Furthermore, stigma surrounding mental health issues in Vietnam may prevent

pregnant women from seeking psychological support, reinforcing maladaptive coping behaviors(12).

Emotional support was the only coping strategy that related to lower level of antenatal depression, suggesting that strong emotional connections may associated with lower risk of depression during pregnancy. The finding is consistent with previous studies demonstrated that emotional support served as a protective factor, highlight the importance of fostering supportive social networks and encouraging pregnant women to seek and maintain emotional connections during the antenatal period(3,4). Although *religious* coping showed an association with depression, the confidence interval nearly touching the null value, suggesting minimal clinical significance. This differs from literature reporting protective effects, possibly because the Brief COPE does not distinguish positive from negative religious coping, which have opposing mental health effects(13).

Besides the persistent mental health stigma in Vietnam, access to mental health services remains limited, particularly for pregnant women(12). Healthcare providers should routinely screen for depressive symptoms during antenatal visits and provide counseling on appropriate coping strategies. Psychoeducation about the harmful effects of avoidance coping, particularly *self-blame*, *behavioral disengagement*, and *denial*, should be provided, along with guidance on strengthening *emotional support* networks through partner education and peer support groups. Health policy should support integrating culturally adapted mental health services into routine antenatal care.

The study has both strengths and limitations. This is the first study to examine depression prevalence among pregnant women at the University Medical Center Ho Chi Minh City, and the first investigation of coping strategies during pregnancy in Vietnam. However, the cross-sectional design precludes causal inference. The EPDS is a screening tool rather than a diagnostic instrument, indicating probable rather than clinically confirmed depression.

V. CONCLUSION

In conclusion, antenatal depression is a significant concern among pregnant women. They use a variety of coping strategies, ranging from effective to less effective methods. *Emotional support* emerged as the most commonly used and protective strategy, related to lower level of depression. In contrast, avoidance coping strategies, particularly *self-blame, behavioral disengagement, venting, and denial*, were positively associated with depressive symptoms. These findings highlight the importance of screening for both depressive symptoms and coping patterns during antenatal care, though longitudinal research is needed to establish causal relationships.

REFERENCES

1. **Dadi AF, Miller ER, Bisetegn TA, Mwanri L.** Global burden of antenatal depression and its association with adverse birth outcomes: an umbrella review. BMC Public Health. 2020 Feb 4;20(1):173.
2. **Jahan N, Went TR, Sultan W, Sapkota A, Khurshid H, Qureshi IA, et al.** Untreated Depression During Pregnancy and Its Effect on Pregnancy Outcomes: A Systematic Review. Cureus. 13(8):e17251.
3. **Huizink AC, de Medina PGR, Mulder EJH, Visser GHA, Buitelaar JK.** Coping in normal pregnancy. Ann Behav Med Publ Soc Behav Med. 2002;24(2):132–40.

4. **Gourounti K, Anagnostopoulos F, Lykeridou K.** Coping strategies as psychological risk factor for antenatal anxiety, worries, and depression among Greek women. Arch Womens Ment Health. 2013 Oct 1;16(5):353–61.
5. **Phuong PTT, Trang DTM, Truc TT.** DEPRESSION, ANXIETY AND ASSOCIATED FACTORS AMONG PREGNANT WOMEN IN HO CHI MINH CITY. Ho Chi Minh City J Med. 2020;24(1):64–64.
6. **Hue MT, Nguyet Van NH, Nha PP, Vu NT, Duc PM, Van Trang NT, et al.** Factors associated with antenatal depression among pregnant women in Vietnam: A multisite cross-sectional survey. Health Psychol Open. 2020 Mar 18;7(1):2055102920914076.
7. **Van Ngo T, Gammeltoft T, Nguyen HTT, Meyrowitsch DW, Rasch V.** Antenatal depressive symptoms and adverse birth outcomes in Hanoi, Vietnam. PloS One. 2018;13(11):e0206650.
8. **Jairaj C, Fitzsimons CM, McAuliffe FM, O'Leary N, Joyce N, McCarthy A, et al.** A population survey of prevalence rates of antenatal depression in the Irish obstetric services using the Edinburgh Postnatal Depression Scale (EPDS). Arch Womens Ment Health. 2019 Jun;22(3):349–55.
9. **Van Gils Y, Bleijenbergh R, Brosens C, Van den Branden L, Rimaux S, Kuipers YJ.** The validation of the brief COPE in a belgian perinatal population. Matern Child Health J. 2022 Oct;26(10):2050–9.
10. **Tran TTP, To MXH.** PRENATAL DEPRESSION PREVALENCE AND RISK FACTORS OF PREGNANT WOMEN AT THE THIRD TRIMESTER IN NGUYEN TRI PHUONGHOSPITAL. Vietnam Med J [Internet]. 2021 Aug 21 [cited 2025 Oct 25];504(2). Available from: https://tapchiyhocvietnam.vn/index.php/vmj/article/view/943
11. **Nguyen H, Mcintyre J, Corcoran-Nantes Y.** Gender Roles in Vietnam: A Metalogue on the Traditional and the New and Suggestions for Transformation. In 2022. p. 177–95.
12. **Thi LM, Manzano A, Ha BTT, Vui LT, Quynh-Chi NT, Duong DTT, et al.** Mental health stigma and health-seeking behaviors amongst pregnant women in Vietnam: a mixed-method realist study. Int J Equity Health. 2024 Aug 16;23(1):163.
13. **Ano GG, Vasconcelles EB.** Religious coping and psychological adjustment to stress: a meta-analysis. J Clin Psychol. 2005 Apr;61(4):461–80.