

ORIGINAL PAPER

ANXIETY AND COPING STRATEGIES AMONG WOMEN WITH HYPEREMESIS GRAVIDARUM IN MALAYSIA

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Abstract

Aim: Anxiety is prevalent among women with Hyperemesis Gravidarum (HG), which is associated with coping strategies and bio-psychosocial risk factors. This study aims to predict socioeconomic status (SES) and obstetric factors towards anxiety and stress-coping strategy, and to explore the significant differences in levels of anxiety on each coping strategy. **Design:** It was a cross-sectional survey in the Malaysian context. **Methods:** Forty women medically diagnosed with HG were recruited and completed Generalized Anxiety Disorder-7 (GAD-7) to assess generalized anxiety disorder and coping scale inventory using the Brief COPE questionnaire. **Results:** The employment status of pregnant women diagnosed with HG significantly predicted their anxiety. Household income and education level predicted emotion-focused coping strategies. None of the obstetric factors predicted the coping strategy. A significant difference was found across anxiety levels in problem-focused and dysfunctional coping strategies. The post-hoc test reveals that dysfunctional coping has the highest mean score in the severe anxiety category. **Conclusion:** It is essential to promote awareness about effective coping strategies for pregnant women who are diagnosed with HG. Greater efforts are needed to increase the duty of care among healthcare providers to propagate holistic and resourceful coping management with the HG that could help potential patients in the future.

Keywords: anxiety, coping, hyperemesis gravidarum, pregnancy, women.

Introduction

Pregnant women are usually excited about their impending motherhood. However, arousal of maternal distress and anxiety through biological, psychological, and social factors can be overwhelming (Annagür et al., 2014; Pirmoglu et al., 2010; Schetter, 2011; Uguz et al., 2012). Approximately 40% of pregnant women face symptoms of anxiety in developing nations (Abrar et al., 2020).

An uncommon condition known as Hyperemesis Gravidarum (HG) is experienced by 0.3% to 2% of pregnant women where it requires hospitalization (Simsek et al., 2012). Hyperemesis gravidarum refers to vomiting during pregnancy that leads to weight loss, which influences the quality of life and is regrettably difficult to treat (Jennings & Krywko, 2018). Early symptoms of HG are known to begin at the 4th to 6th week of pregnancy but usually peak at 8 to 12 weeks of gestation and subside by the 20th week of gestation (Johnson et al., 2015). A Malaysian study reported

that women with HG reported more depressive symptoms than their counterparts who were not diagnosed with HG (Azlan et al., 2020).

The condition of HG disrupts focus towards the career, even forcing pregnant women with the condition to take temporary leave or risk losing their jobs for being unable to attend the workplace or to terminate their pregnancies when financial help is much needed. Hence, coping strategies have always been discussed regarding how women overcome the challenges of HG during pregnancy.

In this study, HG is being contextualized by adapting the bio-psychosocial model and Lazarus and Folkman's transactional model of stress and coping towards anxiety, coping strategies, and social factors. Findings of associations between HG and anxiety cannot be extrapolated to all pregnant women who have anxiety, as individual differences and factors may arise, which leads to experiencing anxiety differently in each individual. This phenomenon is due to diverse cognitive perceptions over distressful event. Scarce information exists regarding the assessment of the severity of anxiety that motivates HG patients to adopt specific coping styles in relieving the anxiety.

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According to the model introduced by Lazarus and Folkman (1984), there is a two-way process in the stress model; stress is being induced by the environment and the way the individual is subjected to stress response to the stressor. Building on from Beck's appraisal concept of the cognition of anxiety (Beck, 1976; Beck et al., 2005), Lazarus and Folkman's model depicts the coping strategies suggested to be effective in dealing with distressful circumstances. Lazarus and Folkman (1984) conceptualized coping as the cognitive and behavioural efforts made to master, tolerate, or reduce external and internal demands and conflicts among them. The model also conceptualizes how the outcomes of the acquired strategies either alleviate or elevate feelings of distress in dealing with a stressor. The coping strategy model incorporates the problem-focused coping style and emotion-focused coping style (Lazarus & Folkman, 1984).

Problem-focused coping is when a person perceives that he or she can control the stressful situation and believes that one can change the stressful event. In this study, pregnant women diagnosed with HG may adapt problem-focused coping mechanisms by being literate in the problem that they are facing (Saleh & Sykes, 2014).

Emotion-focused coping is a mechanism utilized in situations that are unable to be changed (Lazarus & Folkman, 1984). When one has less control over altering their stressors, this type of coping strategy aims to transfer into efforts to think or feel about the stressful event. It consists of distancing, avoiding, selective attention, and blaming, minimizing, wishful thinking, venting emotions, seeking social support, exercising, and meditating (Herman & Tetrack, 2009). Women suffering from HG may adapt reframing on the feeling about their condition. At times, they may use both coping mechanisms concurrently to alleviate the stressful condition. In the case of a pregnancy with a surplus stressor such as HG, the way a woman appraises situations influences her coping behaviour and forms her emotional and behavioural responses (Guardino & Schetter, 2014; Lazarus & Folkman, 1984).

Dysfunctional coping is introduced by Carver et al. (1989) and includes venting of emotions, denial, behavioural disengagement, mental disengagement, and alcohol / drug use. This type of coping is less useful.

The bio-psychosocial model is about the interaction of the biological, psychological, and social aspects of the issue (Alderdice et al., 2013; Engel, 1981). In HG patients, these three components affect the pregnant women's distress, which relies on the coping

strategies that she uses (Schetter, 2011).

Many studies suggested that psychological events are consequential to HG, causing emotional and psychological distress (McCarthy et al., 2011; Smith et al., 2000; Tan et al., 2014). During the first half of women's pregnancy, hospitalization is required for those who suffer nausea and vomiting; nevertheless, the cause of this phenomenon is still unknown (London et al., 2017). Even so, a large number of studies have delved into the emotional impact of a Hyperemesis Gravidarum among early pregnancies (Bulin, 2019; Bulut & Özdemir, 2019; Khoramroudi, 2018; Mekonnen et al., 2018). Among patients in HG, anxiety and emotional distress were more prevalent and severe (Hussien et al., 2019).

In Malaysia, 69% of pregnant women suffer from anxiety due to HG, which reports as the most common cause of psychological distress (Tan et al., 2014). Many previous studies further support the connection between anxiety and HG (Beyazit & Sahin, 2018; Hussien et al., 2019; Loo et al., 2018; McCarthy et al., 2011; Munch et al., 2011; Pirimoglu et al., 2010).

A study by O'Brien et al. (2002) on hospitalized women with HG determined the coping mechanisms utilized to handle this medical condition. As the severity of symptoms increases, expectant mothers tend to find it challenging to convey their feelings to others to prevent others from perceiving them as unable to manage their condition effectively (O'Brien et al., 2002). Instead, some opt to choose resentment coping mechanisms by physically and socially withdrawing, as well as isolating themselves from all aspects of their life, indicating dysfunctional coping styles (Locock et al., 2008; Lord & Pelletier, 2008).

Chinese women with a higher level of education had higher scores in both positive and negative coping styles in their pregnancy (Yu et al., 2020). In a study among pregnant women who experienced adversities in Australia, the findings showed that problem-focused and dysfunctional coping are correlated with an increased level of subjective distress. However, emotion-focused coping is correlated with decreased subjective distress levels (Chen et al., 2020). In a study among Iranian pregnant women, Shamsaei et al. (2019) found that coping styles may mediate the relationship between general health status and perceived stress.

In low-income regions, many pregnant women are unable to fulfil critical everyday needs specifically related to antenatal health, which may increase their antenatal anxiety (Katz et al., 2018). In the study by Silva et al. (2017), the findings showed a statistically significant correlation between the occurrence of anxiety during pregnancy and employment status,

indicating that pregnant women performing domestic tasks were more likely to experience anxiety during pregnancy than those working. They also found that besides occupation, problems in previous pregnancies, history of premature birth, intentional pregnancy, number of abortions, number of cigarettes smoked per day, and use of medications were correlated with anxiety during pregnancy.

In addition, a lower educational level is reported to be associated with a lower social status, and those with these characteristics lack ample support and knowledge to enhance their maternity condition, as stated by Kang et al. (2016), who found a relationship between education level lower than middle school and antenatal anxiety among pregnant women in China.

The findings of the PRenancy and Infant DEvelopment (PRIDE) Study, a broad prospective cohort study in Europe targeted at covering 150,000–200,000 early-pregnant women, show that education level is associated with anxiety in pregnant women (van de Loo et al., 2018). This was consistent with the findings of the study by Erkaya et al. (2017) in Turkey, which mentioned education level and social support availability as correlated factors to anxiety in Turkish pregnant women.

The research on obstetrics variables and anxiety among pregnant women in South Africa showed that multigravidas, unplanned and unwanted pregnancy, pregnancy loss, food insecurity, and history of mental health problems are predictors for anxiety. It was also revealed that relatively higher social support tends to decrease the likelihood of antenatal anxiety and this anxiety was more prevalent among women with low resources for living and low education (van Heyningen et al., 2017).

Aim

The objective of this study is to identify the levels of anxiety that determine specific coping strategies among HG women. The secondary aim is to predict socioeconomic status (SES) (education level, household income, employment status) and obstetric factors (planning of pregnancy, parity, other medical conditions) towards the four anxiety levels (normal, mild, moderate, severe). The final aim is to predict SES and obstetric factors towards three coping strategies (emotion-focused, problem-focused, and dysfunctional) adapted by women diagnosed with HG.

Methods

Design

This study is an exploratory investigation of mental health and coping strategies among pregnant women with HG condition. It employs a cross-sectional survey design, measuring anxiety levels and coping mechanisms as main variables. This study was conducted in Malaysia. Before data collection, ethics approval to conduct this research was obtained from the Research and Ethics Committee of International Medical University in Malaysia. Written consent was obtained from forty Hyperemesis Gravidarum patients who participated in this study.

Sample

The sample of this study was pregnant women diagnosed with HG by specialists. Respondents were recruited from maternity hospitals, community groups for expectant mothers, and facilities that provided antenatal or prenatal resources from the city of Kuala Lumpur in Malaysia. This study adopts the purposive sampling technique. We approached four maternity hospitals, five community groups for expectant mothers, and two facility centres that provided antenatal and prenatal courses. Thus, referred by the sampling locations facilitators, patients who have met the inclusion criteria were invited to participate in this study. The inclusion criteria were pregnant women who had been medically diagnosed with HG by specialists. Exclusion criteria are individuals who are unable to comprehend English or the Malay language, as the questionnaires were in the form of both languages.

The total number of HG patients in these facilities was 64. However, there was a dropout rate, as not all patients were able to complete the questionnaires because of the sudden vomiting syndrome experienced by them and were unwilling to continue participating in the study. Eventually, forty women who were medically diagnosed with HG came forward for this study. Opportunities were given to conduct a brief presentation for recruitment at the relevant maternity hospitals. Upon obtaining permission from the management, HG patients' identifications were given by the staff nurse to administer the questionnaire. Whereas at other community groups that cater to expectant mothers, a list of patients with HG was provided by the in-house doctor.

Data collection

Participant consent form, demographics, and obstetrics information form, Generalized Anxiety Disorder (GAD-7) (Spitzer et al., 2006) self-reported questionnaire, and Brief COPE (Carver, 1997) were utilized for data collection.

Generalized Anxiety Disorder-7 (GAD-7)

GAD-7 has been established as a beneficial screening tool for anxiety symptoms among pregnant women (Simpson et al., 2014). The GAD-7 has 7 items measured on a 4-point Likert scale rating (0–3 points). The total score ranges from 0–21. The cut-off points for normal anxiety are 0–4, mild anxiety is 5–9, moderate anxiety is 10–14 and severe anxiety is 15–21. The higher the GAD scores, the more healthcare attention is required (Ruiz et al., 2011). This scale is validated in the Malaysian context (Sidik et al., 2012) and establishes high reliability in both languages – i.e., English and Malay, with a Cronbach's alpha of 0.91 and 0.74 respectively (Delgadillo et al., 2012; Sidik et al., 2012).

Brief COPE Scale

The purpose of the COPE Inventory is to measure the types of stress coping mechanisms. The scale has 28 items with 14 coping strategies in three main domains (emotion-focused, problem-focused, and dysfunctional coping strategies). Problem-focused domain measures active coping, use of instrumental support, and planning. Emotion-focused coping measures the use of emotional support, positive reframing, humour, acceptance, and religion. Dysfunctional coping measures denial, substance use, behavioral disengagement, venting, self-blame, and self-distraction (Carver, 1997). Items are being measured using a 4-point Likert scale (1 – I have not been doing this at all; 2 – I've been doing this a little bit; 3 – I've been doing this a medium amount; 4 – I've been doing this a lot). This scale has established acceptable reliability with a Cronbach's alpha of 0.72, 0.84, and 0.75 respectively (Cooper et al., 2008). Besides, the study by Yusoff et al. (2009) confirmed good reliability and validity for the Brief COPE Scale in the Malaysian context. The reliability analysis in this study displayed a Cronbach's alpha of 0.847.

There is no overall score in this inventory and no particular way of generating a dominant coping style for a given person. Items are scored based on the Likert scale, with no reverse scoring. Conceptually, there is no ideal method in dealing with a problem. The items measure the extent that the respondents have been coping and not whether the coping style has been working or not. The above instruments have undergone back-to-back translation. To provide a clear audit trail, these instruments were given to professors in psychology from the public university whose mode of teaching is in the Malay language to conduct back translation. The translation was conducted to assess the quality of expression and to identify ambiguities in the translation. Multi-racial ethnicities live in Malaysia and the Malay language is

made compulsory, thus the majority of citizens are comfortable with this language. Having said that, in addition to the translation, researchers in this study conducted a face-to-face approach in administering the questionnaire to reduce the risk of misinterpretation of the items in the instruments.

Data analysis

Analysis of the data was conducted using International Business Machines (IBM) Statistical Package for the Social Sciences (SPSS) for Windows, Version 21. A binary logistics regression analysis was used to explore the role of SES and obstetric variables as a predictor of dominant coping strategies. Also, a linear regression analysis was conducted to explore the predicting factor of anxiety toward stress coping strategies. To investigate the differences between the levels of anxiety and coping strategies, a one-way ANOVA was conducted and to determine the significant differences between anxiety levels and coping strategies Tukey post-hoc test was used.

Results

There was a total of 40 Hyperemesis Gravidarum patients participated in this study. The mean age of respondents was 28.90 (SD = 4.522). The majority (80%) of the respondents possess tertiary-level education, 17.5% secondary school level, and 2.5% primary school level. Almost 53% come from a high-income household and 70% were employed. Of the total number of participants, 57.5% planned their pregnancy and 42.5% had unplanned pregnancies. Among them, 80% were in their first pregnancy and 20% were in the second pregnancy. A vast majority (95%) of them had no comorbidity issues.

The dependent variables were normally distributed by employing Shapiro-Wilk test and outliers was not detected. Anxiety is categorized into Severe (n = 8; mean = 18.5; SD = 2.39); Moderate (n = 11; mean = 12.90; SD = 1.38); Mild (n = 10; mean = 7.80; SD = 1.14); and Normal (n = 11; mean = 2.36; SD = 1.43).

A multinomial logistics regression was performed to predict the possible contributions of socioeconomic and obstetric variables towards the different levels of anxiety in respondents. As shown in Table 1, our findings revealed that only the employment status of respondents significantly predicted anxiety across the socioeconomic status.

To explore the role of SES and obstetric variables as a predictor of dominant coping strategies, a binary logistics regression analysis was used. As reported in Table 2, our findings showed that household income

Table 1 Multinomial logistic regression between SES and obstetric variables predicting anxiety (n = 40)

Model	Model fitting criteria	Likelihood ratio tests		
	-2 Log Likelihood	Chi-Square	df	Sig.
SES	37.292	14.591	9	0.103
education level	39.769	2.476	3	0.480
household income	41.139	3.847	3	0.278
employment status	47.575	10.282	3	0.016
Obstetrics	28.694	11.480	9	0.238
planning of pregnancy	30.469	1.776	3	0.620
parity	34.443	5.749	3	0.124
other medical condition	32.493	3.799	3	0.284

SES – socio-economic status; df – degree of freedom; Sig. – significance

Table 2 Binomial logistic regression between SES and obstetric variables to emotion-focused coping strategy (n = 40)

Variables	B	S.E.	Wald	Exp(B)	χ^2	df	Sig.
SES					7.207	3	0.066
education level	1.884	0.953	3.910	0.152		1	0.048
household income	-1.616	0.806	4.019	5.032		1	0.045
employment status	-0.005	0.919	0.000	0.995		1	0.995
Obstetric					1.226	3	0.747
planning of pregnancy	0.135	0.762	0.031	1.114		1	0.860
parity	0.116	0.930	0.016	0.890		1	0.901
other medical conditions	-20.187		0.000	0.000		1	0.999

SES – socio-economic status; B – beta; S.E. – standard error; Wald – Wald test; Exp(B) – odds ratio; χ^2 – Chi Square; df – degree of freedom; Sig. – significance

and education level are statistically significant predictors of dominant emotion-focused coping strategies. It was found that if women have a higher education level, the likelihood of emotion-focused strategies increased 6.579 times, and if the household income was higher it was 0.199 times less likely to adopt emotion-focused coping strategies. To explore the predicting factor of anxiety toward stress coping strategies, a linear regression analysis was used (Table 3). A statistically significant regression equation was generated ($F [1, 38] = 19.549$; $p = 0.000$) with an R^2 of 0.340. Participants' dysfunctional coping score increases by 0.540 with each increase in one point of anxiety score. With regards to specific type of coping styles, denial generated an R^2 of 0.483, ($F [1, 38] = 35.55$; $p = 0.000$). Instrumental support, generated ($F [1, 38] = 12.686$; $p = 0.001$) with an R^2 of 0.25. Venting produced an R^2 of 0.267 ($F [1, 38] = 13.812$; $p = 0.001$). Whereas humour was negatively correlated, which produced a beta of -0.086, R^2 of 0.098 ($F [1, 38] = 4.108$; $p = 0.050$). Hence, participants' humour coping score decreased by -0.086, with each increase in one point of anxiety score. Overall, pregnant women diagnosed with HG tend to adopt dysfunctional stress coping mechanisms that are less useful in managing their anxiety. Among the coping mechanism, women with HG prefers to be in denial, followed by venting (Women express their

unpleasant feelings to others to escape the anxiety) and instrumental support, whereby trying to get help from others. The worrying fact is that none of the participants adopted a problem-based stress-coping mechanism.

To explore the differences between the levels of anxiety and coping strategies among women with HG, a one-way ANOVA was used to analyse the data (Table 4). Besides, the Levene's test was conducted (Table 4). Homogeneity of variances analysed using Levene's test indicates a non-violation of assumption. ANOVA results indicate that there are significant differences between levels of anxiety (normal, mild, moderate, severe) and problem-focused and dysfunctional stress coping strategies. The levels of anxiety were not statistically significant in emotion-focused coping. There was a significant difference in four levels of anxiety and problem-focused coping strategies ($F [3, 36] = 2.977$; $p = 0.044$; $\eta^2 = 0.199$); and dysfunctional coping strategies ($F [3, 36] = 7.563$; $p = 0.000$ [$p < 0.001$]; $\eta^2 = 0.387$).

Further analysis was conducted employing Tukey post-hoc test to determine the significant differences between anxiety levels and coping strategies. Results showed that sampled women with HG adopted dysfunctional coping strategies when encountered with severe levels of anxiety. The mean score of

Table 3 Linear regression analysis of coping strategies towards anxiety (n = 40)

Variable	B	SE (B)	β	t	Sig.
Dysfunctional	0.540	0.122	0.583	4.421	0.000
Denial	0.166	0.028	0.695	5.962	0.000
Humour	-0.086	0.042	-0.312	-2.027	0.050
Instrumental support	0.41	0.040	0.500	3.562	0.001
Venting	0.41	0.038	0.516	3.716	0.001

B – unstandardised beta; SE (B) – standard error for unstandardised beta; β – standardized beta; t – t-value; Sig. – significance

Table 4 One-way Analysis of Variances (ANOVA) between anxiety levels and coping strategies (n = 40)

Variable		SS	df	mean square	F	Sig.	Levene's test Sig.
Emotion-focused coping	between groups	56.11	3	18.70	0.564	0.642	0.083
	within groups	1193.87	36	33.16			
	total	1249.98	39				
Problem-focused coping	between groups	126.33	3	42.11	2.977	0.044	0.452
	within groups	509.27	36	14.15			
	total	635.60	39				
Dysfunctional coping	between groups	482.01	3	160.67	7.563	0.000	0.274
	within groups	764.76	36	21.24			
	total	1246.78	39				

SS – sum of squares; df – degree of freedom; F – F-test statistics of the difference of group; Sig. – significance

dysfunctional coping strategy was significantly higher during severe anxiety (mean = 26.50; SD = 6.392; $p = 0.001$), or mild anxiety (mean = 22.60; SD = 4.351; $p = 0.024$), as compared to normal condition (mean = 16.55; SD = 3.174) but not in the moderate anxiety group (mean = 21.18; SD = 4.557; $p = 0.104$). The mean of problem-focused coping strategy was significantly higher when anxiety was mild (mean = 17.50; SD = 3.629) in comparison with the normal condition (mean = 12.82; SD = 4.687; $p = 0.035$).

Discussion

Findings revealed that employment status and income factors significantly predicted anxiety among patients with HG. Similar to the previous study, it is noted that psychosocial factors influence anxiety among HG patients (Poursharif et al., 2007). Women who are employed while going through the traumatic duration of HG may undergo more anxiety than those who are unemployed. Juggling career responsibilities and having another significant role as a mother can be overwhelming for an individual especially with an added condition like HG, which raises concerns over personal health, job aspects, the well-being of the child, and financial expenses (Grant et al., 2008). In the urban Malaysian context, working women do not have leeway such as extended off days nor flexible working hours to care for their children. In fact, private as well as government corporations rarely have a nursery in the offices. As a result, expectant mothers send their children to the nursery

and head to work. However, they are provided with annual medical leave, which comes in a restricted number of days, some depending on the length of service tenure. This study depicts the reality of challenges among employed expectant mothers who are diagnosed with HG.

A coping strategy to counter stress and anxiety issues is essential for one to go through pregnancy smoothly. When analysing demographics factors, one of the factors that have emerged as predictors of a coping strategy is higher education qualification. Women diagnosed with HG who possess higher qualification are inclined to adopt emotion-focused coping strategies. In the Brief-Cope scale, emotion-focused coping measures the use of emotional support, positive reframing, humour, acceptance, and religion.

Females predominantly project higher emotions than males. Hence, it comes as no surprise, from the results of this study, that HG women adopt emotion-focused coping strategies to reduce their negative emotional response as found by the previous study in Faramarzi et al. (2016) on pregnant women. Having HG is choiceless in a pregnant woman. As this study revealed, employed HG women have anxiety. The highly educated respondents in this study sensibly adopted emotional coping strategy to reduce their anxiety. Similarly, women with higher income adopt emotional coping strategies. Perhaps, these patients may have higher exposure to the external world to draw emotional support through relatives and friends. They may have used religion and positive reframing as a platform to tackle their anxiety issues.

In summary, the higher the socio-economic status, the more inclination to emotional-focused coping strategy.

Another aim of the study is to determine the prediction of coping strategies towards anxiety. Among the various coping strategies predicted, instrumental support is one of them. Instrumental support, categorized as a problem-focused coping mechanism, is shown to be a significant predictor of coping strategies. Example of instrumental support is financial assistance, which is tangible support. Despite the challenges faced by individuals with HG, the awareness of seeking helpful solutions in curbing their situation prevails as important. According to Khresheh (2011), some women attempt to adopt problem-focused strategies to overcome their mild anxiety to be able to tolerate the HG symptoms. Therefore, the findings from this study emphasise women diagnosed with HG rely on a comprehensive and functional support guide.

Results also reveal that Malaysian women diagnosed with HG utilize dysfunctional coping strategy towards their anxiousness. In regards to the levels of anxiety, there was a significant difference in the four levels of anxiety and coping strategies. Results revealed that women with HG adopted dysfunctional coping strategies when encountered with severe levels of anxiety followed by problem-focused coping strategy.

It is very regrettable that women who are struggling with HG are more inclined to adopt denial and venting, which are categorized under the dysfunctional coping strategy. Healthcare professionals suggest adopting more effective coping methods instead of denial and venting as strategies to overcome anxious feelings as pregnancy management. The use of ineffective methods of coping will only lead to a decrease in adaptation to pregnancy (Bulut & Ozdemir, 2019).

Evidence suggests that denial is the most popular strategy adopted by women diagnosed with HG in dealing with antenatal health management. Denial is one of the worst dysfunctional coping mechanisms. People who are in denial have psychological defence reactions against stressful and anxious provoking situations. Furthermore, venting is seen as another popular strategy perceived as an outlet for HG patients to release their frustrations, although without realizing its effects are only momentarily. Specifically, they express their unpleasant feelings to others to escape from feeling anxious. It causes further extended feelings of anger and possible self-defeating behaviours during the process of coping; hence why dysfunctional coping is not a useful coping mechanism. However, in this study, participants may

have used the dysfunctional coping mechanism, due to having no other insight to circumnavigate their anxiety.

Humour has emerged as one of the predictors of anxiety. Humour is regarded as an emotional coping strategy. Humour is inversely related to anxiety. As the serious circumstances of the HG condition elevate feelings of anxiousness, humour is more likely to be an option as a coping mechanism in alleviating distress. The implication of the finding suggests several courses of action to be implemented that promote awareness of effective management strategies. An effort by healthcare providers would thus benefit the community of expectant mothers especially those who are suffering from HG, to better understand the holistic perspective of biopsychosocial factors and emphasizing the adaptation of problem-focused coping strategies that could help minimize the psychological distress experienced. A reasonable approach to tackle this issue is by disseminating information about HG as a resource is suggested to be delivered as psychoeducation and creating an outreach program to the community, enabling ease with the coping process for not only HG sufferers but for their families and social support system as well.

The findings of this study may have practical significance for healthcare providers for pregnant women. Healthcare personnel must be aware of factors affecting the distress in patients and may guide them in regards to psychosocial care and support during the pregnancy (Yilmaz & Sahin, 2019). The previous study indicates that negative quality of life among patients with HG affects the acceptance of pregnancy and eventually the role of motherhood (Türkmen, 2020). Essentially, healthcare providers must be equipped with knowledge of coping strategies. This will be beneficial in providing patient-centred care to serve the holistic individual needs of HG patients with adaptive maternity services (De Labrusse et al., 2016). This effort aligns with the continuous call for healthcare institutions to promote more empathetic and humanistic approaches in providing care and services that will help comfort patients who face such physical and psychological distress. Also, a considerate support program or system is suggested to be adopted by employers to accommodate women with HG who might require certain facilities – i.e., extended sick leave, healthcare referrals, and counselling services.

This study has some limitations. The limitation emerges in the form of the number of samples. The main challenge was to acquire participants, as the condition of the patients needs to be ethically

considered due to the diagnosis of pregnancy. Although the management of the maternity centres and the hospitals allowed for data collection, nevertheless constant nausea and vomiting disallowed the smooth data collection, hence the dropout rate was high. It is recommended for future studies to explore the coping strategies among women with HG in a larger sample size. Moreover, a semi-structured interview could provide more meaningful insights into ways of coping with this condition. Another limitation of this study is that the pregnancy week and order are not taken into consideration in the data-collection stage. Future studies are encouraged to include this factor in their studies.

Conclusion

Conceptualizing the bio-psychosocial model and Lazarus and Folkman's transactional model of coping and stress has further established the relationship between anxiety and the coping mechanism that was utilized following HG. In a nutshell, socioeconomic status, especially employment and household income, influenced anxiety among HG patients. Regarding coping strategy, instrumental support is being adopted in terms of seeking help from others. Ironically, HG patients succumbed to dysfunctional coping strategies, specifically denial and venting as the most sought-after strategies when encountered with severe anxiety. Overall, greater efforts are needed in increasing the duty of care among healthcare providers in Malaysia to propagate holistic and resourceful coping management with the Hyperemesis Gravidarum health condition that could help potential HG patients in the future. Further studies would be required to delve into the reasons behind adopting dysfunctional coping strategies by women diagnosed with HG.

Ethical aspects and conflict of interest

This study was conducted in accordance with general ethical guidelines in psychology. The ethical approval was obtained from International Medical University Research and Ethics Committee in Malaysia and written consent was obtained from individuals who participated. The participants were informed in advance in writing about the fact that their participation in the research is voluntary and does not involve any risks. They were assured that all data obtained would be anonymous and confidential. They provided their written informed consent to participate in this study. The author declares that there is no conflict of interest.

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Author contributions

All authors have contributed significantly in all parts of the project, and that all authors are in agreement with the content of the manuscript.

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