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ARTIKEL PENELITIAN

Detection of Mental Emotional Disorder Symptoms using the SRQ-20 in Pregnant Women: A Case Example from South Sulawesi, Indonesia

Deteksi Gejala Gangguan Jiwa Emosional Menggunakan SRQ-20 pada Ibu Hamil: Contoh Kasus dari Sulawesi Selatan, Indonesia

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Abstract

The maternal health condition in Indonesia still requires special attention in terms of prevention and management of mental-emotional disorders. Meanwhile, the Indonesia Basic Health Research in 2013 results show that the prevalence of mental-emotional disorder was approximately 6% in each of the different provinces. This study aims to detect the prevalence of mental-emotional disorders symptoms in pregnant women and examine the relations with age, education, occupation, number of children ownership, MUAC (Mid-Upper Arm Circumference), and blood pressure. This is an analytical observational study conducted using a cross-sectional design on pregnant women that participated in antenatal examination visits to health facilities. The location was 60 Private Delivery Centers, 244 Public Health Centers, and 259 Hospitals. The sampling site was carried out in three different places, which focused on three areas of South Sulawesi in Makassar, Maros, and Pangkep. The pregnant woman within the age range of 20-35 years shows 71,3% with a p-value=0,080 having mental-emotional disorder symptoms and 71,5% of mothers with less than two children predominantly experienced mental-emotional disorders symptoms with a p-value=0,078. Hence, it is important to address this issue because the mental and emotional problems in pregnant women can potentially lead to adverse effects, both for the women and the baby.

Keywords: *mental disorder, pregnancy, SRQ-20*

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Abstrak

Kondisi kesehatan ibu di Indonesia masih memerlukan perhatian khusus dalam hal pencegahan dan penanganan gangguan jiwa emosional. Sementara itu, hasil Riset Kesehatan Dasar Indonesia tahun 2013 menunjukkan bahwa prevalensi gangguan jiwa emosional sekitar 6% di setiap provinsi yang berbeda. Penelitian ini bertujuan untuk mengetahui prevalensi gejala gangguan jiwa emosional pada ibu hamil dan mengetahui hubungannya dengan umur, pendidikan, pekerjaan, jumlah kepemilikan anak, LILA (Lingkar Lengan Atas), dan tekanan darah. Penelitian ini merupakan penelitian observasional analitik yang dilakukan dengan menggunakan desain *cross-sectional* pada ibu hamil yang melakukan kunjungan pemeriksaan antenatal di fasilitas kesehatan. Lokasi penelitian berasal dari 60 Balai Persalinan Swasta, 244 Puskesmas, dan 259 Rumah Sakit. Lokasi pengambilan sampel dilakukan di tiga tempat berbeda, pada tiga wilayah Sulawesi Selatan yaitu Makassar, Maros, dan Pangkep. Ibu hamil dengan rentang usia 20-35 tahun menunjukkan 71,3% dengan *p-value*=0,080 mengalami gejala gangguan jiwa emosional dan 71,5% ibu dengan anak kurang dari dua orang secara dominan mengalami gejala gangguan jiwa emosional dengan *p-value*=0,078. Oleh karena itu, penting untuk mengatasi masalah ini karena masalah mental dan emosional pada ibu hamil berpotensi menyebabkan efek buruk, baik pada ibu maupun bayinya.

Kata Kunci: gangguan jiwa, ibu hamil, SRQ-20

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INTRODUCTION

Current epidemiological data show that the prevalence of mental disorders in women is approximately 20%, with mood and anxiety disorders being the most common. In addition, approximately 10% to 15% of women suffer from a depressive episode during pregnancy or in the first year postpartum. The perinatal period is also associated with a great risk of mental disorders manifestation, particularly in women with a previous history of these disorders (Mongan *et al.*, 2019). Maternal mental health issues are considered a major public health challenge globally. Meanwhile, the maternal health condition in Indonesia still requires special attention in terms of prevention and management of mental-emotional disorders. This is in line with the Indonesia Basic Health Research Data, which show that the prevalence of mental-emotional disorders in the different provinces of the Indonesian population is approximately 6% (WHO, 2017).

In addition, a study conducted in Indonesia, showed that the prevalence of depression symptoms in postpartum mothers is 22%, and is in the mild category. Furthermore, pregnancy is a period of significant emotional turmoil, which requires adjustment to various circumstances, failure to adjust then induces temporary sadness which potentially leads to psychological disorders (Ferraro *et al.*, 2017). In low-income

nations, maternal stress and mental illness are more prevalent and have a greater effect. Meanwhile, research conducted among women in low-income urban Nairobi found a statistically significant connection between inadequate nutrition as indicated by the MUAC, and maternal depression (p-value=0,001). Additionally, there was a statistically significant correlation between maternal sadness and insufficient consumption of necessary brain food (p-value=0,002). Depression among mothers was shown to be substantially linked with lower income (p<0,001). Pregnant women (12-24 weeks) (p-value=0,02) and those with lower levels of education (p-value=0,004) (Madeghe *et al.*, 2021).

The prevalence of antenatal depression, applying clinical criteria, is similar to that seen in high-income countries. Factors related to chronic social and economic disadvantage are among the most important co-determinants (Weobong *et al.*, 2014). Both ethnic minority status and low socioeconomic level have been recognized as risk factors for perinatal mood and anxiety, as well as a history of poor mental health, unfavorable conditions surrounding pregnancy and delivery, a history of abuse/domestic violence, and unpleasant life events, a number of children ownership, high perceived stress, being single, and unplanned or unwanted pregnancy (Robinson *et al.*, 2016). Hein et al. discovered that parity, education level, monthly income, ownership of primary residence, marital status, and also their interactions, were all predictive of depression during and after maternity (Hein *et al.*, 2014).

The major mental health problems of pregnant and postpartum women are related to symptoms of anxiety and depression. According to a multivariate analysis of the SRQ, there was a significant association between lower perceived social support, domestic violence, reported experiencing a complexity during a previous delivery, a larger maternal mid-upper arm circumference, and more years of education.

For instance, medical care suppliers that work in sexual and regenerative wellbeing administrations for pregnant ladies are prepared to perceive manifestations and signs reminiscent of emotional well-being issues and direction ladies about pressure and offer viable mental help just as different mediations, for example, the Antenatal Care (ANC) program. Moreover, the antenatal identification of women with a history of mental illness is important to protect maternal and subsequently neonatal health (Vijay and Patel, 2020). Therefore, this study aims to detect the risk of prevalence of mental-emotional disorders symptoms in pregnant women and examine the relationship with age, education, occupation, number of children ownership, mid-upper arm circumference, and blood pressure.

METHOD

Primary data were obtained from several health facilities with standard characteristics of age, education, occupation, body weight during pregnancy, mid-upper arm circumference, blood pressure, number of children, and mental emotional disorder symptoms in pregnant women from 60 Private Delivery Centers, 244 Public Health Centers and 259 Hospitals. The sampling site was carried out in three different places, which focused on three areas of South Sulawesi in Makassar, Maros, and Pangkep. between December 2017 – early October 2018 with a 563 sample size. Measurements of blood pressure, body weight, and MUAC (Mid-Upper Arm Circumference) adopted by the guidance Ministry of Health, Republic of Indonesia. According to the Ministry of Health, the cut-off point for pregnant women is referred to as the categorical risk of chronic energy deficiency if the size of the MUAC is less than 23,5 cm (Raineau *et al.*,

2021). The MUAC measurements were directly carried out by the researchers and applied to this study to determine the nutrition status of pregnant mothers because the researchers did not have data on weight before pregnancy, so they could not determine Body Mass Index (BMI). Various studies both in Indonesia and abroad show that the mid-upper arm circumference is a reasonably good predictor to determine the risk of chronic energy deficiency (Oktavianda *et al.*, 2018) and a predictor of the risk of giving birth to low birth weight babies (Ministry of Health of the Republic of Indonesia, 2018), neonatal death less than one week after the delivery (Lehtonen *et al.*, 2017) and nutritional status of infants up to 9 years of age (Verkuij *et al.*, 2014).

This study was conducted using a cross-sectional design, while the data were collected with the Socio-Demographic Questionnaire and Self Reporting Questionnaire (SRQ-20) used by this research because it is a psychiatric disorder screening questionnaire with good validity and reliability developed by WHO (2017) for research purposes and was used by Indonesia Basic Health Research to screening the mental health of the Indonesian population and had through stages of validation by language translation to filter the meaning of words to be more understandable. The data collected using the SRQ instrument were limited to only revealing an individual's emotional status for a moment (±30 days) and were not designed to specifically diagnose mental disorders symptoms. Meanwhile, the data analysis technique used includes frequency distribution, chi-square, as well as Odds Ratio and were presented in tabular forms. Subjects that answered at least 6 questions with "yes" were declared to have mental-disorders symptoms used as our cut-off point which was determined from Indonesia Basic Health Research, with a cut-off point of 6 through a validity test with a sensitivity of 88% and a specificity of 81% and followed with a degree of significance p-value <0,005.

RESULTS AND DISCUSSION

Table 1 shows that the majority of the subjects (88,5%) were aged between 20-35 years, 58,1% had normal mid-upper arm circumference status, while 40,5% had normal blood pressure although there were others with pre-hypertensive status. For the number of children, 89% had ≤2 children. Furthermore, the highest level of education was high school graduates with 55,2%, while the lowest was master's degree with 0,2%. The occupational status was dominated by housewives 90,2%, while 72,3% experienced mental-emotional disorders symptoms. In addition, pregnancy within this age range tends to cause higher anxiety and is associated with a lower risk of complications. Medical problems that occur include anemia, high blood pressure, preterm labor, and cesarean section during delivery. In contrast, pregnancy over 35 years poses a high risk to both the mother and the child by increasing the maternal mortality rate, difficulty in labor, and chromosomal defects. But these results are not in line with those reported that the younger age group has severe anxiety up to 13,5%. According to Belgian research, intense anxiety during early pregnancy may alter the fetal brain and increase the risk of impulsivity and cognitive impairments in children aged 14 and 15 years (Kristiana, 2017).

Table 1. Characteristics of subject (n=563)

Characteristics	n	%
Age		
<20 years	17	3,0
20-35 years	498	88,5
>35 years	48	8,5
Body weight while pregnant		
≤50 kg	407	72,3
>50-70 kg	148	26,3
>70-90 kg	6	1,1
>90 kg	2	0,3
MUAC (Mid-Upper Arm Circumference)		
Normal (>23,5 cm)	463	82,2
Undernourished (≤23,5 cm)	100	17,8
Blood pressure		
Normal	327	58,1
Pre-hypertension	228	40,5
Hypertension grade 1	5	0,9
Hypertension grade 2	3	0,5
Number of children ownership		
≤2 children	501	89,0
>2 children	62	11,0
Education		
Not completed in primary school	5	0,9
Graduated from elementary school	61	10,8
Graduated from junior high school	127	22,6
Graduated from high school	311	55,2
Undergraduate	58	10,3
Master degree	1	0,2
Occupation		
Midwife	2	0,4
Teacher	14	2,5
Honorary	3	0,5
Housewife	508	90,2
Private	10	1,8
Civil servants	15	2,7
Entrepreneur	8	1,4
College student	3	0,5
Mental emotional disorder symptoms status		
Experiencing mental emotional disorder symptoms	407	72,3
Do not experience mental emotional disorder symptoms	156	27,7

Source: Primary data, 2017-2018

Additionally, it has been shown that elevated maternal anxiety during the first 12 to 22 weeks of pregnancy may have a substantial role in the development of ADHD symptoms, externalizing issues, and anxiety in 8 and 9-year-olds. Pregnancy-related complications are among the greatest killers of women of reproductive age in developing countries. Many pregnant women may face the risk of sudden, unpredictable complications that could end in death or injury to themselves or to their babies (Begum, 2016). Additionally, data on the presence of a few illnesses including diabetes, lung and neurological sicknesses, just as physically communicated infections, including HIV

contamination, urinary lot diseases, and iron insufficiency paleness (Anwar *et al.*, 2020).

Table 2. Determine the relationship between mental emotional disorders symptoms and pregnant women (n=563)

Characteristics	Do not experience mental disorders symptoms (n=168)	Experiencing mental emotional disorder symptoms (n=395)	p-value
	n (%)	n (%)	
Age			
<20 years	4 (23,5)	13 (76,5)	
20-35 years	143 (28,7)	355 (71,3)	0,080
> 35 years	21 (43,8)	27 (56,2)	
MUAC (Mid-Upper Arm Circumference)			
Normal (>23,5 cm)	142 (30,7)	321 (69,3)	0,421
Undernourished (≤23,5 cm)	26 (26,0)	74 (74,0)	
Blood pressure			
Normal	103 (31,5)	224 (68,5)	
Pre hypertension	61 (26,8)	167 (73,2)	0,301
Hypertension grade 1	2 (40,0)	3 (60,0)	
Hypertension grade 2	2 (66,7)	1 (33,3)	
Number of children ownership			
≤2 children	143 (28,5)	358 (71,5)	0,078
>2 children	25 (40,3)	37 (59,7)	
Education			
Not completed in primary school	2 (40,0)	3 (60,0)	
Graduated from elementary school	23 (37,7)	38 (62,3)	
Graduated from junior high school	35 (27,6)	92 (72,4)	0,723
Graduated from high school	91 (29,3)	220 (70,7)	
Undergraduate	17 (29,3)	41 (70,7)	
Master degree	0 (0,0)	1 (100,0)	
Occupation			
Midwife	0 (0,0)	2 (100,0)	
Teacher	1 (7,1)	13 (92,9)	
Honorary	0 (0,0)	3 (100,0)	
Housewife	154 (30,3)	354 (69,7)	0,302
Private	4 (40,0)	6 (60,0)	
Civil servants	4 (26,3)	11 (73,7)	
Entrepreneur	3 (37,5)	5 (62,5)	
College student	2 (66,7)	1 (33,3)	

Source: Primary data, 2017-2018

Based on the bivariate analysis results (Table 2), several variables used to determine the relationship between mental emotional disorders symptoms and pregnant

women did not produce a significant difference. However, the pregnant woman with mental emotional disorder symptoms, within the age range of 20-35 years shows 71,3% with a p-value of 0,080 having mental emotional disorder symptoms, and 71,5% of mothers with less than two children predominantly experienced mental emotional disorders symptoms with a p-value of 0,078. Blood pressure status from the results of the study showed that there were 68,5% of normal pregnant women also experienced mental emotional disorders symptoms. And only a few pregnant women with 60% hypertension status and 33,3% grade 2 hypertension experienced mental emotional disorders symptoms.

Based on education level, among pregnant women who graduated from high school as much as 70,7% experienced mental emotional disorders symptoms, and for the occupational category, the majority of housewives were 69,7% (Table 2). Based on the results, the presence of children contributes to an increase in total family preparation, family burdens, and expenses. This occurs because the needs of the family also increase with the addition of the number of family members (Sari *et al.*, 2015). The family allocates special expenses for children such as purchasing milk, health care, diapers, toys, safety, and child protection. When the family does not prepare for financial needs adequately, this might put pressure on the mother. In addition, maternal stress is influenced by the father's education, sources of stress, and family expenses for children (Kristiana, 2017).

Table 3. The results of the analysis of the SRQ-20 questionnaire questions

Question items	n	%	Experiencing mental emotional disorder symptoms		p-value	OR
			n	%		
Cognitive symptoms						
It's hard to think straight	128	22,7	123	96,1	0,000	13,0
It's hard to make a decision	225	40,0	214	95,1	0,000	14,6
Anxiety symptoms						
Hard to sleep	329	58,4	280	85,1	0,000	4,8
Fear easily	110	19,5	101	91,8	0,000	5,3
Feeling tense, anxious or worried	249	44,2	235	94,4	0,000	13,8
Depression symptoms						
Hands shaking	159	28,2	153	96,2	0,000	15,1
Feeling unhappy	74	13,1	73	98,6	0,000	33,8
Cry more often	94	16,7	93	98,9	0,000	45,9
Not being able to do useful things in life	118	21,0	112	94,9	0,000	9,4
Losing interest in things	175	31,1	164	93,7	0,000	8,8
Feeling worthless	56	9,9	55	98,2	0,000	24,2
Have thoughts of ending life	32	5,7	32	100,0	0,000	2,3
Somatic symptoms						
Frequent headaches	323	57,4	279	86,4	0,000	5,5
No appetite	317	56,3	274	86,4	0,000	5,4
Impaired / poor digestion	168	29,8	158	94,0	0,000	9,2
Discomfort stomach	288	51,2	73	98,6	0,000	3,8

Question items	n	%	Experiencing mental emotional disorder symptoms		p-value	OR
			n	%		
Energetic decline symptoms						
Find it difficult to enjoy daily activities	230	40,9	216	93,9	0,000	11,4
Daily work was interrupted	238	42,3	221	9,29	0,000	9,7
Tired all the time	240	42,6	233	97,1	0,000	28,5
Tiring easily	330	58,6	279	84,5	0,000	4,4

Note: *1 The number of the general population and the percentage that answered "yes" to the item according to the question number.
*2 Percentage of subjects with positive mental-emotional disorders symptoms (score ≥6) and answered "yes" to the items according to the question number.

Most pregnant women, particularly for the main pregnancy at 8 months of growth, rejoin the guardians or family in anticipation of labor, this adds to the view of high friendly help. In spite of the fact that there is no immediate connection between friendly help and the rate of passionate issues, there are contrasts in low friendly help among pregnant ladies like trouble in deciding (OR=14,6) (Table 3). Low social support increases the risk of developing mental-emotional disorders. This is in line with a prevalence study that reported a high rate of pregnant women without any relation in the community and living in crowded houses which leads to chronic stress or adverse psychological disorders, contributes to psychological distress, unhappiness, irritability, and even suicidal thoughts.

This is supported by the results obtained in this study where a majority of the subjects find it difficult to enjoy daily activities (OR=11,4) and feels unhappy (OR=33,8) (Table 3). Families with psychosomatic grumblings are described by repetitive assurance (overprotection), inordinate association (over commitment), and exorbitant pressing factor (overemphasis) on the job of social consideration support which influences the manifestations of gloom in pregnant ladies (Chappellec *et al.*, 2014). To clarify the impact of social help on physical and psychological well-being conditions, further investigations are expected to decide the existing occasions experienced by subjects as enthusiastic, instrumental, and evaluation support just as data on the nature of connections in the family.

Table 4. The highest five frequency distribution characteristics of question items SRQ-20

Question characteristics	%
Frequent headaches	57,4
No appetite	56,3
Hard to sleep	58,4
Discomfort in the stomach	51,2
Tiring easily	58,6

In pregnant women who experience mental-emotional disorders symptoms, an analysis of the symptoms from 20 questions contained in the SRQ-20 questionnaire was

carried out. The number and percentage of subjects experiencing these symptoms are presented in Table 3 and delivered based on the classification of each symptom. The symptoms that most often occur in pregnant women are tiring easily energetic decline symptoms, hard to sleep anxiety symptoms, and the most common symptoms are somatic symptoms that are frequent headaches, no appetite, and discomfort stomach as described in Table 4 and adjusted for Table 3.

CONCLUSION

The mental and emotional problems in pregnant women can potentially lead to adverse effects, both for the women and the baby. Hence, it is important to address this issue. The present study aims to investigate the prevalence of emotional disorder symptoms in pregnant women. The SRQ-20 was applied with other health measures, which are body weight while pregnant, MUAC, and blood pressure. In addition, questions to assess demographic characteristics were also used. The result of this study shows that there is a high prevalence of mental-emotional disorder symptoms in pregnant women of 72,3%. It is indicated that this prevalence is related to the number of children and the age of pregnant women. In this follow-up analysis, it can be seen that the pattern of symptoms with mental-emotional disorders symptoms in pregnant women mostly experiencing somatic symptoms that are frequent headaches, no appetite, and discomfort stomach.

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CONFLICT OF INTEREST

This study no contain any conflict of interest

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