

Mental Health, Pregnancy and Self – Rated Health in Antenatal Women Attending Primary Health Clinics

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SUMMARY

The purpose of this study was to study the determinants of self rated health in the low – risk pregnant women of Melaka Tengah in Malaysia. A total of 387 subjects were analysed. The role of mental health, psychosocial stressors, support from husband, coping skills, socio-economic status and pregnancy characteristics in determining self – rated health were studied. Health items were taken from the Duke Health Profile. Bad obstetric history, poor mental health, stress from the family were found to be significantly associated with poor self – rated health whereas good support from the husband was related to good self – rated health.

KEY WORDS:

Self-rated health in pregnancy, Mental health, Social health

INTRODUCTION

Self-rated health in pregnant women is an important morbidity predictor as poor self rated health is associated with increased medical care utilization and emergency room visits¹. Many variables influence self – rated health, including mental health, psychosocial stressors^{2,7}, depression, support from husband, coping skills, income and inequality^{8,9}, housing quality², etc. The relative importance of these risk factors can be expected to differ from one population to another.

The purpose of this study was to study the determinants of self rated health and investigate the importance of personal stressors in determining self rated health in the low – risk pregnant women in Melaka Tengah, Malaysia.

MATERIALS AND METHODS

This study was a cross – sectional survey of pregnant women attending the Primary Health Clinics providing basic primary care during pregnancy to women in the district of Melaka Tengah. The study was granted permission by the Director-General of Health Services, Malaysia. We involved six centers of the district of Melaka Tengah – Klinik Kesihatan Ayer Keroh, Klinik Kesihatan Peringgit, Klinik Kesihatan Ujung Pasir, Klinik Kesihatan Batu Berendam and Klinik Kesihatan Ayer Molek. Questionnaires made in both Bahasa Malaysia and

English language were distributed to women who agreed to fill the questionnaire after being explained, in the waiting hall where the women waited for their antenatal review during their routine antenatal visits to the health clinic. Subjects returned the questionnaires after completion. All the women who completed the questionnaire could easily understand the questions in either of the languages and did not require any help. No protected health information was collected. The study was conducted from 1st March 2006 to 15th October 2006.

The dependent variable was overall self - rated health. Independent variables were age, race, parity, gestation of pregnancy, number of married years, housing, socio-economic status, family income, number of people at home, number of children at home, education of the woman, whether pregnancy was planned or not, history of infertility, bad obstetric history in the form of any previous pregnancy loss, presence of any medical complication during pregnancy, mental health, family relationships, sociability, support from husband, stress from family members, self – esteem, anxiety, depression and disability. There were no women in the dataset receiving any medication for any medical illness, as such women were likely to be referred to the higher centre.

Health items were taken from the Duke Health Profile, which was developed by the Family Medicine Faculty at Duke University. The DUKE is a 17 – item scale that addresses physical, mental and social health^{10,11} and has been widely used in various published studies¹²⁻¹⁴.

Self – rated health was measured using the following item: “I am basically a healthy person”. Possible responses were “Yes, describes me exactly,” “Somewhat describes me,” or “No, doesn’t describe me at all.” Mental health was measured in terms of liking oneself (“I like who I am”), coping abilities (“I give up too easily”), difficulty in concentrating and feeling depressed or sad, and nervousness. Social health was measured in terms of being an easy person to get along with, family relationships (“I am happy with my family relationships”), sociability (“I am comfortable being around people”), as well as socializing with other people (frequency of talking or visiting with friends or relatives and taking part in social, religious, or recreational activities like family gatherings,

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meetings, church, movies, in the last one week) for which the possible responses were None, Somewhat, A Lot. Self – esteem score was measured in terms of liking oneself, easiness to get along with others (I am not an easy person to get along with), coping skills, happy with family relationships and comfortable being around people. Anxiety score was measured in terms of being an easy person to get along with, difficulty concentrating, comfortable being around people, frequency of trouble with sleeping, getting tired easily, and nervousness in the past week. Depression was measured in terms of giving up easily, difficulty concentrating, and in the past one week, trouble with sleeping, getting tired easily and feeling depressed or sad. Anxiety - depression score was measured as combination of both. Disability score was measured as stay at home for the number of days in the last week because of pregnancy in the absence of any complication.

All the health items were pertaining to their present pregnancy. Each response to the item was given a raw score and the total score was calculated by adding the raw scores to get a score out of 100. Respondents were asked how supportive their husbands were during pregnancy and in regard to stress, they were asked how much they are stressed by their family members including husband, parents and children. Possible responses were None, Some, A lot.

Age, race/ethnicity (Malay, Chinese, Indian or others), number of married years, housing, socio-economic status, income, number of people at home, number of children at home, educational level of the woman (Primary, Secondary or attended college), were used to control for demographic differences among subjects. Age was categorized as low (16 - 25 years), medium (26-35 years) or high (more than 35 years). Socio - economic status was categorized as low, lower middle, upper middle and high after obtaining scores based on possession of bicycle, car, house, television and radio.

Parity, gestation of pregnancy was categorized in trimesters, whether pregnancy was planned or not, history of infertility, bad obstetric history in the form of any previous pregnancy loss, presence of any medical complication during pregnancy were used to control for differences in the pregnancies among the subjects.

Chi – square tests were used to test for the relationship between each independent variable and self rated health. Variables that were significant at $p < 0.15$ were included in a multiple logistic regression analysis. The significance level of 0.15 was chosen to ensure that the confounding variables were included in the model. The multiple logistic regression model was reduced in a backward stepwise fashion: the variable with the highest p – value was dropped, the model re – estimated, then the variable with the highest p – value was dropped until all variables in the model were significant at $p < 0.05$. SPSS 15 for Windows was used for data analysis.

RESULTS

A total of 395 forms were distributed to the consecutive consenting pregnant women attending the primary

health clinics from 1st March 2006 to 15th October 2006. Eight forms were returned unfilled by women who could not read any of the two languages and were excluded from the sample. The final dataset was comprised of completed forms returned by 387 subjects forming a response rate of 98 percent.

The sample comprised of relatively young women, with only eight percent of women above the age of 35 years, and the majority of women being of Malay ethnicity. Over 56 percent belonged to lower middle class and 69 percent had secondary school education (till Form 3- PMR or Form 5- SPM). Nearly 86 percent reported that they liked themselves. Over 94 percent said that their families were happy. Seventy nine percent felt that they were healthy. Almost 60 percent of women had less than four people at home and 84 percent had less than two children. All the women showed anxiety and depression during their pregnancy, with anxiety and depression ranging from moderate to 'a lot' in 87 percent and 71 percent respectively. Eighty percent of respondents reported no stress from husband or children. Ninety five percent reported husband being supportive during pregnancy. Fifty five percent felt disabled due to pregnancy in the form of restriction of social activities and need to stay at home due to pregnancy in the absence of any medical complication.

The results of obstetric history variables and mental health variables are shown in Table II and III respectively. The frequency of poor self rated health decreased with increasing level of education. Women without 'bad obstetric history' were more likely to report good self rated health. Poor mental and social health scores were significantly associated with poor self rated health. Similarly, presence of some support from the husband during pregnancy was associated with good self rated health. Presence of some stress from husband and children was significantly associated with poor self rated health. Anxiety and depression were directly related to poor self - rated health. Perceived health improved as the anxiety and depression scores went down as depicted in Figure 1. Variables that were significant at $p < 0.15$ were included in the multiple logistic regression model, then variables with highest p – values were deleted stepwise. The final model is shown in Table IV where "Not Healthy" and "Somewhat Healthy" have been combined as "Unhealthy". It shows that bad obstetric history, poor mental health, stress from the family are related to poor self-rated health whereas good support from the husband is related to good self – rated health.

DISCUSSION

Poor mental health is known to be associated with poor perinatal outcomes. Our study shows the prevalence of mental health problems among the pregnant women in Melaka Tengah attending the primary health clinics and the association of various factors with self-rated health. Mental health in pregnant women and their outcome have been reviewed¹⁵⁻¹⁷. A prospective study¹⁵ involving large number of similar low - income pregnant women using questionnaire studying their self-esteem, stress, anxiety and depression shows that the risk of both low

Table I : Descriptive statistics : Demographic variables of antenatal women attending primary health clinics in Melaka Tengah

Variable	Total No.	Total %	Healthy (%)	Somewhat Healthy(%)	Not Healthy (%)	P
Age(Years)						0.3994
16-25	120	31	74.2	21.7	4.2	
26-35	236	61	81.4	14.8	3.8	
>35	31	8	83.9	16.1	0.0	
Race						0.076
Malay	245	63.3	80.4	16.3	3.3	
Chinese	95	24.5	76.8	20.0	3.2	
Indian	19	4.9	63.2	21.1	15.8	
Others	28	7.2	89.3	10.7	0.0	
Housing						0.381
Bungalow / Semi-deluxe	29	7.5	93.1	6.9	0.0	
Terrace	173	44.7	81.5	15.6	2.9	
Apartment	53	13.7	73.6	20.8	5.7	
Kampung (Village)	132	34.1	75.8	19.7	4.5	
Socio-economic status						0.221
Low	24	6.2	75.0	16.7	8.3	
Lower middle	218	56.3	75.7	20.6	3.7	
Upper middle	73	18.9	82.2	13.7	4.1	
High	72	18.6	88.9	9.7	1.4	
Total Income						0.333
<500 MYR	10	2.6	60.0	30.0	10.0	
501-1500 MYR	223	57.6	76.7	19.7	3.6	
1501-5000MYR	142	36.7	83.8	12.7	3.5	
>5000 MYR	12	3.1	91.7	8.3	0.0	
Education						0.002
Primary	35	9	88.6	2.9	8.6	
Secondary	265	68.5	74.7	21.9	3.4	
Tertiary	87	22.5	89.7	8.0	2.3	
Number of people at home						0.809
< Four	232	59.9	79.3	17.2	3.4	
> Four - Six	96	24.8	77.1	17.7	5.2	
> Seven	59	15.2	83.1	15.3	1.7	
Number of children at home						0.538
< Two	324	83.7	79.0	17.9	3.1	
Three	38	9.8	84.2	10.5	5.3	
> Four	25	6.5	76.0	16.0	8.0	
>5000 MYR	12	3.1	91.7	8.3	0.0	

Table II : Descriptive statistics : Obstetric history variables of antenatal women attending primary health clinics in Melaka Tengah

Variable	Total No.	Total %	Healthy (%)	Somewhat Healthy (%)	Not Healthy (%)	P
Married life (Years)						0.698
< 1	123	31.8	81.3	14.6	4.1	
> 1 - 7	187	48.3	78.1	19.3	2.7	
> 7	77	19.9	79.2	15.6	5.2	
Whether Pregnancy Planned						0.862
Planned	280	72.4	80.0	16.4	3.6	
Unplanned	107	27.6	77.6	18.7	3.7	
Parity						0.466
Primigravida	149	38.5	82.6	12.8	4.7	
Second gravida	124	32	76.6	21.8	1.6	
Third gravida	91	23.5	78.0	17.6	4.4	
> 4th gravida	23	5.9	78.3	17.4	4.3	
Trimester						0.27
First	92	23.8	75.0	19.6	5.4	
Second	122	31.5	76.2	18.9	4.9	
Third	173	44.7	83.8	14.5	1.7	
Presence of bad obstetric history						0.032
Yes	45	11.6	64.4	28.9	6.7	
No	342	88.4	81.3	15.5	3.2	
History of Infertility						0.141
Yes	18	4.7	61.1	33.3	5.6	
No	369	95.3	80.2	16.3	3.5	
Medical complication with pregnancy						0.242
Yes	80	20.7	73.8	20.0	6.3	
No	307	79.3	80.8	16.3	2.9	

Table III : Descriptive statistics : Mental health variables of antenatal women attending primary health clinics in Melaka Tengah

Variable	Total No.	Total %	Healthy (%)	Somewhat Healthy (%)	Not Healthy (%)	P
Mental score						<0.001
Poor	33	8.5	63.6	21.2	15.2	
Average	200	51.7	73.5	22.5	4.0	
Good	116	30	89.7	9.5	0.9	
Best	38	9.8	92.1	7.9	0.0	
Social score						0.002
Poor	12	3.1	41.7	50.0	8.3	
Average	98	25.3	71.4	21.4	7.1	
Good	192	49.6	82.3	15.1	2.6	
Best	85	22	87.1	11.8	1.2	
Self esteem						<0.001
Poor	4	1	50.0	25.0	25.0	
Average	123	31.8	65.9	26.0	8.1	
Good	164	42.4	84.8	14.0	1.2	
Best	85	24.8	88.5	10.4	1.0	
Disability due to pregnancy						0.993
Not disabled	172	44.4	79.1	16.9	4.1	
Somewhat disabled	132	34.1	79.5	17.4	3.0	
Disabled a lot	83	21.4	79.5	16.9	3.6	
Support from husband						<0.001
No support	1	0.3	81.5	14.9	3.5	
Some support	18	4.7	33.3	61.1	5.6	
Good support	368	95	100.0	0.0	0.0	
Stress from family						<0.001
Lot of stress	19	4.9	68.4	26.3	5.3	
Some stress	58	15	60.3	37.9	1.7	
No stress	310	80.1	83.5	12.6	3.9	
Anxiety						0.001
Mild	44	11.4	100	0	0	
Moderate	179	46.3	86.1	12.0	1.9	
Lot	158	40.8	77.1	20.1	2.8	
Maximum	6	1.6	61.4	25.0	13.6	
Depression						0.029
Mild	61	15.8	100.0	0.0	0.0	
Moderate	246	63.6	86.1	11.1	2.8	
Lot	72	18.6	79.7	17.9	2.4	
Maximum	8	2.1	67.2	23.0	9.8	
Anxiety - Depression						<0.001
Mild	38	9.8	100.0	0.0	0.0	
Moderate	244	63	84.7	12.2	3.1	
Lot	98	25.3	79.9	18.0	2.0	
Maximum	7	1.8	57.9	26.3	15.8	

Table IV : Unconditional logistic regression of self-rated health in antenatal women attending primary health clinics in Melaka Tengah

Variable	Healthy (n)	Healthy (%)	Unhealthy (n)	Unhealthy (%)	Odds Ratio	95% Confidence Interval	P
Presence of bad obstetric history							
No	278	71.9	64	16.5	1		
Yes	29	7.5	16	4.1	2.4	1.2 - 4.7	0.0087
Mental Health							
Best	35	9	3	0.8	1		
Good	104	26.9	12	3.1	1.3	0.4 - 5.0	0.6584
Average	147	38	53	13.7	4.2	1.2 - 14.3	0.0131
Poor	21	5.4	12	3.1	6.7	1.7 - 26.4	0.0033
Support from husband							
Good support	300	77.6	68	17.6	1		
Some support	6	1.6	12	3.1	8.8	3.2 - 24.3	< 0.001
No support	1	0.3	0	0			0.6341
Stress							
No	259	66.9	51	13.2	1		
Some	35	9	23	5.9	3.3	1.8 - 6.1	< 0.001
A lot	13	3.4	6	1.5	2.3	0.9 - 6.4	0.0907

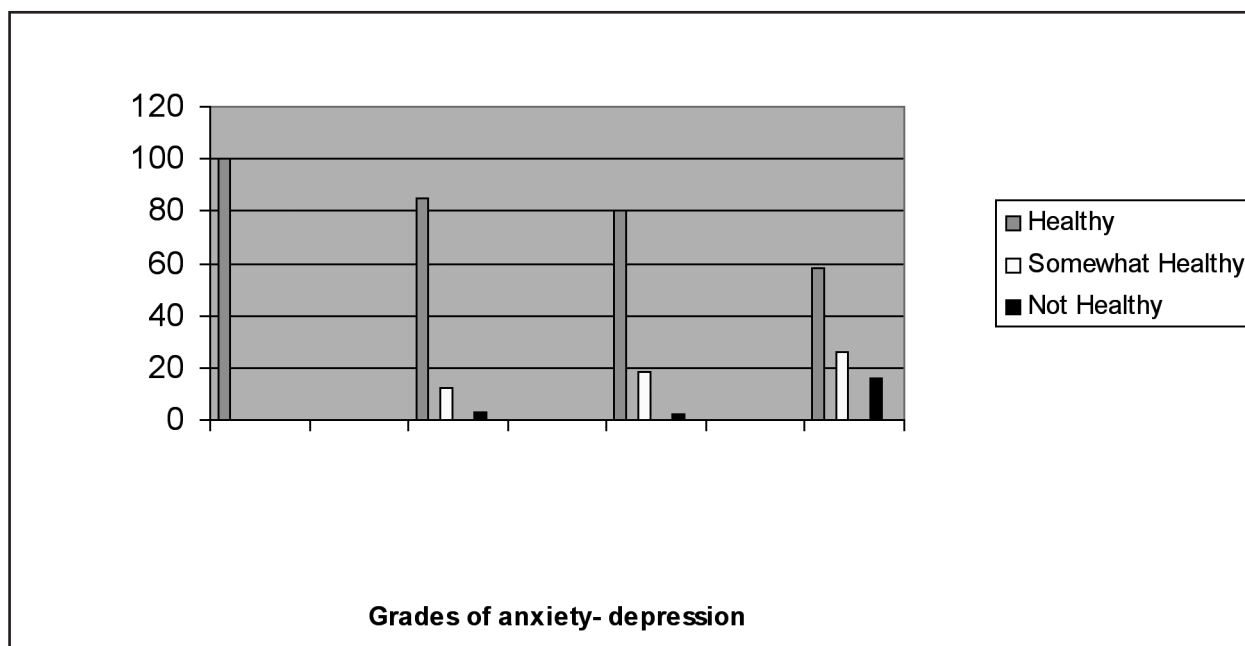


Fig. 1: Association of anxiety-depression with perceived health in antenatal women attending health centres in Melaka Tengah

birth weight and preterm delivery was 40% higher and the mean birth weight of infants was significantly lower in women with lower psychosocial scores whereas other authors¹⁶ have concluded that high prenatal anxiety might be an adverse risk factor for postnatal well-being of mothers as well. A cross-sectional study¹⁷ of women receiving prenatal care in a community and university-based setting has also reported that women with depressive symptoms had significantly lower health-related quality of life scores and thus recommended early identification and management of depressive symptoms in pregnant women which may improve their sense of well-being.

Although, pregnant women suffer from mental health problems, they seldom get detected in routine obstetric clinics. We detected this disability in our study and found that 21 percent felt either somewhat healthy or not healthy at all. Over 79 percent were mild to moderately depressed and more than 20 percent were depressed a lot. Similarly, others¹⁸ have found in screening surveys in obstetric clinics that most women with current major depressive disorder remain untreated and thus point to the need for effective detection techniques. Studies¹⁹⁻²¹ in low-income, ethnically diverse patients with self-administered questionnaire have found that a high percentage of disadvantaged pregnant women meet screening criteria for psychiatric disorders when screened during prenatal visits. Smith *et al.*¹⁹ found that among pregnant women receiving prenatal care at obstetric clinics, clinicians detected minor and major depressive disorders in only 12% who showed evidence of suicidal ideation. All women who screened positive for major or minor depression in obstetric clinics were the

ones who had received or were currently receiving treatment outside the prenatal settings. They concluded that the detection rates for depressive disorders in obstetric settings are lower than those reported in other primary care settings. Those with positive screens for either anxiety and/or depression are reported to have significantly higher levels of functional impairment as observed in a study²². Only 29.4 percent of the subjects with positive screens reported having discussed an emotional issue with their obstetrician, although 82.4 percent said that they would be willing to do so. All subjects (100 percent) reported that they would see a mental health professional if their obstetrician referred them. Thus, a substantial number of women treated in obstetrics have unrecognized and untreated psychiatric disorders. Given the potential impact of antenatal mental disturbances on maternal and infant outcomes, further investigations into the psychiatric evaluation and treatment of pregnant women in the obstetrical sector are required.

In our study, most of the demographic variables were not related to self-rated health, except for the educational status. Similar to our study, Stewart *et al.*²³ after studying ethnically diverse pregnant women using multiple regression, found that education, material deprivation, and subjective social standing were independently associated with self-rated health. Though authors²⁴ have reported subjective socio-economic status to be significantly related to self-rated health among all ethnic groups comprising White and Chinese American women, African American women and Latinas, we did not find significant association of socio-economic status or household income with self-rated health. This could be because of the

population recruited exclusively from primary health clinics in our study as compared to theirs. Thus, the perception of good health in our population depended more on the educational status rather than the socio-economic status.

In our study, almost all the mental health variables were associated with self-rated health. Our study differs from some other studies of self – rated health by its inclusion of personal stress and social support as well as a variety of mental health measures. Because we found that liking oneself was significant, this study sheds new light on the determinants of self – rated health. Sayil *et al*¹⁶ after studying pregnant women from university hospitals and birth clinics, found that lower maternal income, self-esteem and self-efficacy were significantly associated with prenatal maternal anxiety. Findings indicated that prenatal high anxiety might be an adverse risk factor for postnatal well-being of mothers. We too found self – esteem and high anxiety associated with poor self-rated health. Cannella *et al*²⁵ has reported that social support is related positively to perceived health status, and perceived health status was related positively to positive health practices. This finding is similar to our study where we found social scores positively related to perceived health. Thus, social isolation can be regarded as an important risk factor. We suspect that stress and social support might be more important in other groups than it is among younger women, which formed the majority in our study.

Most of the obstetric variables including the planning of pregnancy or gestational age were not associated with self-rated health, except for the presence of bad obstetric history which was associated with poor perceived health. Thus, presence of bad obstetric history in the form of previous pregnancy losses can have a negative impact on the perception of health.

The perceived high prevalence of mental problems in our population requires the need to implement several measures to reduce their prevalence and its negative impact. Though, we have not studied the efficacy of such measures in our study, others show positive results. Geary *et al*²⁶ indicated strong community need for primary mental health services for low – income pregnant women (particularly for depression), health promotion, wellness information and primary mental health care. Low-cost mental health services were identified as the most significant need.

One report²⁷ did not show a direct association between depression in mothers and maternal-fetal attachment. Others²⁸ have identified non-psychotic affective disorder in more than 43 percent of pregnant women using a self-reporting questionnaire. They found that intervention in the form of ten - weekly two-hour meetings, addressing the link between mother and fetus and answering mothers doubts significantly improves mental health. Non-psychotic affective disorders were found only in 22 percent of pregnant women after intervention. Bullock *et al*²⁹ provides evidence that a telephone social support intervention is feasible and highly acceptable to a group of low - income pregnant women. Through the use of the

telephone, a strong rapport appeared to develop between the health care provider and the women because nonverbal cues were eliminated. Thus, collaboration between mental health nurses and prenatal care providers could help create safe, cost-effective psychosocial care for pregnant women and is one of the ways to deliver social support to low – income women who may have little or no social support and feel alienated in a clinical setting.

Bastani *et al*³⁰ found that there were significant reductions in anxiety and perceived stress in the experimental group receiving applied relaxation training as compared with the control group in a randomized controlled trial. Teaching relaxation techniques could serve as a resource for improving maternal psychological health.

There are some limitations to this study that should be considered. Since the study was cross – sectional in design, using a convenient sample, the findings may not be representative of the population from where it was drawn, and causal relationships cannot be established. This project did not address work - related stress. Further investigation of the relative importance of family stress, job stress, and self esteem in distinctly different populations is needed.

Nevertheless, the size of the sample is adequate, the participation rate was good, and the hypotheses tested were innovative. Therefore, the results are important to epidemiologists and others who study the determinants of self rated health of pregnant women in the community.

CONCLUSION

There is need to address the perceived mental disorders in pregnancy through effective screening tools so that intervention through psychotherapy can be attempted.

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