Demo-socioeconomic, obstetric variables, perceived stress and health-related quality of life among pregnant women in Macao, China

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Background

- The physiological and psychological changes which occur during pregnancy are conspicuous and profound.
- There is a wealth of evidence to confirm that a range of different processes emerge and interact during this critical period of time which may jeopardize maternal physical and psychological functioning (DiPietro et al., 2005).

Background 2

- Stress is an integral part of life and it can serve as motivation or, in excess, interfere with daily performance, sleep, appetite and mood (Canals-Gonzales et al., 2008).
- Research suggests that a strong positive relationship exists between stress and the acceptance of pregnancy and the baby, and preparing for labor and parenthood (Pillitteri, 2009), adverse birth outcomes (Hobel et al., 2008), and a decrement in mental ability in toddlers aged 14-19 months (Bergman et al., 2007).

Background 3

- Health-related quality of life is one aspect of this construct (Salter et al., 2008), and concerns the effect of an individual's health status on his or her subjective physical, mental, emotional and social well-being.
- Research shows that physical functioning as a dimension of quality of life decreases during normal pregnancy (Clarke and Gross, 2004; Forger et al., 2005).

Research Questions

- What are the demographic, socioeconomic and obstetric factors associated with higher levels of perceived stress?
- Are women who experience lower health-related quality of life during pregnancy likely to have higher levels of perceived stress?

Methodology

- It was prospective, cross-sectional, comparative and quantitative.
- A pilot study with 100 subjects in similar setting.
- Cronbach's alpha coefficient and the two-week test-retest reliability of the two scales for the pilot study were shown to be satisfactory (ranging from 0.79 to 0.89).

Study Sites

- The research setting was an outpatient clinic in a university-affiliated hospital, S. Januário Hospital, in the Macao Special Administrative Region (SAR)

Exclusion Criteria

The exclusion criteria included:

(1) did not supply written informed consent,

(2) carrying an abnormal baby,

(3) personal and family history of psychiatric problems,

(4) complicated medical problems,

(5) severe obstetric complications and

(6) being non-Chinese.

Measures in the study

Measures	Purposes
Part 1: Demographic, socioeconomic and obstetric characteristics	Potential confounders: Demographic, socioeconomic and obstetric characteristics based on previous evidence
Part 2: Perceived Stress Scale (PSS) : ➢ 14 items	To measure the degree to which situations in one's life are appraised as stressful (Cohen et al., 1983). The PSS items are designed to tap the degree to which respondents find their lives unpredictable, uncontrollable, and overloading.
Part 3: SF-12 Health Survey (SF-12): ➢ 12 items	To measure health-related quality of life (HRQOL) using the standard which is used to assess physical and psychological aspects of quality of life (Ware et al., 2005).

Sample Size

- Assuming the prevalence rate that was found in a previous study (Glynn et al., 2004) ±1.98% a sample size of 1000 would achieve a low error factor (Altman, 2006).
- A community sampling with a sample size of 1151 antenatal women was used, which is considered adequate for the detection of stressed women.

Data analysis

- The SPSS/PC 16.0 software package.
- A multiple linear regression model was used to explore the potential variables.
- The variance inflation factor (VIF) was used to analyze the magnitude of multicollinearity, with VIF < 5 set as the acceptable level (O'Brien, 2007).
- The coefficient of determination, R^2 (explained variance), was used to assess the goodness of fit of the multiple linear regression model (Cohen and Cohen, 2003).

Table 1 Demographic, socio-economic, obstetric, health-related quality of life and perceived stress scale of the participants (n=1151)

Demographic and Socio-economic characteristics		n	%
Age	> 25	804	69.9
	≤ 25	347	30.1
Marital status	Married	1048	91.1
	Single/divorced/separated/cohabited	103	8.9
Educational level	> Secondary	514	44.7
	≤ Secondary	637	55.3
Occupational status	Full-time / self-employed	898	78.0
	Housewife / part time / unemployed	253	22.0
Daily working hours	≤ 10 hours	1117	97.0
	> 10 hours	34	3.0
Family total monthly income§	≤ MOP$10000 (~ US$1420)	1002	87.1
	> MOP$10000	149	12.9

Table 1 Demographic, socio-economic, obstetric, health-related quality of life and perceived stress scale of the participants (n=1151) Con't

Obstetric characteristics			
Number of babies (Parity)	*M(SD)*	1.95 (1.11)	
Number of abortion	*M(SD)*	0.43 (0.74)	
Antenatal care†	≤ First trimester	854	74.2
	≥Second trimester	297	25.8
Past adverse obstetric	No	1045	90.8
complication	Yes	106	9.2
Present obstetric complication	No	1024	89.0
	Yes	127	11.0
Intention of pregnancy	Planned / natural	834	72.5
	Accidental / unintended	317	27.5
Stress level			
Perceived stress scale	*M(SD)*	24.83 (6.81)	
Health-related quality of life			
Physical health	*M(SD)*	40.51 (7.08)	
Mental health	*M(SD)*	45.85 (9.42)	

Table 2 Multiple linear regression model of demo-socio-economic, obstetric characteristics and health related quality of life on perceived stress scale among Macau pregnant women (n = 1151)

	B	Std. Error	ß	Sig.
Demo-socioeconomic characteristics				
Age ≤ 25	1.274	.410	.085	.002
Single/divorced/separated/cohabited women	1.605	.612	.067	.009
Educational level ≤ Secondary	1.081	.366	.079	.003
Daily working hours > 10 hours	4.155	.997	.102	<.001
Obstetric characteristics				
Antenatal care ≥Second trimester	1.031	.389	.066	.008
Unplanned pregnancy	.959	.389	.063	.014
Health-related quality of life				
Physical health component	-.362	.018	-.501	<.001
Mental health component	-.111	.024	-.115	<.001
R^2		.354		
VIF		1.013 – 2.656		

Discussion

- ***Demo-socio-economic characteristics and perceived stress***
  - younger
  - lower educational attainment
  - single, separated, divorced or cohabiting
  - longer working hours (>10 hours per day)
- ***Obstetric characteristics and perceived stress***
  - unplanned pregnancy
  - late antenatal care

Discussion 2

- ***Health-related quality of life and perceived stress***
  - Our findings showed that women had higher perceived stress when they experienced impairment of their mental and physical health-related quality of life.
  - Characteristics of poor health-related quality of life include poor functional status, fatigue, loss of energy, depression, anxiety, limitation in work or activities and performance difficulties (Ware et al., 2005), which could account for the lack of initiative of women so affected to share feelings with or seek pragmatic help from others.

Discussion 3

- The direction of causality between the two variables is not clear. It could easily be argued that perceived stress predates health-related quality of life.
- A possible explanation may be related to the limitations in physical activities and role functioning, cognitive impairment and negative perceptions of health of stressed women compared to non-stressed women, all of which may be linked to stress.
- It can impair the functioning of the immune, endocrine and autonomic systems (Segerstrom and Miller, 2004) and thus increase the likelihood of further impairment of stressed women's health-related quality of life.

Implications to practice

- The development of a checklist or structured questions for clinical situations is necessary to detect the high-risk group, with items measuring demographic, socioeconomic, obstetric and health-related quality of life variables.
- Design educational programs to be promoted in the media to increase the awareness of stress management during pregnancy, and conduct relaxation training for the management of perceived stress (Bastani et al., 2005) to lessen their stress.
- The enhancement of health-related quality of life, with improved vitality, less bodily pain, fewer role limitations caused by physical health and greater social functioning

Limitations

- It may have overlooked a number of other variables, such as the quality of family relationships and social networks or support groups.
- The relationship between these variables cannot be tested adequately with the present cross-sectional research design, and can only be addressed through a longitudinal study.
- This study's convenience sampling and collection of data in a governmental setting limit the generalizability of the results.

Conclusion

- The present study was undertaken as a preliminary investigation and thus the findings should be interpreted with caution.
- To acquire a more complete understanding of the mechanisms that determine maternal stress perception, further studies of the psychological and sociological bases of activity during pregnancy are required.

Thank you very much for your attention!

Welcome to Macao