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Depression among Post-natal Women - Ante-natal Risk Factors for Post-natal Depression in Chinese Women

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Thank you Dr. Lo and Kimmy for the kind invitation. Today my talk is about depression among those post-natal women in respect of depression in Chinese women. I would like to share with you a research paper performed by me and also my colleagues on ante-natal risk factors for post-natal depression, a prospective study of Chinese women at Maternal and Child Care Centres in Hong Kong.

Overseas and local epidemiological studies revealed that 10 to 15% of recently delivered women were affected by post-natal depression. Post-natal depression has a special impact on the quality of life and social functioning of the mother as well as the emotional and cognitive development of the newborn child. Post-natal depression can affect maternal wellbeing and in extreme cases can result in maternal suicide and also it can cause infant harm and also infanticide (Figure 1). It will adversely affect maternal child caring ability and also it can cause marital discord and it can adversely affect mother-infant relationship and subsequent child cognitive and emotional development. The most important is that post-natal depression is actually preventable and also treatable and reversible and with early detection and treatment about 80 to 90% of women can have a full recovery from that post-natal depression.

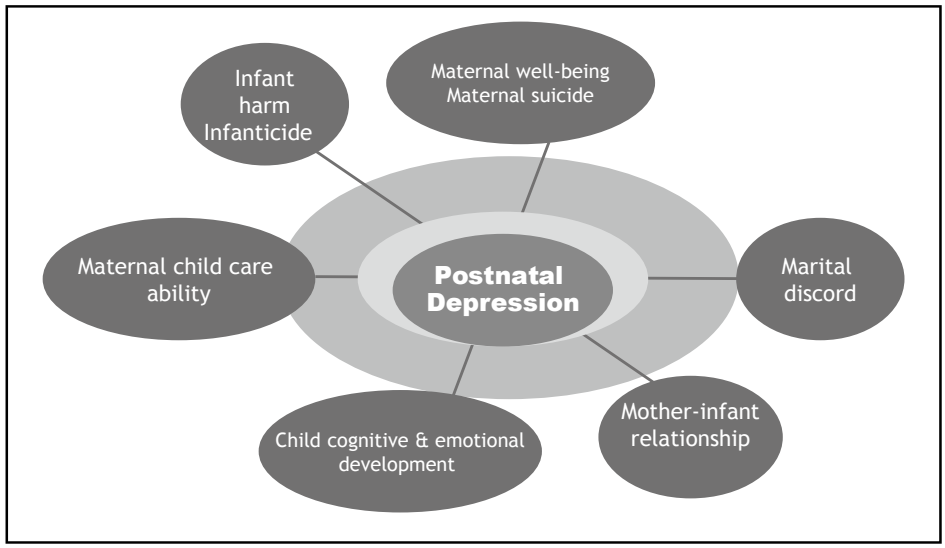

Figure 1: Effects of postnatal depression

Transcript of Plenary Session (II) of 60th Anniversary Symposium on Mental Health on 9th December 2014.

Comprehensive Child Development Service

In Hong Kong the implementation of the Comprehensive Child Development Service (CCDS) serves the purpose of identifying post-natal depression early at Maternal and Child Health Centres where post-natal women are screened for post-natal depression with a Chinese version of the Edinburgh Post-natal Depression Scale - EPDS. EPDS is actually a questionnaire with ten items with a total score of 30 and a higher score indicates a higher probability of having post-natal depression.

The screening programme of post-natal depression is actually backed up with a multidisciplinary team (Figure 2). For women with EPDS score which falls into the range of 10-to-12, they will be managed by staff of the Maternal and Child Health Centre. Those women with an EPDS total score equals to or larger than 13, or with a score more than or equal to 1 on question number 10 which is actually assessing the women's suicidal risk, would be referred to the CCDS psychiatric nurse directly and the women would be referred to psychiatrist by the psychiatric nurse if indicated.

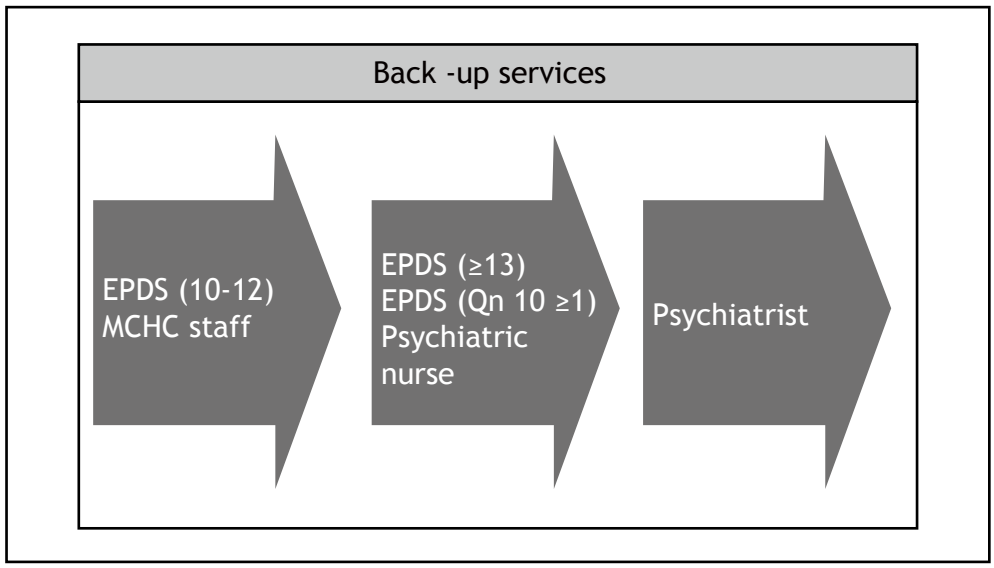

Figure 2: Screening of PND

In order to identify post-natal depression early, apart from implementing a screening programme with the use of the EPDS, it is actually important to look for the risk factors of post-natal depression so that women with these risk factors are monitored more closely. There is increasing recognition of the importance of identifying predictive factors during the ante-natal period for post-natal depression. While searching for literature at the commencement of this study we actually found research in overseas settings which indicated different risk factors can be associated with post-natal depression. For example, personal vulnerability or personality traits such as neuroticism, previous history of psychiatric illness, family history of psychiatric illness and psychological disturbance during pregnancy, may lead to depression in the post-natal period.

Other factors that can contribute to the development of post-natal depression include social factors such as unplanned pregnancy, low income, younger age, primigravida; family factors such as single parenthood, marital discord, poor parental relationship; life events

which occurred in the year immediately before the birth and also undesirable life event; hormonal factors; baby factors such as low birth weight of the baby, infant ill health, female sex of the baby and absence of breast feeding. In fact, there were inconsistent results in literature concerning the risk factors for post-natal depression.

For local studies, we can only find two representative studies at the commencement of our study. These two studies were performed by Professor T. S. Lee. The first study was performed in 2000 and he found that the risk factors for post-natal depression were, for example, depression during pregnancy, prolonged post-natal blues, financial difficulties, past psychiatric illness, spousal disappointment with female gender of the new born, and history of abortion.

In 2004 Lee and his colleagues performed another local study and they found that the factors independently predicted post-natal depression were conflict with mother-in-law, marital dissatisfaction, past depression and ante-natal depression. He also found that the cultural practice of *Peiyue* which is a Chinese post-partum custom of mandated family support was associated with a better social support and a slightly lower risk of post-natal depression.

Local studies for exploring ante-natal risk factors for post-natal depression are very scarce and we aim to identify risk factors for post-natal depression in a community sample of Chinese women with particular focus on risk factors during the ante-natal period.

A Prospective Cohort Study on Ante-natal Risk Factors for Postnatal Depression

This is a collaborative study of the psychiatric units of the Hospital Authority of Hong Kong with the Department of Health (DH) and we have sought for ethic approval for the conduction of this study. Psychiatric units under the Hospital Authority of Hong Kong with CCDS service collaborated with the DH to conduct the study and the clusters for the conduction of the study were the New Territories West Cluster, Kowloon East Cluster and Kowloon West Cluster. We recruited patients at nine Maternal and Child Health Centres (MCHCs) in different districts.

A convenient sample of Chinese women aged 18 to 50 attended the nine MCHCs for routine ante-natal assessment at their third trimester of pregnancy during the period from 1 August 2009 to 31 August 2010 was recruited. We had excluded those who were leaving Hong Kong within six months of delivery and we had obtained the written formal consent from the participants for the conduction of the study.

This was the prospective cohort study and participants were interviewed twice by semi-structured questionnaires and were asked to complete self-reported questionnaires as well. For the first interview it was conducted by a psychiatric nurse at the MCHCs with the participants during their routine ante-natal assessment in their third trimester. During the first interview social-demographic data, clinical data and putative ante-natal risk factors for post-natal depression were collected in a semi-structured manner by a questionnaire. The putative ante-natal risk factors collected in the first interview included age, employment status, educational level, relationship problems with parents, relationship problems with parents-in-law, whether the woman had any stressful life events during pregnancy, the number of previous pregnancies, deliveries, attitudes towards pregnancies such as unplanned pregnancy, unwanted pregnancy and anxiety-prone personality, history of mental illness and family history of mental illness.

For assessment of putative ante-natal risk factors such as relationship with mother-in-law, no specific assessment tools but Likert measures were adopted similar to those adopted in Lee's study in 2004. For

the assessment of ante-natal depressive symptomatology, the participants were asked to fill in the Chinese version of the Edinburgh Post-natal Depression Scale and the categorisation by Lee for assessment of ante-natal depressive symptomatology in the third trimester was adopted in this study.

The second interview was performed at around two months post-partum at MCHCs and the participants were interviewed by a psychiatric nurse and a psychiatrist in the second interview and the participants were asked for putative peri-natal risk factors for post-natal depression that were not asked for in the first interview by another semi-structured questionnaire.

The presence or absence of putative peri-natal risk factors were asked in the questionnaire and for the assessment for putative peri-natal risk factors such as the mother's attitude towards the gender of the baby, Likert measures were adopted.

Demographic data and clinical data that were collected in the second interview include mode of delivery, whether there were any birth complications, whether the baby had low birth weight, the baby gender, the mother's and father's attitude to the gender of the baby, the stress in child care, partner non-participation in baby care, *Peiyue* support, conflict with mother-in-law on baby care, etc.

In the second interview we also adopted the Chinese version of the Structured Clinical Interview of DSM-IV Axis 1 Disorders (SCID-1) which was conducted to confirm the diagnosis of post-natal depression. Those diagnosed to have post-natal depression by the Chinese version of SCID-1 were asked to fill in the Chinese version of the Beck Depression Inventory (BDI) for the severity of the depression.

We used SPSS to conduct the data analysis and descriptive statistics were used to analyse the socio-demographic and clinical characteristics and the status of post-natal depression at two-month post-partum was used as the dependent variable for univariate and multivariate analyses against putative risk factors. For univariate analysis, the risk of post-natal depression (caseness) according to the presence or absence of the risk factors was assessed and the risk ratios were calculated with 95% confidence intervals.

For multivariate analyses, factors with risk ratios greater than two or with confidence intervals that did not cross one in the univariate analysis were entered into stepwise logistic regression to identify independent risk factor. The adjusted odd ratios and confidence intervals for each significant variable in the final model were calculated.

Results and Discussions

838 women consented to join the study and at the end 805 women were interviewed both ante-natally and post-natally. For those who were not interviewed at the post-natal period, 13 of them refused, and for one of them there was an intra-uterine death, and for another one, there was a neonatal death on day 11 after delivery. There were no differences between those who completed and those who did not complete the study on these variables. Average age of the mother was about 30, and about 21% of them were new immigrants. About half of them were unemployed.

For the mode of delivery, the majority was by spontaneous delivery and 9.8% by emergency Caesarean section. For the gender of the baby, half were males, half were females. There was the presence of *Peiyue* for the majority of participants with their mother being the supporter for the majority of the participants, followed by their mother-in-law. For the feeding method, the majority of them used formula feeding. For the diagnosis of post-natal depression by SCID, we found that 15.7% of the participants were diagnosed

to have post-natal depression with a BDI mean score of 22.6 which indicated moderate severity.

Table 1 showed the risk factors which were significant by chi-square test, that were past depression, ante-natal depression, presence of *Peiyue*, and unsatisfactory marital relationship. Table 2 revealed that only the age of the mother was significantly associated with post-natal depression by t-test with the younger the age of the mother the higher the risk of post-natal depression.

Table 1
Risk factors significant by chi-square

	PND (n= 126)	Non-PND (n= 679)	X2	df	RR (95% CI)	p
Past depression						
Yes	26	39	31.75	1	3.59	0.000
No	100	640			(2.27 – 5.68)	
Marital Relationship						
Not Good	35	23	95.54	1	8.27	0.000
Good	91	656			(5.06 – 13.50)	
Peiyue						
No	22	55	10.76	1	2.16	0.002
Yes	104	624			(1.37 – 3.40)	
Antenatal depression						
Yes	68	94	106.45	1	3.90	0.000
No	58	585			(3.04 – 4.99)	
Relationship with mother-in-law						
Not Good	67	92	105.28	1	3.93	0.000
Good	59	587			(3.05 – 5.04)	
Antenatal life events						
Yes	39	82	29.65	1	2.56	0.000
No	87	597			(1.84 – 3.57)	
Anxiety- prone						
Yes	79	199	52.41	1	2.14	0.000
No	47	480			(1.79 – 2.56)	
Persistent wound pain						
Yes	30	67	19.49	1	2.41	0.000
No	96	612			(1.64 – 3.55)	
Felt stress in child care						
Yes	89	218	66.87	1	2.20	0.000
No	37	461			(1.88 – 2.57)	
Married						
No	16	39	8.08	1	2.21	0.006
Yes	110	640			(1.28 – 3.83)	

Table 2
Risk factors significant by t-test

	PND (n= 126) Mean (SD)	Non-PND (n= 679) Mean (SD)	t	df	P
Age	28.76 (4.85)	30.32 (4.84)	- 3.31	803	0.001

Table 3 revealed the risk factors selected by the stepwise logistic regression. The four risk factors that were found to predict depression independently were unsatisfactory marital relationship with adjusted odds ratio of 6.44, unsatisfactory relationship with mother-in-law, ante-natal depressive symptomatology, and anxiety-prone personality with adjusted odds of 2.27.

Table 3
Risk factors selected by stepwise logistic regression

Risk factor	Unadjusted odds ratio (95% CI)	Adjusted odds ratio (95% CI)	P
Unsatisfactory marital relationship	11.09 (6.27 – 19.62)	6.44 (3.42 – 12.15)	0.000
Unsatisfactory relationship with mother-in-law	7.25 (4.79 – 10.95)	4.74 (2.97 – 7.57)	0.000
Antenatal depressive symptomatology	7.30 (4.83 – 11.02)	4.09 (2.54 – 6.59)	0.000
Anxiety-prone personality	4.05 (2.73 – 6.03)	2.27 (1.42 – 3.65)	0.001

We now come to the discussion part of the study. The prevalence of post-natal depression in this study was 15.7% which was comparable with other studies. The results of this study replicated some of the findings of Lee that marital dissatisfaction, dissatisfied relationship with mother-in-law, ante-natal depressive symptomatology independently predicted depression. However, this study revealed that anxiety-prone personality also predicted post-natal depression independently. Persistent wound pain was found to be a significant risk factor in univariate analysis. This study did not show that spouse dissatisfaction of the gender of the baby contributed any significant risk of post-natal depression. In fact we found that the spouse and also the mother preferred the baby to have a female gender. Also the presence of *Peiyue* lowered the risk of post-natal depression but did not contribute to predict post-natal depression independently in multivariate analysis. We believed that whether the mother had *Peiyue* support or not was not the most important thing but it was the quality of the *Peiyue* support that mattered.

The limitation of this study was that the sample was not a random one. The strength of the study was that it was a community sample and SCID was used as the diagnostic tool for post-natal depression.

Based on the results of this study, it is important to monitor pregnant women with depressive symptomatology, for example with an EPDS score more than 9. Also those with the presence of persistent wound pain need adequate wound care and pain control, and those women with relationship problems with husband and/or relationship problems with mother-in-law warrant close monitoring for the possibility of post-natal depression.