T. Kitamura[a]
S. Shima[b]
M. Sugawara[a]
M.A. Toda[c]

[a] National Institute of Mental Health
[b] Tokyo Keizai University, and
[c] Hokkaido University of Education, Chiba, Japan

Clinical and Psychosocial Correlates of Antenatal Depression: A Review

Abstract

In contrast to the considerable research on postnatal depression, less attention has been paid to that occurring during pregnancy – antenatal depression (AD). However, recent investigations have studied depression among pregnant women not necessarily requiring psychiatric hospitalization but needing psychological support and help. A controlled study showed that the rate of AD was significantly higher than that of depression among non-pregnant women: the reported incidence varies between 4 and 29%. AD was found to be associated with: (1) obstetric factors (first pregnancy, first delivery, and past history of abortion); (2) early experience (loss of father); (3) personality (high neuroticism score); (4) attitudes towards the present pregnancy (perplexity of the husband); (5) accomodation factors (non-detached housing, and expected crowdedness after birth of the child, and (6) social support (low level of intimacy with the husband). Differential effects of these factors in the development of AD are to be studied in future research, particularly in conjunction with investigation of hormonal variables.

Introduction

In contrast to the vast amount of the literature on postnatal depression [1], the incidence and aetiology of the onset of depression during pregnancy – antenatal depression (AD) – is not well-known. Paffenbarger [2] reported a much higher psychiatric hospitalization rate among postpartum women than among non-childbearing controls, but a lower rate among pregnant women. This may give the impression that the latter are more resistant to psychiatric disorders, which may be challenged, however, for a number of reasons [3], e.g. reluctance of the woman, her relatives, or the obstetrician to seek professional help, or a milder nature of the disorder. As noted below, recent studies have demonstrated that pregnant women may be at risk for depression, so that further studies may be warranted [4].

This review examines the incidence of depression during pregnancy, and those psychosocial factors which are considered as potentially causative, excluding depression occurring during pregnancy which had started prior to it.

Incidence of AD

In a follow-up study on consecutive antenatal-clinic patients in a suburban town in Uganda, Cox [5] found that rates of definite and probable diagnoses of psychiatric disorders, detected by the Standardized Psychiatric Interview [6], were 17 and 9%, respectively, compared to 8 and 5% among non-pregnant controls. This suggests that pregnant women are twice as likely to develop psychiatric disorders.

Dr. T. Kitamura
National Institute of Mental Health
1-7-3 Konodai
Ichikawa
Chiba 272 (Japan)

Zajicek [7], studying 120 randomly selected married primiparous women during the antenatal period, found that the prevalence of definite and 'dubious' psychiatric disorders was 14 and 11%, respectively. The corresponding figures for pre-pregnancy psychiatric disorders were 6 and 16%. Another group of pregnant women, selected for their pre-pregnancy psychiatric disorders, showed markedly higher prevalence figures, i.e. 81% for definite and 10% for 'dubious' disorders. Kumar [8] and Kumar and Robson [9], investigating 120 pregnant women, found new episodes of depression or anxiety among 18 women (15%) during pregnancy.

Studying 105 women attending an Edinburgh antenatal clinic, Cox et al. [10] found an AD incidence of only 4%. However, in a similar follow-up study of 128 pregnant women using the Standard Psychiatric Interview, Watson et al. [11] designated 17 women (13%) as cases at some point during the pregnancy; inspection of the data of Watson et al. indicates that the *incidence* of psychiatric disorders was 12% (14/120). Most of their cases were affective disorders. A very high prevalence of psychiatric disorders (29%) was reported by Sharp [12], who used the General Health Questionnaire [13] to identify cases among 179 pregnant women making their first antenatal clinic visit. Using their own definition of 'cases', Martin et al. [14] studied a population of pregnant women and observed the onset of depression in 12% (9/78).

Kitamura et al. [15] in Japan have shown that 16% of women studied experienced a new episode of affective disorder during a 40-week period of pregnancy. Two more women were also found to be suffering from an affective disorder which had started before the pregnancy. This indicates a prevalence of 18%.

Weissman et al. [16] reviewed the findings of the Epidemiologic Catchment Area Project and found that the 1-year prevalence of DSM-III major depression and the lifetime rate of DSM-III dysthymia among women aged 18–44 were 5 and 4%, respectively. Similar findings were reported by Oakley-Browne et al. [17] from New Zealand. In an epidemiological study of women living in Edinburgh, Surtees et al. [18] found that the inception rate per annum of new episodes of Research Diagnostic Criteria (RDC) disorders (mainly depressive and anxiety disorders) was 13%.

The above findings, coupled with the incidence study of AD, indicate that pregnancy is no less stressful than other life events. Thus, if the definition of psychiatric disorder were expanded from that which required hospitalization [as in the study of Paffenbarger, ref. 2] to that which did not require admission or elicit spontaneous complaints, the picture would change. Thus, pregnancy may act as a stressor, at least to a certain group of vulnerable women.

Nevertheless, further replication studies on the incidence of AD are needed with a larger sample size because those cited only examined about 100 subjects in total so far.

Here it should be noted that the concept of AD is not necessarily a nosological entity; it may be simply a kind of depression observed during pregnancy. However, a relatively high incidence and the links with a variety of psychosocial factors may indicate the heuristic value of treating patients with AD as a clinical group.

Obstetric Factors and AD

The diversity of the incidence and prevalence of affective or other psychiatric disorders reported in previous investigations deserves comment. As noted earlier, the lowest incidence of AD [10] is 4%, while the highest incidence of depression or anxiety [8] is 15% and the highest prevalence of psychiatric disorders is 29% [12]. This may be explained by differences in obstetric history, if the incidence of AD is higher among a population with a larger proportion of primiparae. Thus, Cox et al. [10] reported an incidence of 4% among women of whom 37% had never previously experienced pregnancy, whereas Kumar [8], studying women of whom 71% were experiencing their first pregnancy, reported an AD incidence of 15%. Although Sharp [12] did not cite the rate of first pregnancy, more than 40% of the women in that study had no children (the rate of the first pregnancy may be somewhat lower) and the prevalence of psychiatric disorders was 29%. In addition to the first pregnancy, Kitamura et al. [15] claimed that the first delivery (first baby), combined with a previous termination of pregnancy, was another risk factor. These findings may serve as an explanation of the differences in incidence reported up to now. Therefore, future researchers may be advised to report the incidence of AD separately among women with different histories of gravidity and parity.

A low point prevalence of 6% was reported by Cooper et al. [19], who studied 483 pregnant women, 43% of whom were primiparous, using PSE-ID-CATEGO, and defining cases as those reaching the Index of Definition level 5 or higher. This low prevalence among women who were mainly primiparae may be explained by the fact that the PSE covers only psychopathology occurring in the last month, whilst the study of Cooper et al. was carried out in the last trimester. As noted by Martin et al. [14] and Kita-

mura et al. [15], the onset of AD is mainly in the first trimester, so that Cooper et al. [19] may have missed the majority of cases. The fact that the onset of AD is concentrated in the first trimester may be interpreted in terms of its connection with specific endocrinological factors. Although this aspect goes beyond the scope of the present review, which emphasizes psychosocial aspects, it warrants further study.

If pregnancy functions as a major life event, it is readily understandable that AD is more prevalent among women without a past history of pregnancy. It is frequently noted that expectant women become anxious and fearful about the coming birth [7, 20] and that this is more prominent among primigravidae. On the other hand, pregnant women may be less fearful if they have already delivered a baby. A high incidence of AD among primigravidae seems consistent with this suggestion.

An association between AD and past induced abortion was noticed by Kumar et al. [9]. Among women expecting their first baby but having had a previous termination of pregnancy, AD was recognized among 27% [15]. For these women, the current pregnancy may function not only as a source of anxiety and fear, but alos as a reminder of regret and anguish. Nevertheless it may be feasible to hypothesize that an affective disorder during the antenatal period was a factor determining the choice of pregnancy termination.

The literature on psychological aspects of pregnancy termination has mostly focused on the psychological sequelae [21–24]. Almost all of those reports found that the termination had inflicted no major impact on the subsequent mental health of the women concerned. However, there seem to be indications that many of these women were not in good mental health *before* the termination. Studying 132 pregnant women referred for a psychiatric opinion on abortion, Hamill and Ingram [22] reported a markedly high prevalence of psychiatric symptoms: significant depression in 31%, significant anxiety in 19%, suicidal thoughts in 11%, and other psychiatric symptoms in 8%. In a series of women who had undergone termination of pregnancy at King's College Hospital, London, UK, Greer et al. [23] found 30% presenting psychiatric symptoms, the mean score (± SD) of the Hamilton Rating Scale for Depression [25] being 11.7 ± 6.2. Despite the lack of detailed diagnostic information, these findings suggest that pregnant women seeking abortion are very likely to suffer from affective disorders, although more studies with rigorous nosological research are needed. From these findings, one may speculate that a termination of pregnancy is often associated not only with depressive disorders just before the termination, but also with those during subsequent pregnancies, and that AD then functions as a determinant of the termination of the present pregnancy, thus forming a vicious circle. Psychiatric consultation for women considering termination of pregnancy should therefore extend to long-term follow-up. In contrast to termination of pregnancy, miscarriages had no effects on the AD rate [15]. However, Theut et al. [26] maintained that not miscarriage but late perinatal losses (i.e. stillbirths or neonatal deaths) cause unresolved grief during a subsequent pregnancy.

Nausea and vomiting during pregnancy have been studied in psychosomatic gynaecology. Many investigators have examined psychological factors in this disorder, but with equivocal results [27]. Kitamura et al. [15] showed that AD had little association with nausea and vomiting.

Psychiatric Past History and AD

Kumar and Robson [9], Zazicek [7], and Kitamura et al. [15] reported higher rates of past psychiatric disorders among those with AD.

Psychiatric Family History and AD

Evidence has accumulated in support of a genetic contribution to the development of affective disorders [28]. However, most previous investigators studied patient populations that were presumably of moderate or high severity, whereas the inheritance of mild depression or that among a non-patient population has been seldom studied. Investigating the twin concordance of depressive disorders with varying severity, Torgersen [29] concluded that hereditary factors may be important in the development of bipolar disorder and non-hysterical depression, but may play no role in dysthymic disorder or depressive adjustment disorder. Thus, it seems that the inheritance of mild depression among a non-patient population requires extensive further investigation. Studying family history of psychiatric disorders using the Family History RDC [30], Kitamura et al. [15] found a non-significant association between family history of depressive disorder and AD. This may indicate that at least a part of the AD may be related to hereditary factors. Nevertheless, the fact that only a small proportion (3/19 = 16%) of the women with AD had a family history of depressive disorder warns against generalization of the findings.

Early Experiences and AD

Early parental loss due to either death or other causes has often been described as predisposing to depression in adulthood [31–34]. However, the literature is contradictory; evidence that early parental loss is aetiologically linked with later depressive disorders is not consistent. In the study of Kumar et al. [9], childhood separation from the father was significantly correlated with post-natal depression but not with AD; the relationship of early paternal separation with depression in later life may be mediated by many other factors [35]. One of the possible mediators between the two is the parenting pattern of the mother and father [35]. Two instruments have been developed to examine retrospectively the perceived rearing attitudes of parents: the Parental Bonding Instrument [36] and the EMBU [37]. Studying patient populations, Parker [38–41] found that those with neurotic depression reported low care and high protection in their paternal rearing. Scandinavian studies using the EMBU [37] revealed similar findings among depressive subjects [42–44]. Kitamura et al. [15] showed that AD was marginally associated with low paternal care and high maternal protection.

Personality and AD

Correlations with personality, whether pathological or non-pathological, are one of the main focuses of depression research [45]. Studying neurotic and psychotic depressive subjects compared to a normal population, Kendell and DiScipio [46] found that the neuroticism (N) score of the Eysenck Personality Questionnaire [47] was higher among both the neurotic and the psychotic depressive subjects, while the extraversion (E) score was lower only among the neurotic depressive subjects. In accordance with this finding, Davidson et al. [48] found no difference in the N score between neurotic and endogenous depressive individuals. Hirschfeld et al. [49], on the other hand, demonstrated no difference in the N score between recovered depressive subjects and normal controls, but a lower E score among the former.

The results of Kitamura et al. [15] for women with AD support the view presented by Kendell and DiScipio [46] that AD is associated with a higher N score. Furthermore, they described the association of depression with a higher psychoticism (P) score; however, the P score has been little studied in depression research because of its recent entry into the questionnaire. It is of interest that Kumar et al. [9] found correlations of AD with Eysenck Personality Questionnaire neuroticism and psychoticism, but not with post-natal depression.

Attitudes towards the Present Pregnancy

Both the women's and their husbands' attitudes towards the news of the present pregnancy seem important in understanding the aetiology of AD. A simplistic expectation is an association of unwanted pregnancy and depression during pregnancy. It may also be generalized that the subject's perception of the life event (pregnancy) determines the occurrence of the subsequent psychopathology (AD).

About one fifth of the pregnant women (24/119) studied by Kitamura et al. [15] stated that the pregnancy was unwanted, but the relative risk of this factor for AD was less than 2.0 and not significant. Nearly half (57/119) felt perplexed to hear that they were pregnant, yet this again did not differ between those with and those without AD. Lack of correlation between unplanned or unwanted pregnancy and AD in this study is inconsistent with Martin et al. [14], who reported that the pregnancy was unplanned among 71% of women with AD, but only in 20% of normal controls, a discrepancy which is difficult to explain. However, Martin et al. [14] listed the third or later child as a risk variable for AD, while only 7% of women in the study of Kitamura et al. [15] were expecting their third child (none their fourth). Therefore, unplanned pregnancy possibly functions to precipitate AD only among those women with two or more children, whereas among those with no children or only one child, it is the first pregnancy that triggers the onset of AD.

Kitamura et al. [15] found a significant association between AD and the husband's response. If he responded negatively, AD was about threee times as likely to occur. This may be interpreted either as an additive life event or as a lack of social support or intimacy. This issue, and its connection with social support, will be discussed below. The above results suggest that the pregnant women's perception of the pregnancies was more influenced by the affirmation of their husbands than by their own recognition.

Accommodation and AD

Accommodational variables are known to inflict strain [50]. It has been generally accepted that very high residential density (i.e. number of people per unit area) [51–55]

or crowding (i.e. number of people per housing unit) [56–58] may lead to aberrant behaviour or ill health.

Kitamura et al. [15] observed that living in a flat was more likely to be associated with AD than living in a detached house. The living condition of flats is less desirable and more likely to cause discomfort. Housing difficulties are known to be linked with ill mental health [3]. Platt et al. [59], studying 597 households in Britain, found that damp and mouldy living conditions have an adverse effect on physical health, but not on mental health as measured by the General Health Questionnaire. If, therefore, housing conditions function as a risk factor for depression, it is not the physical aspects of the house but the resulting psychosocial aspects that directly affect the mental health of the residents. It is usually understood that crowding itself is not causative, but that the perception of crowding may be. In the study of Kitamura et al. [15], planning to go back to the home of the biological parents (where usually more comfortable living conditions could be expected) and expecting the own house or flat to be crowded after the birth showed a complicated influence on the above association; living in a flat was associated with AD particularly when the subjects did not plan to go back to the house of origin after the birth *or* they felt that their home would be more crowded after the birth. Their perception of crowdedness, or of having no alternative to it during the difficult first few post-natal weeks seems to enhance the association between flat residence and AD. It is therefore speculated that not crowdedness or living density but rather the woman's perception of helplessness mediates the occurrence of AD.

Social Support and AD

Social support is another area of importance in social-psychiatry research [60]. While some believe that lack of social support per se is causative in the development of psychopathology, a more favoured hypothesis is that the existence of such support buffers the subject when facing adverse life events, or that lack of social support enhances the effect of these events on the development of depression and other psychiatric disorders [4, 61–66]. However, the buffer theory of social support has been criticized from a methodological viewpoint [67]. Of many potential sources of social support, the support of a spouse or cohabitant has received special attention; this is often termed 'intimacy' [42, 68–72]. O'Hara [71] showed that depression in the second trimester was associated with less support from a husband, but in the study of Kitamura et al. [15], the effect of intimacy with the husband was only marginal. Its effect appeared marked only in association with a negative response from the husband to the news of the present pregnancy. Thus, the rate of AD was over 60% when a less confiding husband showed a negative response, while it was less than 20% otherwise. Therefore, the presence of a confiding husband possibly buffers the adverse effect of a negative response, or this response possibly works as a precipitant of AD only when coupled with low intimacy with the husband. In the study of Martin et al. [14] the rate of AD was no different between women with and those without intimacy when there were no life events, but when faced with provoking events, the rate of AD rose as high as 76% among those without an intimate relationship with the husband.

It may be concluded that a negative response from the husband is a lack of emotional support when the woman needs it and when it is expected [73]. Women need more support, whether emotional or practical, during pregnancy. Emotional support may be needed more than practical support, particularly in the first trimester, because there is often no area demanding the husband's immediate practical assistance. Brown et al. [61] demonstrated that among working-class women with children living at home, lack of support from a core tie (i.e. a husband or lover, or someone very close) at the time of crisis (i.e. severe life events or major difficulties) was particularly highly associated with an increased risk of depression.

More than a lack of expected or needed emotional support, such a negative response may have functioned as a severe life event. A conflict with the husband may or may not be of minor degree: its effects must be measured in its context. The husband's negative response may have been expressed verbally or non-verbally. However subtle, his comments or gestures in reaction to the pregnancy may have inflicted a severe blow to the wife. If so, it can be speculated that the risk of affective disorder is increased by the first blow of a life event (pregnancy) and further increased by the second blow (e.g. the husband's negative response, possible arguments), only if the woman is exposed to a lack of social support (low intimacy with the husband). The effect of the second life event (the husband's negative response) should be viewed in its association with pre-existing difficulties (low intimacy with the husband).

In a prospective study of 400 women with children living at home, Brown et al. [74] found that either severe events or major difficulties increased the rate of onset of depression during a 12-month follow-up period from 1 to 20%. This rate was only 5% when the woman was faced

with a major difficulty alone but increased up to 46% if the major difficulty was followed by a severe event which was matched with the difficults in the woman's life context. If, however, the event was not thus matched with the preceding difficulty, the rate of onset of depression remained at 7%. In the study of Kitamura et al. [15], lack of intimacy may be underlined by marital difficulties, which were followed by a matched event – negative response from husband – that may be perceived by the woman as severe. In this combination, the rate of AD was dramatically elevated.

Conclusion

The bivariate analyses discussed thus far showed that AD was linked with several independent variables. However, these variables are not necessarily independent. For example, housing difficulties are a major life difficulty and may be explained by many related factors; women living in a flat may have fewer relatives living together, may be far away from their parents or sisters, may have fewer chances to make friends with neighbours, may have more noisy or otherwise difficult neighbours, and above all, have fewer alternatives to improve their housing conditions, which may lead to feelings of helplessness and hopelessness. Literature was inconsistent with respect to the aetiology of neurotic disorders during pregnancy, which may be explained by the heterogeneity of sample populations in terms of risk factors, which may well be interrelated. Many clinicians have noticed that the relative influence of personality, past experiences, recent events, and social ties differs in individual patients with affective disorders. Nevertheless systematic study of the interrelation of these factors has been scarce. Future research should focus on differential effects of psychosocial factors in developing AD, which may help clinicians in the therapy of such pregnant patients.

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