The emergence of social support in the present study as a significant variable predicting postpartum depression is consistent with previous research in the field. These include the major findings of Brown and Harris (1978), Meyerowitz (1970), Paykel et al. (1981), Surtees (1980), and Wenner and Cohen (1968). Little debate exists as to the importance of social support in postpartum adjustment.

The value of this study therefore lies more in the finding that social support was the best predictor variable relative to a number of other variables, which had previously been associated with postpartum depression. No other studies to date have assessed the importance of social support when compared with locus of control, obstetric interventions and birth risk.

It is important to note that the kind of social support measured in this study was that of emotional support as perceived by the subjects. House (1981) has stated that social support is only effective to the degree to which it is perceived. This study appears to lend verification to House's emphasis on the importance of emotional and perceived support in buffering life stresses. Validation is also given to Kaplan and Blackman's (1969) findings of husband, family, doctor and hospital staff as significant network members for postpartum women.
Several researchers have asserted that support is a multidimensional concept (Dean and Lin, 1977; House, 1981; Leavy, 1983). Chalmers (1979) states that social support systems must not merely exist, but must be effective in quality. Thoits (1982) writes that not only is the amount of support important, but also the types of support and the sources of support. She argues that the nature and degree of social support from a variety of support sources must be specified in order to understand how social relationships function to facilitate adjustments to life changes, and what aspects of the support system are the most effective buffers against life changes. It has been stated in Chapter 3.1 that not all social ties are supportive. The conditions under which effective aid is obtained have yet to be determined (Thoits, 1982).

Future research should therefore attempt to locate the roles of instrumental (Caplan, 1981), aid (Kahn and Antonucci, 1980), and esteem (Cobb, 1976) support in postpartum adjustment. More extensive network members should also be included in the focus, and their varying and unique contributions examined. It is likely that social support as a variable predicting psychological adjustment after childbirth, may extend to dimensions beyond those studied.

Finally, the finding of social support as the most important predictor variable in the present study, has implications for
the treatment of postpartum depression. It is suggested that health-care workers pay particular attention to the depressed mother's support systems. An understanding of them may lend valuable knowledge as to some of the causes of her distress, and give some direction as to where the treatment focus should be. Marital therapy is therefore highlighted as a treatment option.

6.2 Obstetric Interventions

No significant independent relationship was found between obstetric interventions and postpartum depression. No prior studies exist with which to compare this result.

Previous suggestions of a link between technologized childbirth and postpartum depression are repudiated by the present finding. Obstetric interventions on their own, do not predict postpartum depression, according to the results obtained in this research. Oakley and Chamberlain (1981) concluded that medical factors influence postpartum depression. However, they selected only a few medical procedures for assessment (viz. epidural analgesia and instruments). Their conclusions are therefore debatable in that they generalize as to the effects of medical factors on the basis of only a few procedures. It seems possible that only specific types of birth interventions may render a significant effect on the development of postpartum
depression. The negative effects of a caesarean section have been well-documented (Affonso and Stichler, 1979; Hausknecht, 1978; Hibbard, 1976; Jones, 1976; Lipson, 1982a, 1982b; Richards, 1978). Other procedures remain unexplored and may yet be shown to significantly correlate with the onset of postpartum depression. However, at this early stage of research, no conclusive global statements asserting that increased obstetric procedures lead directly to postpartum depression, can justifiably be made. Future research should aim at studying different birth methods such as forceps deliveries, vacuum extractions, normal deliveries with and without episiotomies and induced birth, and attempt to identify and compare their varying contributions to depression.

A further suggestion with regards to future research is to evaluate the role of different birth techniques. Such studies should aim at comparing routine hospital deliveries with alternative birth practices, such as the Leboyer method, the Lamaze method, active birth methods (for example, that of Michel Odent) and natural home birth methods. A scientific exploration of such varying birth techniques would lend valuable knowledge to the field and facilitate more accurate predictions as to the effects of differing birth styles on the development of postpartum depression.
The results obtained from the present study need to be questioned in terms of the measurement used. Holmes and Rahe (1967) have stated that the use of objective mean ratings is optimal when measuring the effects of life event stressors. Although this approach has been extensively used in life event research (for example, Holmes and Masuda, 1974), the generalizability of objective weightings assigned to each intervention, as in the present study, is questionable. Also, the weighting of each item may not produce greater predictive benefits (Williams, Ware and Donald, 1981). Consequently, an alternative technique, whereby subjective and normative ratings are applied to each intervention may need to be considered. The perceived desirability and potential strain of each intervention may vary extensively for each woman and thereby render significantly different effects on the development of depression.

Mother's perceptions of interventions may be influenced by a number of factors. These include prior education of childbirth procedures, degree of knowledge concerning the necessity or futility of each intervention, varying explanations as to the indications for each procedure, and finally, differing methods used by obstetricians and midwives in executing these procedures.
The issue of subjective versus objective measurement is frequently discussed in psychological research (Holmes and Rahe, 1967). With reference to the measurement of the effects of obstetric interventions on the development of postpartum depression, it is advocated by the present author that both objective and subjective dimensions be measured. This would facilitate a holistic view of the real effects of obstetric interventions and permit greater predictive accuracy for both the individual and for women in general.

Eicholz (1980) and Wertz and Wertz (1977) have rebuked mothers in the West for their lack of criticalness concerning modern obstetrics. They claim that women are conditioned to technological hospital births, and too readily place themselves at the total discretion of the medical team. However, it is possible that such non-critical acceptance of the obstetrician's knowledge and mode of practice, may in fact buffer the negative effects of interventions. Mothers who demonstrate faith in the medical team may believe that every intervention is being performed in their best interests, facilitating optimal health for themselves and their babies.

Paykel et al. (1980) found that more difficult deliveries were associated with lower postpartum depression levels. They explained these results in the context of social support:
"Perhaps women with more stressful deliveries receive more social support from their spouses, which reduces the probability of depressive symptomatology" (Paykel et al., 1980, p. 460).

The findings of the present study lend confirmation to O'Hara's speculation. Social support was shown to be more important than a difficult delivery in influencing postpartum depression. It is evident that obstetric interventions 'per se' cannot be viewed as stressful without reference to the social and situational context in which the birth unfolds for each individual.

6.3 Locus of Control

Locus of control independently did not account for any significant proportion of the variance of postpartum depression. It can therefore be stated that, according to the present study, the development of postpartum depression cannot be predicted on the basis of a woman's locus of control, be it either internal or external.

This result adds further confusion to the existent conflicting findings regarding cognitive attribution style. Hayworth et al. (1980) and Little et al. (1982) found that women with an external locus of control were more depressed postpartum, while Cutrona (1983), Manly et al. (1982), and O'Hara et al. (1983) found that an internal attribution
style was associated with postpartum depression. These authors have questioned their own results. Chapter 2.2.2(b) describes how they discuss the low correlations found and conclude that no definite causal postulations can be made.

Mischel (1973), in attempting to account for such disparate findings, argues against the measurement of behaviour traits. His rationale is that behaviours are situation specific, claiming that different situations evoke different behaviours. He rejects theories of behaviour traits on the basis that human behaviour varies across the gamut of disparate contexts.

The present study, when evaluated from the perspective of the above argument, has limitations. Locus of control was assessed only within one week postpartum. It is therefore possible that the locus of control, for certain subjects, may have changed from their pre-pregnant and pre-birth states due to the major events experienced at birth. In order to ascertain the precise role of locus of control in postpartum depression, future research should attempt to measure this characteristic at varying time intervals. This would demonstrate possible patterns of change and facilitate greater predictive accuracy. It is therefore suggested that women ideally be tested prior to their first pregnancy, during pregnancy, immediately postpartum and finally, later in the postpartum period.
Future research should also examine locus of control with regards to the birth situation itself, and not simply as a generalized behaviour trait. A comparison between women's expected and real levels of control over birth in relation to locus of control traits, may add greater understanding to the role of locus of control in postpartum adjustment.

6.4 Birth Risk

Birth risk was the third variable which independently explained no significant proportion of the variance of postpartum depression in the present study. Birth risk therefore did not seem to be predictive of depression. This finding is contrary to others in the field. Blumberg (1980), O'Hara et al. (1983) and Smith (1980), all cite research which shows that delivering an infant at risk increases the probability of postpartum depression.

The discrepancy between the present finding and those stated above, is perhaps explained to some extent by varying modes of measurement of birth risk. Blumberg (1980), divided her sample into five graduated levels of risk, reflecting a range of neonatal conditions. These levels were based on an outline presented by Babson, Benson, Pernoll and Benda (1975). The categories included (i) None (ii) Low (iii) Moderate (iv) High and (v) Highest. Assignment to these levels was on the basis of birth weight, gestational
age, delivery and diagnosis. Mothers of infants assigned to levels (iv) and (v) (i.e. high and highest), reported significantly higher levels of depression than the other mothers. Smith (1980) selected thirty mothers of previously diagnosed high risk neonates and compared them with a matched control group. All neonates were in intensive-care units, with diagnoses which included Respiratory Distress Syndrome, Patent Ductus Arteriosus, Small for Gestational Age, Low Birth Weight (1500 grams or less), Asphyxia and/or Low Apgar Scores. Like Blumberg (1980), Smith (1980) also reported a correlation between high birth risk and postpartum depression.

The sample selected for the present study was not a clinical one, incorporating rather, a cross-section of mothers and babies. It is therefore possible that data reflecting high risk births became masked by the majority of normal births. The mean risk score was notably low (M = 5.77; SD = 3.28).

A further discrepancy in method between the present study and those of Blumberg, O’Hara et al. and Smith, lies in the degree of mother’s knowledge concerning the birth risk. In the latter studies, mothers were aware that their babies were at risk. The subjects in the present sample were not told their risk scores. This may have significant implications for postpartum depression. Mothers unaware of risk factors may therefore report less depression.
The problem of objective measurement as discussed with regards to obstetric interventions may be relevant here too. Mothers may perceive the concept of risk in varying ways. It is possible that their subjective perceptions may be more significant than the physical and objective realities associated with an infant at risk. A comparison between mothers' perceptions of infant risk and an objective rating of risk, as used in the present study, may render useful information for predicting postpartum depression.

6.5 Combined Effects of Independent Variables

The final result showed that when all predictor variables were combined, they generated a significant effect on postpartum depression ($F = 6.30; p < 0.0002$). Social support, obstetric interventions, locus of control and birth risk together explained 5.7% of the variance of postpartum depression. However, this percentage is low and caution is advocated when interpreting it.

This small amount of variance is in accord with other studies predicting postpartum depression from a number of independent variables. For example, O'Hara et al. (1982) found that cognitive-behavioural variables accounted for only 4.2% of the variance of postpartum depression. Kahn (1980) reported a variance of 7%, when predicting the effects of support measures on maternal postpartum adjustment. A slightly
higher variance of 13% was found by Lin et al. (1979), when also assessing the effects of social support, marital status, occupational prestige and stressful life events on the development of psychiatric symptoms.

According to Chalmers (1979), the concept of statistical significance, usually utilized as $p \leq 0.05$, means that if a study is repeated, similar findings are to be expected. Statistical significance therefore implies that "the results obtained in any 'statistically significant' study is not attributable to chance occurrences" (Chalmers, 1979, p. 264). Chalmers (1979) states that research concerning the role of life events and psychosocial variables in the development of illnesses is generally limited to explaining only small variance percentages. She further states that it is necessary for researchers not simply to obtain significant findings, but also to explain the large percentage of "unexplained variance involved in the dynamics of illness onset" (Chalmers, 1979, p. 265).

The complexity of human nature renders scientific investigation thereof extremely difficult. The present finding in which predictor variables, although significant, explained only 5.7% of the variance of postpartum depression must be viewed from this perspective. This finding does however, make some contribution to the literature examining the aetiological factors of postpartum depression. Social support, obstetric interventions, locus of control and birth
risk in combination, do predict some part of postpartum depression. Their combined predictive capacity is small and it can be concluded that although significant, these factors alone do not really begin to account for the high prevalence of depression following childbirth. It is also apparent that these factors in isolation, do not explain postpartum depression. Social support is the only notable exception, and this variable only explains 3.7% of the variance of postpartum depression.

The implications of these findings are important for the field, for it seems that the causative agents of postpartum depression are vast and varied. Rizzardo, Magni, Andreoli, Merlin, Andreoli, Fabbris, Martinotti and Cosentino (1985) state that "research into psychosocial factors and disease cannot be limited to the linear relationship between independent and dependent variables, but must take into account the role played by mediating variables, given the complexity of the observed phenomena" (Rizzardo et al., 1985, p. 20). Thus despite the inclusion of four different variables representing the four major current aetiological dimensions (viz. psychological, social, physiological and obstetrical), little explanation of the complex nature of the aetiology of postpartum depression is yielded. It is therefore postulated that an interactive multidimensional model may provide the most appropriate context in which to explain the aetiology of postpartum depression. It is
possible that only when a number of factors are combined, will they reveal a significant understanding of postpartum depression. Such a multidimensional model will facilitate a clearer view of how both main effects and mediating factors interact to contribute to postpartum depression. In Chapter 7.1 a multidimensional aetiological model of postpartum depression is presented.

Future research concerned with the aetiology of postpartum depression should attempt to explore a multidimensional model. Emerging factors of importance may need to be examined independently and in combination if a truly valid and functional model is to be developed. To ensure comprehensiveness in such a model, larger sample sizes, varying social situations and differing levels of pathology need to be assessed. The present sample consisted of a non-clinical population. Although such a sample is optimal in that findings are more relevant to the general population, it may prove fruitful to compare the influence of aetiological agents in both clinical and non-clinical populations.

6.6 Stress Ratings of Obstetric Interventions

Table 3 in Chapter 5.2 shows the mean stress ratings obtained for a number of varying obstetric procedures. No prior studies have attempted to develop such a measure, and therefore no comparisons with the present findings can be
made. Rizzardo et al. (1985) have highlighted the need for the development of a standardized technique for the qualitative and quantitative evaluation of obstetric complications. The development of the Obstetric Interventions Checklists 1 and 2 was an attempt to fill this need in the field. The list included all obstetric interventions, both routine and rare, practiced at the times immediately prior, during and after childbirth.

The highest mean ratings obtained were for "a caesarean section under general anaesthetic" (M = 6.70; SD = 2.95), and for "operative removal of the placenta" (M = 6.70; SD = 2.60). It is interesting to note that both procedures are surgical in nature, and as such, remove control of the birth process from the mother and place it directly in the hands of the medical team. A possible implication of this finding is that mothers prefer to be more active participants in the birth. However, the additional risks, pain and physical discomfort associated with these procedures may have also influenced these ratings. Further high ratings were obtained for "amniocentesis" (M = 6.67; SD = 2.43), "forceps deliveries" (Andersons - M = 6.18; SD = 2.63; Wriggles - M = 5.95; SD = 2.62; Keillands - M = 6.05; SD = 2.66), "vacuum extraction" (M = 6.05; SD = 2.62), "breech extraction" (M = 6.00; SD = 2.61), "Pinnard's breech manoeuvre" (M = 6.05; SD = 2.61), "cervical manipulation" (M = 6.45; SD = 2.50) and "curettage" (M = 6.34; SD =
2.45). These procedures constitute major interventions, and the attribution of high values to them is in accordance with expectations.

It is advocated that obstetricians, birth preparation teachers and hospital staff prepare women adequately with regards to expectations and coping styles. It is further advocated that major interventions be utilized with care and caution and with particular attention to the potentially negative psychological effects they may have on women.

The lowest ratings were obtained for "childbirth preparation classes" (M = 1.67; SD = 1.24), "covering of the infant" (M = 1.61; SD = 1.08), "natural urinary bladder emptying" (M = 1.95; SD = 1.07), "cleaning of the infant" (M = 1.97; SD = 1.03) and "placement of the infant on the mother's stomach" (M = 1.86; SD = 1.04). These ratings are also in accordance with expectations. All are minor interventions of a 'non-risk' nature and all involve some degree of choice on the part of the mother.

Interesting to note are the ratings allotted to "shaving" (pubic - M = 3.07; SD = 2.57, perineal - M = 3.09; SD = 2.81, umbilicus to pubis - M = 3.52; SD = 2.82) and to placement in the "lithotomy" (M = 5.61; SD = 2.94) and "supine" (M = 4.77; SD = 3.08) positions. All are routine hospital practices and represent no additional risks or pain.
However, women attribute a greater degree of intrusiveness and stressfulness to them, than to other higher risk procedures (for example, "X-rays" - $M = 2.60; \ SD = 1.76$).

Of further interest, are the rating weights associated with "placement of the infant on a table" ($M = 3.55; \ SD = 2.77$) or "in a cot" ($M = 3.45; \ SD = 2.17$). These ratings are notably higher than "placement on the mother's stomach" ($M = 1.86; \ SD = 1.04$). It is speculated that mothers prefer more intimate contact with their babies in the birth situation. This result holds significance for hospital obstetric practice, which does not always consider the special psychological needs of the mother herself. Placement of the infant may appear to be a relatively small concern to the medical team. However, these results show that mothers are particularly sensitive to this issue.

In a study comparing women's experiences of vacuum extraction and forceps deliveries, Garcia, Anderson, Vacca, Elbourne, Grant and Chalmers (1985) found that both staff and mothers identified vacuum extraction deliveries as preferable. Forceps deliveries were associated with greater pain and trauma for mothers. The mean ratings obtained in the present study for these interventions do not reflect such a preference. "Vacuum extraction" ($M = 6.02; \ SD = 2.62$) and "forceps deliveries" (Andersons - $M = 6.18; \ SD = 2.63$, Wriggleys - $M = 5.95; \ SD = 2.62$, Keillands - $M = 6.05; \ SD = 2.62$).
2,66) received similar rating weights. A possible explanation of the differences between the findings of the present study and those of Garcia et al. (1985) is that the latter study evaluated mother's perceptions according to physiological stress only, while the present study included psychological stress in addition to physiological stress as a rating criteria.

Jackson, Vaughan, Black and D'Souza (1983) assessed mothers' reactions to the use of a foetal monitor during labour. They reported that mothers found monitoring reassuring rather than worrying, although worry appeared to increase slightly with longer labours. The present findings also show that mothers do not view the use of the foetal heart monitor as highly stressful ($M = 3.23; SD = 2.93$).

It is clear from the present findings that greater consultation with women is needed in order to establish the psychological effects of obstetric procedures. These results suggest that the criteria by which women rate the stressfulness of obstetric practices are not entirely in accordance with the physical necessity, risks or pain associated with them. It is possible that other factors of a more psychological nature may play a role in determining women's perceptions. Such factors may include 'dignity', 'intimacy', 'degree of personal participation', 'feelings of feminity' and a 'desire for closer contact with the infant'.
Further research should attempt to refine and validate the present mode of measurement. In addition, it would be valuable to define in more detail the criteria according to which women accept or reject particular obstetric interventions. It is further recommended that where possible, the medical team respect each woman's personal fears and preferences, and attempt to provide an optimal setting for the major life event that childbirth constitutes.
CHAPTER SEVEN

CONCLUSIONS

7.1 A Proposed Aetiological Model

Chapter 6.5 highlighted the need for a multidimensional aetiological model of postpartum depression. It is evident that independent factors do not adequately explain postpartum depression. The independent variables (viz. social support, obstetric interventions, locus of control and birth risk) assessed in the present study explained only 5.7% of the variance of postpartum depression. It is clear that postpartum depression is a complex and multidimensional condition and is therefore attributable to a vast number of aetiological factors. Consideration of other postulated predictor variables as discussed in Chapter 2 is suggested. Hormonal, psychoanalytic and previous psychological factors need to be incorporated into a multidimensional model. Researchers have examined the variables they consider relevant to postpartum depression, independently of other findings in the field (for example, Blum, 1978; Gelder, 1978; Hausknecht, 1978; Jones, 1976; Little et al., 1982; Surtees, 1980). The inconsistency in the findings may be a result of the fact that unitary variables may not account for sufficient variance to consistently predict postpartum depression. It is therefore meaningless to attempt to
understand the aetiology of postpartum depression in such a reductionist manner, without reference to other factors shown to be important in the field. It seems likely that a greater number of negative occurrences will increase the chances of a depressive reaction in the postpartum period.

Figure 1 shows a proposed multidimensional aetiological model of postpartum depression. The model includes factors shown to be significant in research to date. It is hoped that this model will be of use to future researchers in assessing research needs and in developing a more sound and cohesive theory of the determining factors of postpartum depression.

The proposed interactive aetiological model is shown in Figure 1. Present findings and hypotheses of factors relating to postpartum depression are included in four major dimensions (viz. social, psychological, obstetrical and physiological). A time indication of when each factor is important is included. The time division incorporates pre-pregnancy, pregnancy, birth, 1 week postpartum and 6 weeks postpartum.

The model facilitates the identification of singular or multiple causal factors of postpartum depression, thereby offering an interactive multidimensional perspective. Spaces in each dimension are allocated for other unknown factors which may still be shown to influence postpartum depression.