AN ENCOUNTER GROUP APPROACH TO PSYCHOLOGICAL CARE DURING PREGNANCY

A Thesis Presented in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts in Psychology
at Massey University

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1976

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ABSTRACT.

Pregnancy is seen as a time of psychological change in the normal woman. Supportive antenatal care is beneficial in decreasing stress in the mother and in promoting future mental health in the whole family.

Fifty-two women attending a suburban General Practice at which encounter groups were offered as part of routine antenatal care, were studied during the last trimester of pregnancy with the general aim of providing information necessary for the improvement of antenatal health care services.

A series of questionnaires were completed by the women prior to their being invited to join the encounter groups, and again two weeks prior to their estimated date of delivery. These included the I.P.A.T. Neuroticism Scale Questionnaire, and the use of a semantic differential technique to assess attitudes.

It was found that pregnant women show a much higher level of neuroticism than would be expected in the normal population of women, and this was most marked in multigravidae. The profile was typified. by an increased score on E (submissiveness) component, and a decreased score on the I (tendermindedness) component. These were interpreted as being changes beneficial to the psychological health of the mother.

The most important underlying factor in the attitudes of the pregnant woman was related to the perception of the husband.

Only half of the women had planned their pregnancies, but almost all had a positive attitude towards motherhood. The majority hoped to have their husbands present at delivery, and a large proportion intended to breastfeed.

None of the women had taken full advantage of the methods of preparation for parenthood available to them, and many had not discussed childbirth with their friends or mothers.

The thirty-two women who attended the encounter groups were characterised by higher I (tendermindedness) scores on the N.S.Q., and primigravidae were more likely to attend than multigravidae.

Multigravidae who did attend differed from multigravidae who did not, both on the N.S.Q. and on the basis of their previous obstetric history, having had shorter labours and having produced larger babies previously.

The principal functions of the encounter group were to provide information and companionship, and to increase self-confidence. Members gained maximum reassurance from seeing others return safely with their infants after delivery. The use of groups such as these in training workers in the field of maternal health care to empathise with their patients is stressed.

SECTION I

BACKGROUND TO THE STUDY

> The principal function of all living things is reproduction and other forms of creation. So if there are those who have been wondering if, after all these years, it is still necessary and appropriate to talk about childbirth, and to emphasise the dignity of childbirth as if this were all that life is about, be assured. This is what life is all about. Reproduction should be the most beautiful, the most mind freaking, the most unforgettable, the most heralded and celebrated and sanctified experience of life. (Miller, 1971, pp.85-86).

I. The Aims Of The Study

In the above quotation J.S. Miller expresses the feelings of many parents and many professionals in health care, and the motivation behind the search for really good maternity care.

Pregnancy is recognised as a time of psychological crisis. Conflicts and anxiety are normal features of pregnancy and the manner in which these are resolved can affect not only the physical outcome of the pregnancy, but also the long term mental health of the mother and the child (Caplan, 1961).

The expectant mother, because she is in a state of change, particularly when she is expecting her first child, is extremely open to influence and frequently seeks out help and advice. This affords an extremely valuable opening for preventive medicine in that helping the young woman adjust to her changing role and enjoy the experience of motherhood promotes a healthy family atmosphere for the present child and for her future children.

The value of psychological care being appreciated we must then ask what type of support best meets the needs of the normal expectant mother. The intention of the present investigation is to take some initial steps towards answering this question.

The first aim of the study was to gain some understanding of the feelings and attitudes of the New Zealand woman as she actually

presents at the surgery. Secondly it was intended to look at which women would take advantage of a program focused on the mental health of the mother, and provided in addition to the standard antenatal care. The third aim of this study was to look at the responses of those mothers who do choose to participate in the additional program as they approached delivery.

The maternity patients on whom the research was based were those of Dr. Garth Holdaway, a General Practioner in Palmerston North, who is delivering approximately two hundred maternity patients annually, and who has a special interest in family-centred maternity care.

The present investigation is confined solely to the antenatal period. It is hoped in future to look at the effects of different styles of psychological support on mothers at delivery, in the immediate postpartum period, and over longer periods as the child grows up.

Before discussing the psychological stresses involved in the normal prognancy and the type of antenatal encounter groups being offered in Palmerston North, some of the research looking at the effects of anxiety and social stress in pregnancy and some of the studies that have been made in mental hygiene work with expectant mothers will be considered in the next section.

II. Review Of The Literature

During pregnancy the developing foetus exists in the protective and relatively stable environment of the womb. However, the foetal environment is not completely isolated from outside influence; nourishment must be continually provided and waste products removed and this is accomplished via the placenta and the mother's blood stream. This association opens the possibility of chemical changes in the mother's blood stream affecting the growth and development of the foetus.

Arousal, whether it be due to fear, excitement or other emotion is both a psychological and a physiological state readying the animal for "fight or flight". Selye (1950) has shown the disastrous effects of prolonged stress in man and animals, and much

of the literature concerned with the psychological aspects of pregnancy has been directed towards the effects of a disturbed pregnancy.

Maternal Psychological Stress - Animal Studies.

Thompson and Sontag (1956) were among the earliest workers to hypothesise that since strong emotion may release hormones such as cortisone, adrenalin, and adrenocorticotropic hormone, which if injected into the mother during pregnancy have drastic effects on the foetus, via the maternal-foetal blood exchange, maternal trauma might influence the behavioural development of the foetus. The hypothesis was founded on earlier work by a number of investigators which had looked directly at the effects of noxious agents.

Warkany and Nelson (1942) had shown that riboflavin deficiency in the maternal diet of the rat is associated with skeletal deformities in the offspring, while Vitamin A deficiency causes gross defects to the ocular, cardiovascular, and urogenital systems. (Warkany and Schraffenberger, 1946). Ingalls, Curley and Prindle (1950) had shown that the nature of the malformation was related to the stage of gestation as well as to the particular noxious agent used. In the mouse maternal anoxia was found to produce deformities specific to the day of gestation on which the anoxia occurred. Other investigators had looked for behavioural rather than physical effects from the introduction of such noxious agents. Levinson and Billey (1952) found significant differences in maze-learning ability between offspring of rats subjected to X irradiation during pregnancy, and the offspring of controls. Irradiation on the thirteenth day of gestation produced the greatest behavioural differences. Meier (1954) demonstrated the effects of anoxia at birth on the discrimination learning ability of kittens.

Thompson and Sontag (1956) subjected a group of rats to audiogenic seizures from day five to day eighteen of their pregnancies. The offspring, when compared with those of a control group, were found not to differ in weight, litter size, or activity level, but were significantly slower in water maze learning. The researchers suggested that this could indicate a greater disorganisation of behaviour under stress, as water maze learning represents a stressful situation.

Kaplan and Thompson (1957) investigated the effects of prenatal maternal anxiety by comparing the offspring of five female rats subjected to stress while pregnant with those of controls, cross-fostering being used to control for any post-natal effects. Stress was introduced by the technique of first pairing an electric shock with the sound of a buzzer, escape into a neighbouring cage being possible to avoid the shock. Stress was presumed to occur when the rat was placed in the experimental cage with the escape blocked and the buzzer sounded even though no shock followed.

"Emotionality" in rats is a term describing a group of organic and expressive reactions to strange situations, such as increases in activity, defecation, and freezing behaviour, and a decrease in grooming behaviour. Thompson concluded that experimental and control animals differed strikingly on the measures of emotionality used, and that these differences persisted to a great extent into adulthood, however no conclusion could be made as to how the stress used had had effect.

In addition to effects on the offspring seen after birth, there is good evidence that strong sensory stimuli or severe emotional stress will cause embryonic resorption and still-birth in some mammals. Hockman (1961), using the same technique as Thompson (1957), subjected fifteen rats to stress during pregnancy and compared them with fifteen controls who had also learned the conditionned avoidance reaction prior to mating and were handled but not deliberately stressed during pregnancy. All fifteen controls bore live young, compared with only ten of the experimental group. (The difference is significant at beyond the 5 per cent level). One of the experimental group aborted on day twelve of pregnancy, one rat died on day fifteen, and three litters were born dead. In addition one of the experimental group refused to raise her litter. Prolonged stress is frequently a concomitant of high population density and thus the decrease in the number of live young born would be highly beneficial to the population as a whole and may be interpreted as a homeostatic mechanism.

Maternal Psychological Stress - Human Studies.

At the same time as the studies on animals many researchers have looked at the effects of a disturbed pregnancy in women. In this case, however, stress is not laboratory induced and controlled but is naturally occurring in the day to day life of the mother and many differ in type, strength and duration.

Sontag (1941, 1944) found that mothers undergoing periods of severe emotional stress had foetuses which showed considerably increased activity, and frequently exhibited evidence of an irritable and hyperactive nervous system.

It has long been common belief that severe emotional stress during pregnancy could result in foetal death or malformation, particularly the birth of a mongol child. James (1969) cites research by Ingalls (1947), Klebanov (1948), Stott (1958, 1961), Coppen and Cowie (1960) and Drillien and Wilkinson (1964) relating the occurrence of mongolism to maternal emotional stress or shock during or prior to the first trimester of pregnancy but suggests that, "It seems difficult to reconcile established facts of embryology with the claims made in some of these studies". (James, 1969,p.812) Since the emotional shock can scarely be causal there are a number of possible explanations, firstly the fact that popular belief associated mongolism with shock during pregnancy could have meant that these mothers were more likely to recall and report such shock in order to justify the birth of such a child. Secondly maternal age is known to be an important factor in increasing the probability of mongolism and older pregnant women, or older women who become pregnant may tend to be more subject to shock or stress. Thirdly there is the possibility that the prescence of an abnormal foetus could itself be the cause of emotional stress during pregnancy.

D.H.Stott was particularly interested in the deleterious effects of a disturbed pregnancy and reported a series of studies relating to this topic. In 1957 he reported a study comparing 102 retarded children with a control group of 405 normal children, and he reported an association between illness or stress during pregnancy and non-epidemic illness in the infants during the first three years of life. Where a troubled pregnancy was reported 76 per cent of the

Children suffered from non-epidemic ill health, compared with only 29 per cent of those from mothers with untroubled pregnancies. The association was found in both the retarded children and the control groups which were generally children of above average social standing. Pregnancy trouble was reported preceding the birth of 29 per cent of the boys and 31 per cent of the girls, but the early ill health of the child was almost twice as frequent in boys as in girls. In a following study he found that in reply to a questionnaire sent to 849 parents of "reproduction casualties", which included miscarriages, malformed or weakly infants, children with behavioural disorders, perinatal deaths and mentally deficient children, 39 per cent reported a sudden stress during pregnancy, while only 20 per cent of the parents of normal children did so. (Stott, 1958) He felt that the result of a disturbed pregnancy was very frequently a series of mental and physical handicaps such as warranted recognition as a specific syndrome characterised by early ill health, mental retardation and congenital malformation. He described the predominant temperament in such infants as a lack of confidence, avoidance of response and timidity (Stott, 1959). "The various physical and mental handicaps facilitated by a disturbed pregnancy are part of the 'continuum of reproductive casuality' which results from borderline insult", concludes Stott (1957, p.1011). "Such a continuum would have survival value as a finely adjusted progressive regulator of fertility, it being advantageous to any species to 'shed its load' of offspring in hard times rather than risk starvation of the whole group. If it was mainly the male infants who were to be sacrificed this could be done with the least impairment of the recovery rate when good times returned".

Dodge (1972) found significantly more pregnancy stress, worries, bereavements or serious illness, in the mothers of 101 children with infantile pyloric stenosis, than in 101 matched controls. He concluded that pyloric stenosis may be in part psychologically initiated prior to the birth of the child, again associating a physiological effect with a disturbed pregnancy.

The meaning of phrases such as "sudden stress" are open to interpretation, and in a careful study of a normal population Murphy, Kuhn, Christensen and Robins (1962)

interviewed 101 post-partum women while in hospital concerning the possible occurrence of twenty-seven potentially stressful life experiences within the year prior to delivery. The results which were similar in both frequency and kind for White and Negro women, and for public and private patients, showed that a mean of 2.8 such events had occurred, the range was from zero to eight events, and 89 per cent reported at least one such occurrence.

Whereas the physiological results of stress are observable, stress is itself not observable. A potentially stressful experience may have a traumatic effect on one individual yet pass almost unheeded by another. The effect may also differ in one individual at various times. The solution to the problem of the straw which breaks the camel's back is to be found in the state of the camel's back not in the straw, and the following study illustrates this point. Brown (1962) investigated 148 primiparae, each was interviewed regarding her life experiences and then completed a check-list of bodily symptoms. On the basis of the check-list two groups were defined, being low and high symptoms. (N = 26 and 37, respectively). Brown found no correlation of high or low symptoms with vomiting, pre-eclamptic toxaemia or length of labour, measures relating to the pregnancy, but differences were found in the initial interview responses. Those in the high symptom group appeared as ambitious but constantly under-achieving worriers who failed to relate well to husbands, parents or siblings, and a disturbed pregnancy seemed to be a further component in their typical pattern of responding to life. Those in the low-symptom group seemed less concerned and more accepting both of their pregnancy and of life in general.

Illegitimacy and Social Stress.

A frequent but sometimes fallacious method of assessing the effects of stress in pregnancy is to compare legitimate with illegitimate pregnancies. A particularly ingenious conclusion relating anencephaly to maternal stress was reached by Stott (1962) since anencephaly had been found to be more likely than average in first-born children born in Spring, and as Stott pointed out these were the children most likely to have been conceived out of wedlock. However James (1969) reviews considerable more direct research which shows that in fact there

is an unexplained deficit of anencephaly among illegitimates. Illegitimate births are known to be associated with increased risk to mother and child, but many factors such as the youth of the mother, inadequate antenatal care and poor diet as well as stress may characterise the pregnancy. An interesting technique for isolating the effects of stress in illegitimate births is proposed by James (1969) who calculated the proportion of irregularly conceived pregnancies born within wedlock, (a measure of stress) for each of the Registrar General's Standard Regions in Britain. He found a correlation with the percentage excess of the illegitimate stillbirth rate over the legitimate stillbirth rate for each region, over several years. This study would support the suggestion that maternal psychological stress could be responsible for some of the additional risk.

Maternal Adjustment During Pregnancy.

Death or deformity of the foetus represent extreme effects, and other researchers have concentrated on more subtle effects of poor adjustment to pregnancy.

Coppen (1958) looked at the psychosomatic aspects of pre-eclamptic toxaemia using psychiatric interview; the Maudsley Personality Inventory and anthropometric measures. Fifty primiparae with pre-eclamptic toxaemia were compared with fifty controls matched for age, parity and time in pregnancy. The toxaemics were found to have more disturbed attitudes towards pregnancy and more psychiatric symptoms during pregnancy. High M.P.I. scores were characteristic as were poor sexual adjustment, premenstual tension and emotionally disturbed menarche. Physically their abnormal androgyny score deviated towards the masculine. This study of course relates only to the patients following the onset of toxaemia.

Zemlick and Watson (1953) observed fifteen primparous patients utilising many tests designed to measure anxiety. This was found to be positively related to independent clinical criteria of difficult pregnancy and labour.

Davids and Devault (1962) studied fifty clinic patients in the third trimester of pregnancy again using several measures of

anxiety, the Wechsler Bellevue Mental Anxiety Scale, a Sentence Completion test and the Thematic Apperception Test (T.A.T.). Both the patient and the examiner also rated her anxiety. Following childbirth the women were classified by experienced obstetricians as to childbirth anomalies, yielding two subgroups of twenty-five cases. The women who were to experience complications were markedly more anxious on almost all the scales. An interesting feature of this study was that the only instrument not yielding significant differences was the anxiety self-rating.

In an earlier study Davids and Devault (1960) had used the T.A.T. and Human Figure Drawings to study fifty-three women later divided into a normal and an abnormal group on the basis of hospital records. As predicted, more in the normal group perceived pregnant women in the T.A.T. and drew female figures. This was interpreted as a lesser tendency towards denial. Grimm (1961) adopted this technique and applied it to five carefully matched groups of forty women each seen at a different stage of pregnancy. Each group was proportionally equivalent to the total population seen at the clinic in terms of age, marital status, parity, race, cultural background and previous obstetric complications. The Draw-a-Person and five T.A.T. cards were administered and scored in the following manner;

Draw-a-Person - If a man rather than woman was drawn first this was taken as an assumed tendency towards denial.

T.A.T. Card 2 - If female seen as not pregnant = denial

7GF - Not scored

13MF) Scored 1 if description featuring aggression

18GF)- is forthcoming - scored 0 if a neutral or

18BM) positive description is given -

A total score of 3 or 2 = high tension

" " " " 1 or 0 = low "

Four variables relating to the pregnancy were considered:

1) Weight gain: either above or below average.

2) Length of labour.

3) Complications:105 had no complications, 122 did have complications, these included premature rupture of membranes, precipitate labour (< 3 hours), excessive size of infant (> 4000g),

borderline hypertension or mild pre-eclampsia, use of forceps upon indication of prolonged second stage or foetal distress, breech presentation, cesarean section, spontaneous abortion or premature delivery.

4) Physical status of child: 126 showed no evidence of foetal distress; 101 exhibited varying degrees of foetal distress including nine deaths and one congenital deformity.

It was shown that tension remains fairly constant throughout pregnancy until a significant rise in the last half of the third trimester. The assumed tendency towards denial rose from about 35 per cent to about 50 per cent in the last trimester, again significant at the .05 level. The two "denial" measures did not relate significantly to any of the four variables studied.

There were no significant differences between primiparae and multiparae nor between those with previous gynecological problems, and those without.

The index of tension was positively related to weight gained during pregnancy and length of second stage of labour in multiparae, and there were suggestive results in that those women who had a precipitate labour tended to have lower scores on the tension index and those for whom forceps were used because of lack of progress during second stage tended to have higher scores.

Of a small group of women who had been identified as having extremely high degrees of tension 27 per cent had infants who died or who were deformed compared with 3 per cent for the whole group. This difference is highly significant.

In a later study (Grimm and Venet, 1966), Elaine Grimm devised a pregnancy questionnaire to assess attitudes and emotional adjustment in pregnancy. Following 105 normal women through the entire maternity cycle she found some degree of relationship between early emotional and attitudinal characteristics and emotional adjustment later in the cycle, but none between these characteristics and the physical condition of either mother or child.

Another study following women through the entire maternity cycle is reported by Engström et al (1964) where a series of 108

women were given two psychosocial interviews, one in the first half of pregnancy and one in the second half of pregnancy. Of the forty-two cases rated as negative in at least one interview foetal asphyxia or uterine inertia (the most frequent complications of delivery) occurred in 57 per cent, compared with 24 per cent of the remainder. In addition a negative attitude in the second half of pregnancy was significantly associated with emotionally negative reactions at delivery.

Vomiting In Pregnancy.

Vomiting and nausea are frequently associated with pregnancy particularly in the first three months. A brief history of the attitudes towards this problem is presented by Elizabeth Tylden (1968) who has herself conducted an investigation into the meaning of vomiting in pregnancy. Writers of the nineteenth century and even earlier recognised physiological vomiting in pregnancy. In textbooks of the 1920's and 1930's, hyperemesis, which is vomiting of a degree serious enough to warrant hospitalisation, was classified as a toxaemia of pregnancy and was associated with a significant mortality. It was common practise to terminate a pregnancy for this condition up until 1943, when Sir Arthur Hurst of St.Guys Hospital, London, published a successful case report of an elderly primpara with severe hyperemesis who carried to term twice successfully. In the 1940's the widely held view followed a psycho-analytic approach that a woman who vomited was trying to get rid of an unwanted pregnancy orally and hospital ward attitudes tended to be extremely punitive. Since 1950 attitudes to emesis and hyperemesis have changed and terminations for this cause are now almost non-existent.

The following articles reflect this trend. Robertson (1946) writing in the Lancet reported a clinical study of 100 consecutive cases of nausea and vomiting in pregnancy and concluded that the syndrome may be the physiological expression of an underlying emotional state which may be equalled with that of disgust. He found relevent aetiological characteristics to be disturbed coital functioning, undue mother attachment and to a lesser extent a history of previous dyspepsia. The frequency of undesired coitus and the physical propinquity of the mother were also found to be important.

L.F.Smith (1950) stated that nausea and vomiting of pregnancy were often a symptom of emotional origin due to the subconscious rebellion against pregnancy and to the subconscious desire for an abortion. Cure by psychological treatment designed to release emotional tension was usually easily effected. Conversation with the patient either to explain the psychoanalytic principals of nausea and vomiting in pregnancy or to allow her to talk out her reactions to pregnancy was advocated.

Helen Deutsch (1945) sees vomiting in a slightly different light. She tells us that the difference between spontaneous abortion and induced abortion is that the inducing agent is the psyche although the process is not conscious. Thus vomiting is the reaction of a pregnant woman who has an ambivalent attitude to her child. She has chosen to vomit rather than to miscarry.

Chertok et al (1963) support Deutsch's attitude. They report that in France unmarried mothers rarely vomit, whereas in Switzerland where abortion is more readily available, unmarried mothers do vomit. (No reference is given for this, however.) They also note the result of a study by K. Nordmeyer (1946) finding that of eighty-five women who sought an abortion, not one vomited.

In view of this suggestive evidence Chertok et al set up a study of one hundred primiparous women early in their pregnancy. Attention was limited to consciously expressed attitudes and on the basis of these, the women were divided into three groups. Firstly those who were dearly wanting, and looking forward to their child. Secondly those who unambiguously stated an attitude of rejection towards their child, and thirdly the ambivalent women who were partly pleased and partly annoyed. Vomiting was defined as rejection of stomach contents not merely nausea, and of the hundred women sixty-eight vomited during pregnancy, no cases being severe enough to require hospitalisation.

There was no relationship between vomiting and either clearly defined attitude of wanting or rejecting. These groups were then combined into a single category. A Chi-square test confirmed the positive relationship between vomiting and ambivalence at the .02 level of significance. The authors conclude that vomiting may

represent the expression of a conflict between wanting and rejecting the child, however they recognise that this conflict may find expression in other symptoms.

A possibility not commented on by Chertok et al is that since the investigation was made at the time vomiting was probably occurring, in order that the difficulties of a retrospective study be avoided, it would seem possible that the vomiting itself could be responsible for the ambivalence of women who would otherwise be looking forward to motherhood.

Elizabeth Tylden (1968) reports a study of 238 pregnant women referred to one psychiatrist at the Ante Natal Department of University College Hospital (U.C.H.) between 1951 and 1961.

A control group of 238 patients matched for age, parity and year of delivery were selected from the Ante Natal Department files of the same period, they were not seen directly.

Examination of the control group showed that patients at U.C.H. are not representative of the ordinary population, they are very much "at risk" due to referrals for past obstetrical abnormality or severe physical illness, and also include a large overseas student population.

Subjects were classified as vomiters only if vomiting (not nausea) was clearly recorded in their notes. The overall incidence of vomiting was 33 per cent in both psychiatric referrals and controls. It was no more frequent in unmarried women than in married women. Vomiting was found to be three times more likely in a woman who vomited in a previous pregnancy.

Tylden's first finding was that in patients referred antenatally for anxiety (mainly neurotic) the incidence of vomiting was 48 per cent, but those referrals more seriously mentally disturbed (mainly psychotic) the incidence of vomiting was lower than normal, being 26 per cent. This latter group of patients were mostly post-partum referrals or had been referred ante-natally because of a history of psychiatric breakdown.

Secondly it was found that babies born to women who vomited had a better chance of survival. Perinatal mortality at U.C.H. for

the years under investigation was 3.85 per cent. The psychiatric patients had a perinatal mortality three times that of the controls, and showed a tendency to produce premature and "small for dates" babies. $\chi^2 = 4.68$, $p < .05$

In the 159 women who vomited (patients and controls) there was only one perinatal death. In the 317 non-vomiters there were sixteen such deaths. $\chi^2 = 6.3$, $p < .05$

Babies born to women who vomited were also heavier than the babies of those who did not. This was highly significant ($p < .01$) in the controls but less so in the referrals.

Elizabeth Tylden sees vomiting in pregnancy as a response to stress in particular women which differs from mental illness in that it is protective towards the foetus.

Tylden also presents a study of the forty-seven cases of hyperemesis seen by her over the same ten year period. Their life situations were found to be so atypical that matched controls could not be provided. Comparisons were made with the eighty-four mildly disturbed referrals of the previous survey, 48 per cent of whom were vomiters.

Onset of vomiting in the "anxiety" patients was generally in the first trimester, whereas onset was evenly distributed over the three trimesters in hyperemetics, and sometimes precipitated by a sudden stress such as a death in the family.

The hyperemetics were found to have a history of nearly twice as many serious illnesses (not associated with pregnancy) as the anxiety patients. They had also encountered more major social stresses.

The incidence of previous pregnancy loss in the normal population is 4 per cent. In all three groups, hyperemetics, anxiety patients with vomiting and anxiety patients with no vomiting, the incidence was 38 per cent.

Prognostically, the hyperemetics produced babies which were "big for dates", but three-quarters suffered from an associated severe illness during their pregnancy and premature and abnormal labours were also characteristic. The need for hospital care for

delivery was emphasised. Few hyperemesis patients required psychiatric support post partum. Tylden concludes,

> It is impossible to describe the extent of the physical and social difficulties with which the majority of the women with hyperemesis in this survey have had to contend. Far from expressing an unconscious desire to get rid of an unwanted foetus orally, many of those women needed a hole to crawl into, in which to protect their unborn child. (Tylden, 1968, p. 91).

Psychiatric Illness Associated with Pregnancy.

Psychiatric disorders during pregnancy are not particularly frequent, post-partum psychosis being more common.

Myre Sim (1968) reports on 54 pregnant patients referred to her during the fifteen year period 1951-1966, at the psychiatric department of a hospital. Her diagnoses are shown in Table I. Prognosis was mostly good, twenty-six cases recovered completely, and only three still required hospital care. In three instances the baby died.

TABLE I

Psychiatric diagnosis of fifty-four pregnant patients (Sim,1968)

Psychiatric Condition	Number of Cases
Depression	16
Schizophrenia or schizo-affective reaction	12
Anxiety state	6
Previous puerperal psychosis	7
General instability in pregnancy	6
Psychopathic personality	2
Inadequate personality	1
No psychiatric features	4
Total	54

A number of the referrals had been made with requests for a therapeutic abortion but no pregnancies were terminated, and Sim argues that her results indicate that the psychiatric hazards of pregnancy are not severe enough to warrant termination.

Hans Meyer (1953) studied psychiatric patients and found

that psychotic conditions first appeared following pregnancy or a related difficulty in 6.5 per cent of 611 schizophrenic women, and in 5 per cent of 713 cyclothymic women. These percentages seem low when the likely distribution of onset of psychiatric illness over the childbearing years is considered.

T.S. Zaichkina (1968) reports a study of one hundred sixteen to forty year old female patients with psychosis related to the generative periods (e.g. pregnancy, delivery, lactation, abortion). Twenty-two had experienced a prior psychotic attack not connected with the generative phase function, thirty-nine patients experienced no other attack, while another thirty-nine patients experienced a later psychotic attack not connected with pregnancy.

A.A. Robin (1962) estimates that a severe puerperal depression requiring hospitalisation occurs following approximately one in five-hundred births, however a few days of "the blues" are a common experience following delivery for about 80 per cent of mothers.

B.Pitt (1968) has pointed out that the frequent occurrence of a disabling puerperal depression, not severe enough to warrant admission to a psychiatric hospital has received little study. Pitt administered a questionnaire to 305 maternity patients at about the seventh month of pregnancy, which was repeated six to eight weeks after delivery. Where comparison suggested pueperal depression, a clinical interview confirmed the diagnosis. Where symptoms had been present for less than two weeks diagnosis was not confirmed.

Thirty-three subjects (10.8 per cent) developed pueperal depression, only one being a classical case. In the remainder "atypical" depression was diagnosed. This is a milder variant of physiological depression which is most often seen in younger women or immature personalities. It is atypical either because of the prominence of neurotic symptoms such as anxiety, or because some features are opposite to those of classical depression, for example worsening at the end rather than at the beginning of the day.

When depressives were compared with a control group from

those patients who did not become depressed, the depressives were more likely to have had a recent history of dysmenorrhoea, and to have been married for less than five years. Fewer depressives had obstetric complications in early pregnancy. There were no significant differences in respect of previous psychiatric, physical or obstetric disorders, age, endocrine abnormality, labour complications, or obvious psychological or social factors.

Pitt concludes that atypical depression is a common and important complication of the puerperium which needs intensive investigation. This is vital in that a follow-up after one year indicated that 43 per cent showed no improvement. Pitt emphasises that the implications of this continuing disability in just under 4 per cent of the population surveyed could be grave for mother and for child.

Pitt's results are supported by a study in which 101 women were interviewed shortly after full term pregnancy with normal delivery. (Murphy, Robins, Kuhn Nobuko Obayashi and Christianson 1962). Twenty-six were judged to be psychiatrically ill. Of these four had been seen by a psychiatrist.

It would seem that post-partum emotional difficulties hamper many new mothers, but they are reluctant to seek help, or perhaps their medical advisers are reluctant to give help. The implications for mother and child during these formative weeks and months are indeed grave.

Psychotherapy and the Pregnant Woman.

Many of the authors of research discussed in the previous sections of this review have concluded with remarks such as "brief psychotherapy may be useful" (Rosen, 1955) and "Any psychosomatic cry for help, of which hyperemesis is one, requires supportive psychotherapy." (Tylden, 1968).

V.M. Victoroff (1952), treated fifty-five patients with post-partum neuropathic reactions by intense psychotherapy and reported total or partial recovery in all but four cases. However he emphasised the importance of prophylaxis in view of a high percentage of relapse.

B.B. Braen (1970) has found the therapeutic group approach for school aged pregnant girls useful.

The use of psychotherapy in response to an obvious case of social or psychological stress or psychopathology is well accepted, however, increasingly the "normal" mother is also being considered as a valid subject for therapy.

Helene Deutsch was one of the earliest to suggest the view of pregnancy like puberty or menopause as a period of crisis (1944-45). Grete Bibring, (1961, p.12) elaborates this concept.

> These crises represent important biological developmental steps and have in common a series of characteristic psychological phenomena ... a number of new, specific libidinal and adaptive tasks confront the individual, often diametrically opposed to the central tasks and functions of the preceding phases. All three seem to revive and unsettle psychological conflicts of earlier developmental periods, requiring new and different solutions, all three are significant turning points in the life of the individual, and in all three the mastery of the thus initiated phase depends on the outcome of this crisis, namely on the solution and maturational reorganisation of this disequilibrium, i.e. adulthood in puberty, ageing in menopause, and motherhood in pregnancy.

Bibring emphasises the quality of the inevitable in these biologically linked crises. "Once an adult you cannot become a child again; once menopausal you cannot bear children again; and once a mother you cannot be a single unit again". (Bibring, 1961, pp. 12-13).

The vital question is whether the period of crisis is a normal, maturational occurrence in all women, or a disturbance in neurotic women. Bibring et al (1961), hypothesised that the former be the case, and in order to evaluate this conducted a longitudinal of fifteen primigravidae from the first tri-mester to at least one year post-partum. In addition, two of the subjects received psychoanalysis in order to provide more depth to the investigation. Data was collected from the women, husbands and infants by psychiatrists, psychologists, a social worker, a gynecologist and a paediatrician. When processed this supported the hypothesis that pregnancy is a time of crisis. Bibring had thought that maturation should occur in preparedness for delivery but the results suggested

that maturational changes do not occur until the post-partum period. This would support the proposition that the frequent problems in early mother-child relationships are partly due to an incomplete reorganisation of the mothers psychic equilibrium at the time of delivery. I would suggest that such reorganisation could not in fact be completed until the physical reality of the child is apparent, when the mother is assured that she and the child are safe and well following delivery.

Rhona Rapoport in "Normal Crises, Family Structure and Mental Health" (1963) also accepts this view of normal transition points in the life cycle as periods of crisis. She emphasises that although they are normal and expectable to the community, they are unique and novel to the individual. The way in which the crisis is coped with will determine the future mental health of the individual and of the family.

Gerald Caplan (1961, p12) says "A person in crisis, because of the disequilibrium, because of the state of flux, is more susceptible to influence than when he is not in crisis". The crisis of pregnancy therefore presents an opportunity to improve the total family relationships by minimal intervention.

Gerald Caplan described in 1951 a program of mental hygiene work with expectant mothers using a group psychotherapeutic approach in a clinic in Israel. Working in antenatal clinics where it was already customary for the nurse to give short lectures on the hygienic aspects of pregnancy and on the care of the child, to groups of expectant mothers waiting for the results of physical tests, it was possible to give lectures once a month to the heterogeneous group of mothers who happened to be present at the clinic that day. Each mother would generally receive five to six such lectures during her pregnancy. Each meeting consists of a fifteen minute lecture by the psychiatrist followed by a half hour discussion.

The introductory lecture is carefully planned to stimulate a reassuring atmosphere in which participants will feel free to discuss their fears and doubts. This is acheived by speaking on an emotional rather than an intellectual level and avoiding an authoritarian or didactic tone. Topics are selected for three

reasons, to impart information, in order to stimulate later discussion or because they are recognised as probable sources of worry in many expectant mothers. Examples given include difficulties with husband and other children during pregnancy, and the latent period of absence of feeling toward the new-born infant. The mother is thus forewarned about future anxieties, and she is able to ventilate her present feelings and receive reassurance concerning these.

During the discussion the lecturer attempts not to directly lead the discussion or answer questions nor does he interest himself in the problem of any individual as such, but rather his role becomes mainly interpretive. The main value of these meetings was seen as the relief of superficial emotional tensions in the normal expectant mother.

Moreno (1951) reports a slightly different group psychotherapeutic approach. Six of ten mothers with their babies formed a group led by a therapist and a paediatrician. A trained alter-ego took the part of a psychological baby within the mother until the prospective mother herself was able to take the part.

Knobel, (1967) used brief psychotherapy with a group of pregnant women concentrating on areas of conflict in their attitudes towards pregnancy revealed by a projective test. He reports that the majority of subjects terminated pregnancy with normal childbirth free from profound feelings of rejection or severe psychopathology. A control group which was not given psychotherapy validated the finding.

Wilson (1968) presents an account of four and a half years' experience with groups of young mothers and their babies. The aim of the groups was to do "the work of worrying" in relation to childbearing. This concept comes from Janis (1958) who suggests that it is helpful if thinking out the likely problems can be done in advance of actually meeting a stressful situation. Wilson used interpretation of the ongoing group dynamics to facilitate this "work of worrying".

Arthur D. Colman, (1969) used a similar group approach, but in this case as a means of studying the psychology of pregnancy rather than as a preventative mental health procedure. The group was described as a place for discussion with other pregnant women on matters of common concern relating to pregnancy and the baby. Six

primigravidae attended weekly throughout their pregnancy and with their infants during the early months of motherhood. Colman felt that they learnt to use the group constructively to ventilate feelings of anger and insecurity and to compare notes on behaviour appropriate to their new role. He comments that it seemed a valuable experience for the new mothers to see each other struggling with the same problems despite varying prenatal attitudes and feels that health workers in this field could learn a great deal from observing such groups.

Obstetricians are not however psychiatrists, and many of the advantages that can be gained from groups such as those outlined above, can also be gained from informal discussions at antenatal clinics and classes run by sympathetic nurses and physiotherapists who encourage the mothers to voice any doubts they may have; are able to remedy misconceptions mothers frequently have; and allow the mothers to gain reassurance from one another's experience.

Grantly Dick Read (1943) brought the attention of the world to the almost interchangeable nature of fear and pain in childbirth, and he trained mothers to relax their nervous, emotional and physical selves so that the interpretation of pain stimuli in the thalamus would be less rigorous rather than intensified by fear.

Howard Walser (1947) commented that pregnancy and labour should be physiological processes, but because of the complete control of the reproductive system by the sympathetic and parasympathetic nervous systems, the function of reproduction is very susceptible to emotional stimuli and fear, in particular is capable of disrupting these processes.

N.Morris (1968) reports a survey of womens attitudes and feelings during pregnancy. Of thirty-four husbands and wives interviewed, twenty-eight wives and twenty-two husbands had fears about their wives (or themselves), babies, child-birth, or related problems. Nineteen women were scared of labour, eight were not, while seven were doubtful.

Nasim Yampey (1961) analysed the characteristic fears in women about to give birth. The principal themes are: a) fear of death during delivery, b) fear of the delivery itself, c) fears ,

referred to the child and d) fear or conflict in regard to the pregnancy. Yampey ascribes these fears to an emotional immaturity and an inadequate preparation of these women. He recommends the presence of the husband during delivery.

Since the complications caused by fear during labour and delivery have been fully recognised a great deal has been accomplished. One of the easiest ways to relieve fear is with knowledge, and most Ante Natal clinics as well as many private organisations provide classes which teach mothers the simple facts of reproduction, the mechanics of labour, and discuss aspects of child care such as infant feeding. Nursing staff are also well-trained as to their responsibilities in not increasing anxiety by word or deed, and the value of support and understanding.

Gordon and Gordon (1967) conducted a series of studies dealing with social psychological characteristics of women who develop emotional problems in relation to pregnancy and childbearing. Two factors were especially associated with post-partum emotional difficulties. These were labelled as the Personal Insecurity Factor and the Role Conflict Factor. Present day role conflict was more important than personal insecurity related to past experiences in producing continuing difficulties. Eighty-five mothers who received antenatal preparation for motherhood had significantly fewer emotional upsets than did seventy-six matched controls. A follow-up study four to six years after delivery, showed that the mothers who had received preparation were healthier both mentally and physically than the controls, their lives seemed better adjusted, their marriages more successful, their children healthier, and they had more frequently become pregnant again, when they were compared with the women who had not received counseling.

Gordon and Gordon also found that better results were obtained when husband and wife both attended antenatal classes. Informal guidance at the time of routine visits was more beneficial than was classroom teaching.

Finally let us consider two descriptions of progressive maternal care programmes published in the Medical Journal of Australia,

(June, 1966) where attempts have been made to get away from the purely mechanistic approach to health care. Dr.J.A.C. Bamford describes the approach used in a six-man suburban group practice. Maternity patients and their husbands are invited to a course of eight lectures, each followed by a discussion and then a class in breathing exercises for the women while the husbands wait in a nearby room.

The lectures, in which considerable use is made of slides, cover the development of the foetus, the course of labour, and preparation for breast-feeding, although care is taken not to imply that mothers who do not succeed in establishing lactation are failures. One lecture is given at the hospital where procedures such as caesarean section are described, and the women are encouraged to visit one another in hospital. Opportunities are also taken to discuss other health care topics, such as dental health, immunization, and the hazards of smoking.

The interest of the husband is encouraged and Dr.Bamford comments "Some obviously get a great deal out of sharing the moment of delivery. In many ways it is the doctor who is privileged to be present and the husband who has the right. However husbands should never be pressurised into attending". (p.1039)

Dr. R.B. Kendall of the Royal Hospital for Women, Paddington, also emphasises early preparation for breast-feeding, including films or practical demonstrations, the benefits of physiotherapy classes, and the importance of a visit to the labour ward of the hospital. He recognises the value of having the husband present at delivery, and for rooming-in to be available following delivery. Dr.Kendall comments that "This is not a method of "natural" or "painless" childbirth, but a method of education for childbirth and motherhood, which is aimed at producing a confident and cooperative mother, irrespective of the method of delivery". The success of this programme of antenatal care is shown in a survey of one hundred consecutive primigravidae who attended the physiotherapy clinic. 10 per cent required only nitrous oxide and oxygen at delivery, very few required more than one injection of pethidine, and only 13 per cent required general anaesthesia.

These are two attempts to provide full psychological and physical antenatal care as preventive family medicine and the most significant aspect of the reports are the feelings of success and satisfaction apparent in the writing of the doctors who have instituted the programmes for their patients.

III The Encounter Group Program.

The encounter group program which has been offered to patients of Dr.G. Holdaway in Palmerston North has evolved in several ways during the two years it has been in operation. This description will relate to the program as it existed during the period between May and November, 1974. During this time there were three groups for married women, one for single women and one group for men, all meeting weekly for one hour.

The Therapeutic Team

The therapeutic team consisted of a General Practitioner specialising in obstetrics and gynaecology, a Therapist trained in psychology and a Practice Nurse, the same team attending all group sessions except for the fathers' group which was not attended by the therapist or nurse.

The General Practitioner was responsible for the physical care of the mothers and their babies and would be present at the delivery of the child. The Practice Nurse had considerable experience in midwifery and was responsible for visiting the mothers at home and providing support in the first days following delivery. The Therapist was in contact with the mothers only during the weekly group meetings; she was a mother herself and this formed an important part of her role.

The practice also includes a second G.P. and Practice Nurse and a Social Worker who might from time to time be involved with the care of the maternity patients and each attended one group session weekly.

Attendance

Group attendance varied between four and twenty-five mothers, but generally about ten women would be present at the married mothers groups, the single mothers group and the father's group being smaller. Theoretically mothers would attend from about six weeks prior to their

estimated date of delivery until about six weeks following delivery attendance being on a purely voluntary basis.

Technique Used

The weekly discussion groups were termed "encounter groups" because of the manner in which they were run.

Mothers and staff members sat informally in a circle around the room and called one another by first names.

There was no set topic of discussion, each mother being encouraged to share with the group her joys or problems as she had been experiencing her pregnancy through the past week. Group members were encouraged to talk only about their own experience rather than relating stories of friends or neighbours except where these had a direct bearing on their own feelings.

The task of the group leaders was to assist the group with the recognition and acceptance of these feelings, by interpreting discussion.

The maternity patients were very keen to use the group sessions as a chance to ask questions concerning the medical aspects of childbirth and hospital routine and such questions were always fully answered, but emphasis would be given to why the question was being asked and (frequently) why it had not been asked before. After attending the encounter groups for a few weeks most mothers learnt to use the group rather than just the staff members for answering queries and providing support.

All the mothers were encouraged to attend the hospital antenatal classes, the encounter groups not being intended as a complete preparation for childbirth but rather as a means of reducing emotional stress during the critical period six weeks either side of delivery, and of facilitating the maximum experience of pleasure for mother and father at the birth of their child.

The Evolving Nature of the Program

It is essential to understand that the encounter group program is an experimental, evolving program run by the practice and is limited by some practical considerations.

The encounter groups were all run as open groups with new members entering and old members leaving each week. Although most members were extremely regular in their attendance once they were committed to the group there were from time to time new patients present who did not return. This instability was disconcerting to the shy mothers but closed groups would have been difficult to establish with the low number of patients, an average of five deliveries a week, two or three of whom would wish to attend the encounter groups, without extending the period of attendance, and increasing the number of groups.

Thought was given to dividing antenatal and postnatal mothers since their immediate problems tended to be of a different nature, and also the antenatal patients tended to be very silent group members in comparison with the post-natal patients. It was felt that they gained from listening to those who had had their babies while needing time to get to know the group so that they would feel able to use the group in the critical post-natal period, however.

The fathers' group which proved most successful followed an earlier experiment where husbands and wives attended together. This earlier group had to be abandoned when the majority of women whose husbands could not or did not wish to attend found it unsatisfactory, while the women whose husbands did attend appeared to find difficulty in relating to both their husband and doctor in the group situation.

Different styles of leadership and methods of conducting the encounter groups were also experimented with from time to time.

The Place of an Encounter Group in Pregnancy

The rationale behind the use of encounter groups for pregnant women was that the normal pregnancy is characterised by negative feelings as well as many positive feelings. It was proposed that the mental health of the pregnant woman would be improved if she were able to express these negative feelings without guilt.

The negative feelings associated with pregnancy will to a certain extent be unique to the individual, but most are common to many women and fall into the following areas of concern:

i) Anticipated role change accompanied by loss of of independence, decrease in social life, necessity to accept responsibility for another life.
ii) Change in personal appearance accompanied by public awareness of condition, jokes, comments etc. practical difficulties with clothes etc. loss of attractiveness.
iii) Tiredness and physical discomforts.
iv) Fear of pain, complications or death during childbirth; deformity of child.
v) Reactions of husband who may not wish to accept the responsibilities of child; fears that husband ceases to find her attractive.

These feelings are not universal and in most cases are unwarranted where they exist however they rapidly lead to the principal problems of the disturbed pregnancy, loneliness and anxiety, with an associated decrease in self-confidence.

The encounter group program tackles these basic problems by providing:

i) Factual information.
ii) Companionship of other mothers in a similar situation.
iii) Honesty in expression of feelings and acceptance of negative feelings.

The encounter group is intended to lead to an increase in self-confidence and confidence in doctors and nursing staff, and a decreasse in loneliness and anxiety. The mother is happier and more relaxed prior to, during and after delivery and able to enjoy her child, thus establishing a healthy pattern of upbringing for the child.

It is recognised that the encounter group technique is not the only means of dealing with loneliness and anxiety in pregnancy. Factual information, companionship and a supportive atmosphere are provided in other antenatal care programs. The discipline of the encounter group technique was thought to be particularly valuable in directing discussion and maintaining it on the level of the emotional experience of the mothers.

SECTION II

THE RESEARCH

Purpose of the Research

The purpose of the research was threefold:

1. To investigate the feelings and attitudes of a sample of New Zealand women in the third trimester of pregnancy.
2. To investigate the differences between those patients who accepted an invitation to attend weekly encounter groups, and those patients who did not attend the groups.
3. To assess the responses of the women who did attend the groups.

The research was intended to be a preliminary investigation into the type of psychological support that is most useful in the antenatal care of maternity patients at an urban general practice.

I. Collection of Data:

1) Subjects: The maternity patients of an urban general practitioner, whose estimated dates of delivery (EDD's) fell within a certain three month period formed the sample studied in this investigation.

The length of time available for data collection was five months and this was expected to yield at most approximately 60 patients who could be followed from 28 weeks of pregnancy to delivery. This was close to the minimum of useful numbers, so no attempt was made to restrict the sample.

It is not possible to say whether the subjects are representative of the ordinary population. In this city there are many general practitioners and several gynaecologists, and women select their own doctor. The doctor concerned with this study is known for his particular interest in maternity work, a non-authoritarian, informal approach, and his interest in sex-counselling.

2) Questionnaires Used:

The complete set of questionnaires used was:

1. IPAT Neuroticism Scale Questionnaire (NSQ).
2. Semantic Differential Measurement of Meaning Form.
3. Personal History.
4. Second Questionnaire.
5. Group Questionnaire.

All forms except the N.S.Q. were designed for use in this research, (See Appendix, p.82-88.)

The I.P.A.T. Neuroticism Scale Questionnaire, (N.S.Q.), is a brief, easily administered and scored inventory measuring the degree of neuroticism or "neurotic trend". Neurosis is analysed into four components listed below:

I Tendermindedness
F Depressiveness
E Submissiveness
An Anxiety

The Measurement of Meaning Form was intended to measure the attitudes of the mother towards her parents, her husband and herself; and the baby, her pregnancy and her anticipated labour. The measurement utilised a Semantic Differential Technique (Osgood et al 1957) each of the seven concepts being rated on ten bipolar scales. This procedure yields four scores reflecting the subject's attitude to each concept, the four factors in attitude determination being labelled the Evaluative, Activity, Potency and Tension factors.

The Personal History Form was designed to provide descriptive information of the whole sample, which was known to be extremely heterogeneous, and also to provide background information on each patient so that atypical scores on any of the other questionnaires could be individually studied. Some questions were also included to help evaluate the attitudes and feelings of the women.

The Second Questionnaire was designed to provide information on the confidence and attitude of the expectant mother at the end of her pregnancy, and to assess what methods of preparation she had used.

The Personal History Form and the Second Questionnaire are both fairly short and consist of "multi-choice" or short-answer" questions.

The Group Questionnaire which consisted of five open-ended questions was designed principally to gauge the reactions of patients who participated in the encounter groups towards these groups, and also to provide ideas for modifying the nature of the groups to best fulfill the needs of the mothers.

The N.S.Q., the Measurement of Meaning Form, and the Personal History Form, together made up the first set of questionnaires

completed early in the third trimester.

The N.S.Q., the Measurement of Meaning Form, and the Second Questionnaire, together made up the second set of questionnaires completed late in the third trimester.

The Group Questionnaire was completed only by encounter group patients, in some cases late in pregnancy, but usually in the weeks after delivery.

3) Method of Collection of Data:

The principal consideration in deciding upon the manner of data collection to be used was a concern not to over-extend the goodwill of the patients and the practice staff.

Two sets of questionnaires, each designed to be self-administered, and to require not more than half an hour to complete, were given to each woman during her regular antenatal visits to the surgery. The first of these was given twelve weeks before her EDD, and the second two weeks prior to her EDD, or as close to these times as fitted with regular antenatal visits which are generally monthly for about seven months, then fortnightly, then weekly over the last month of pregnancy.

The questionnaires were handed to the subjects by the doctor, with a brief explanation in the terms of that on the introductory sheet of the first set of questionnaires (See Appendix B). On completion they were handed back to the practice nurse who quickly checked that they were correctly filled-in.

Many patients were not willing to remain at the surgery while they completed the forms, and finally it was necessary to allow patients to complete the forms at home, requesting them not to discuss their replies with friends or husband and to return them at their next antenatal visit. This was unfortunate because it meant a loss of control of the environment under which the questionnaires were completed, and the need to rely on the patient to remember to return the forms. Women were classified as group attenders if they had attended two or more encounter group sessions.

II. Results:

The number of respondents to each questionnaire varied considerably and will therefore been given separately with the results of each question.

In some instances results are given as percentages in order that comparisons may be more readily seen between unequal groups. It should be noted however that the sample numbers are small and the percentages expressed are unreliable. Statistical comparisons, of course, utilise raw scores.

Only one maternity patient approached refused to participate in the investigation. Two women were unable to comprehend some parts of the questionnaires. Fifty-one women completed at least part of the first set of questionnaires, only twenty-seven completed the second set of questionnaires.

The poor response to the second set of questionnaires was in part due to timing. It was not administered until two weeks prior to the E.D.D. Thus any mothers delivered more than two weeks premature were lost. Also unless the mother remembered to complete the questionnaires and return them immediately she was likely to be delivered before the questionnaires were returned, and again the replies lost to the investigation. However, significantly more group attenders than non-attenders completed the second set of questionnaires. (76 per cent of attenders compared with 20 per cent of non-attenders.) Some group attenders would have had more opportunity to return the questionnaires, making an extra visit to the surgery each week, although many combined their antenatal check-up with the encounter group sessions. It would seem that group-attenders were the more cooperative patients, but whether they attended groups because they were intrinsically more cooperative, or if they were more motivated to cooperate with the experiment because they attended the groups is not known.

A. Personal History.

The Questionnaire. The personal history form was a questionnaire designed to provide a brief description of the sample of maternity patients studied and also their attitudes towards certain aspects of childbearing and motherhood.

The Personal History form was included in the first set of questionnaires early in the third trimester, and was at least partially completed by 47 women.

Results. The results will be in three sections, the first being those of the total sample, the second looking at the pattern of responses given by primiparous compared with multiparous women, and the third directed towards the pattern of responses given by subsequent group attenders and non-group attenders. The Personal History form was always completed before an invitation was given for the patient to join the encounter groups.

1. Total Sample

Age and Marital Status. The mean age of the women was 23.45 years, with a range of sixteen to thirty-four years. (N = 44)

The mean age of the husbands of women in the sample was 28.02 years, with a range of twenty to fifty-eight years. (N = 42)

Three of the forty-seven women were not married, and one had separated from her husband since becoming pregnant.

Previous Pregnancies. Of the total sample twenty-one (43%) were primparous and twenty-six (57%) were multiparous. (N = 47) The number of previous pregnancies were distributed as follows:

No. of Previous Pregnancies:	0	1	2	3	4	
No. of Women:	21	12	9	2	0	(N = 44)

These results do not include miscarriages. As can be seen most women were expecting their first or second baby. Two women in the sample had previously produced twins.

Previous Pregnancy Wastage. Four women had experienced a single miscarriage, one woman had experienced two miscarriages, and one woman reported a perinatal death, a twin who survived only two days after birth. Thus six women (12.8%) had experienced previous pregnancy wastage.

Planned Pregnancies. Only 50% of the sample reported that their present pregnancy was planned. (N = 46) Of the unplanned pregnancies, twenty were described as "Not planned, but welcome" while three women chose the third option "Not planned, and may cause

some difficulties for us".

Of the four single mothers, one described her pregnancy as planned and she subsequently married. Two described their pregnancy as "Not planned, but welcome", and one chose the third option. The latter was a sixteen year old schoolgirl and was the only one to have her baby adopted.

Nausea and Vomiting. Morning sickness was experienced by 72% of the women, (N = 46), 13% saying they had been troubled "a great deal". A definition of "morning sickness" was not specified.

Prescence of Husband at Delivery. When asked if they were planning to have their husband present at delivery, twenty-five said they were, thirteen were not, while eight remained undecided. (N = 46)

Infant Feeding. Thirty-six women said that they would prefer to breast feed their baby, eight replied that they would prefer to bottle feed. Two women were undecided, and the question was N/A in one case where the baby was to be adopted. (N = 47)

Sex Preferences. When asked if they had a definite preference for a boy or a girl, thirty-three women said no, four were hoping for a boy and nine for a girl. (N = 46)

Maternal Role. Only five women said that they would not describe themselves as a maternal type of person, thirty women said that they would, but eleven were undecided on this question. (N = 46)

With regard to the question of experience for the motherhood role, two of the women described themselves as having had practically nothing to do with babies and small children, thirteen said that they had had "a little" such experience, fifteen said "quite a lot" and sixteen described themselves as being very familiar with handling infants. (N = 46)

Attitudes towards Pregnancy. An open ended question asked, "What things do you like most about being pregnant?" Forty-four women replied to this question giving a total of fofty-seven responses.

Ten commented on the movements of the baby, especially the quickening, nine on the aspect of creating a new life, and seven on the thought of the baby that they were carrying which was part of

themselves and their husbands.

The attention was enjoyed by seven, and making preparations by three, while one just liked being a mother, one felt that she had fulfilled her purpose in life, and one enjoyed the companionship brought by her pregnancy.

Feelings of contentment were reported as the best part of pregnancy by three women, two described a feeling of security, two a feeling of achievement, one a feeling importance and one excitement. One woman enjoyed the physical attractiveness pregnancy brought her.

Two women stated that the end result was the best thing about being pregnant, two were relieved to be missing periods and four women said there was nothing good about being pregnant.

A similar open ended question asked "What do you think are the worst things about being pregnant?" Again forty-four women replied giving a total of seventy-three responses. These fell into the following groupings.

Five women said that there are no bad things about being pregnant, (one of whom also said there were no good things). Morning sickness was one of the worst problems for nine women, and awkwardness and loss of activity for five. General discomfort was complained of by six women, and specific discomforts related to bladder frequency, cramp, heartburn and varicose veins in another eleven replies. One woman reported emotional upsets, one trouble sleeping and seven being generally tired.

Eleven women found their size or weight a problem, and for one the worst difficulty was overeating. Six were worried by their clothes, two were afraid that they were no longer attractive to their husbands, and two found stretch marks a problem.

Four women felt that labour was the worst part of pregnancy, and one reported that worrying whether her baby would be deformed was the worst part of her pregnancy.

Of the women who replied "nothing" in the above two questions, none had an NSQ score above a sten of seven, and of the five who replied "nothing good" only one had not planned her pregnancy.

Analysis of Previous Deliveries.

Those women who had had babies before were asked a series of questions about each previous confinement. Twenty-three replied, describing a total of thirty-six deliveries, including 2 sets twins (i.e. 38 infants produced).

Date of Delivery.

Ten deliveries were early, fourteen were late, and twelve were reported as being on time.

The deliveries reported as early were distributed as follows, one six weeks before the E.D.D. one five weeks and one four weeks early, these both being twins, three were a fortnight early, two a week early and one six days early.

Of the late deliveries, two were three weeks overdue, three a fortnight late, and the remainder were on the second, fourth, fifth, seventh, eighth, ninth, tenth, eleventh and thirteenth days after the expected date of delivery.

A peculiar response style may be noted in these results, deviating from the expected normal distribution.

Deliveries were on average 1.39 days overdue.

Length of labour.

(All "half-hours" were rounded to the higher hour).

The mean length of labour was 12.29 hours. A range of 20 minutes to 48 hours was reported. No definition of what constitutes the start of labour was given to the women answering the question. Ten of the thirty-four labours described were less than six hours duration, thirteen were between six and twelve hours, five were between thirteen and twenty-three hours in length, and six were twenty-four hours or longer.

Complications.

The women were asked if there was anything unusual about the birth, for example, an induction, a ceasarean or a forceps delivery, and also if there were any comments they would like to make

about the birth. Combining the two questions, thirteen of the thirty-six women reported a complication (36%).

Weight of Baby.

Eight infants were less than 6lb. at birth, and eight infants weighed more than 8lb. The remainder, twenty-two were between 6lb and 8lb.

Description of Birth.

Finally the women were asked to describe the birth from their own point of view as

a) Very easy
b) Fairly easy
c) Rather difficult
d) Very difficult

Five of thirty-four deliveries (15%) were described as "very easy", fourteen (41%) as "fairly easy", eleven (32.1%) as "rather difficult", and four (12%) as "very difficult".

2. Comparison of Primigravidae and Multigravidae

Age. The primiparous women were on average 3.77 years younger than the multiparous women.

Mean age primigravidae	21.40 years	(N = 20)
Mean age multigravidae	25.17 years	(N = 24)

This was a highly significant difference, $t = 3.49$, $p < .01$.

Husband's age. As would be expected the husbands of multigravidae also tended to be older than those of primigravidae.

Mean age of husbands of primigravidae	25.69 years	(N = 16)
Mean age of husbands of multigravidae	28.42 years	(N = 26)

Nausea and Vomiting. Of the primigravidae, 60% were troubled by morning sickness, of the multigravidae 80% were troubled by morning sickness.

The difference was not statistically significant.

Planned Pregnancies. Only 40% of the primigravidae had intended to become pregnant, compared with 58% of the multigravidae. The difference was not however statistically significant.

Husband at Delivery. Significantly more primigravidae than multigravidae were planning to have their husbands with them at delivery. ($\chi^2 = 4.79$, d.f. = 1, $p < .05$)

Infant Feeding. Of the seven women intending to bottle feed only one was expecting her first child. Of the two women undecided on this question, one was primiparous and one multiparous.

Sex Preferences. The percentages of primigravidae and multigravidae hoping for a boy, a girl, or neither sex in particular, were almost identical.

Maternal Role. The same percentage of primigravidae and multigravidae agreed that they would describe themselves as "maternal".

With regard to familiarity with handling infants the expected difference was observed. Only 50% of the primigravidae compared with 81% of the multigravidae chose the alternatives "quite a lot" or "very familiar with handling infants". The difference was statistically significant $\chi^2 = 4.88$, d.f. = 1, $p<.05$.

Deliveries.

The thirty-six previous deliveries of the multigravidae were also analysed in terms of whether they were to a primigravidae or a multigravidae. The numbers are too small however to make comparisons very reliable and no significant differences were found.

Length of labour, both the mean length and the distribution were almost identical for both groups as were the descriptions of labour.

3. Comparison of Those Who Later Attended the Encounter Groups and Those Who Did Not.

Again numbers were extremely low. Twenty-nine group attenders are compared with sixteen group non-attenders. Most comparisons failed to reach statistical significance, some of these are outlined below as they may be worthy of interest in that they are in some cases not in the direction that might be expected. The group attenders were 55% primigravidae while the group non-attenders were 25% primigravidae.

Slightly more pregnancies were planned among the group attenders than the non-attenders, 52% compared with 47%. Fewer group attenders had a history of previous pregnancy loss, the figure being 10% compared with 23.5%. Morning sickness was more common and more severe among the group attenders, than those who did not subsequently attend the groups, and finally the group attenders reported less experience with infants.

Sixty-nine per cent of the group attenders planned to have their husbands present at delivery, compared with only 30% of those who did not attend the groups. This difference was highly significant. ($\chi^2 = 11.61$, df = 1, $p < .01$)

Other differences were found in the case of those multigravidae that attended the groups and those that did not.

The mean length of previous labours for the fifteen group attenders was 7.00 hours and for the nineteen non-attenders 16.74 hours. ($t = 2.55$, $p < .05$) The difference was also reflected in the distribution of length of labour:

	6hr	6-12hr	13-23hr	24hr+
Group	47%	33%	20%	-
Non-group	6%	47%	5%	32%

Group attenders also described their labours slightly more favourably but the difference did not reach significance. However more group attenders also reported a history of complications than non-attenders, 44% compared with 30%. Again this does not reach statistical significance but is noted because one might expect complications to be associated more with long labours.

The group attenders also produced fewer babies under 6lb and more babies over 8lb than did the non-attenders.
($\chi^2 = 11.53$, df = 3, $p < .01$)

Discussion of Personal History Results.

The sample of maternity patients may be described as women between the ages of sixteen and thirty-four, mostly expecting their first or second baby. Nearly all had some previous experience with small children, most thought of themselves as maternal, and few had

definite preferences for a son or a daughter. Only half the women had intended to become pregnant, but almost all said the baby was welcome. The majority of the women planned to have their husbands present at delivery and nearly all hoped to breastfeed their baby. Morning sickness was experienced by three-quarters of the women, and one in nine had experienced a miscarriage.

Comparison with other studies:

The incidence of complications (36%) is lower than other studies, for example 46% reported by Grimm (1961) and 50% (Davids et al, 1962), but in these studies diagnosis was made by an obstetrician.

The incidence of planned pregnancies (50%) was expected. Winokur et al (1956) for example reported 45 per cent, but concluded that lack of planning could not be construed as meaning a lack of desire to have a baby.

Physiological vomiting was reported in 68 per cent of women by Chertok et al (1963) which is similar to the present figure (72%) which refers however to "morning sickness" and may include some cases of nausea. Tylden (1968) found that vomiters had a lower previous pregnancy wastage than non-vomiters, our figures while being extremely low were consistent with this, Two of the thirteen non-vomiters had experienced a previous pregnancy loss, compared with three of forty-six vomiters. Information not available for 1 woman who had had a miscarriage.

Tylden also found that vomiters produced heavier babies. These results are also consistent. Thirteen women did not report morning sickness, five of these being multigravidae with a total of eight children between them. Four of these were below 6lb at birth, and four between 6lb and 8lb. Of the thirty previous children of those who did report morning sickness, four were below 6lb, eighteen between 6lb and 8lb and eight about 8lb at birth. ($\chi^2 = 8.21$, d.f. = 3, $p<.05$)

B. Second Questionnaire.

The Questionnaire.

The Second Questionnaire consisted of one open-ended question and three multiple choice questions. It was included in the second set of questionnaires, completed approximately two weeks prior to the E.D.D.

There were two aims, these being

i) to elicit the feelings of the women at the end of their pregnancy.
ii) to find out what methods of preparation for childbirth and motherhood were actually being used and which of these methods were found to be most useful.

Results.

The Second Questionnaire was completed by twenty-seven women, all but four of whom had attended the encounter groups, and fifteen of whom were primigravidae.

i) Feelings at the end of pregnancy: The first question on the form was open-ended and asked, "How are you feeling about being pregnant at the moment?"

The replies were sorted into four categories as follows:

Category	Example
Positive.	"Thoroughly enjoying it".
Ambivalent (+).	"Fairly contented but sometimes wish it were all over."
Ambivalent (-).	"Rather fed-up, but am excited about having a baby, and perhaps a little worried about the baby's health."
Negative.	"I am tired and heavy and have burning legs."

The results were as shown in Table II, half of the women reporting fairly positive feelings and half fairly negative feelings.

TABLE II

Reported feelings late in third trimester of pregnancy.

Category	Number of Women
Positive	6
Ambivalent (+)	7
Ambivalent (-)	2
Negative	12
Total:	27

Questions two and three asked how the woman felt about the birth of her baby and about looking after her baby when she got home. The results are shown in Table III. The four women "very confident" about having their baby were primigravidae. All but one of the multigravidae were "fairly confident". Only one primigravidae was "very confident" about looking after her baby, and as might be expected the two women least confident about caring for their babies were primigravidae.

TABLE III

Attitudes towards delivery and care of child late in third trimester of pregnancy

Attitude	Delivery (No. of women)	Care of child (No. of women)
Very confident	4	5
Fairly confident	17	19
In-between	4	2
Rather worried	2	0
Very worried	0	0
	Total: 27	26 *

* Not applicable to one mother, baby to be adopted.

ii) Antenatal preparations: Question four related to the methods of preparation used to learn about and talk about motherhood. In Palmerston North formalised classes were offered by the Public Hospital Antenatal Department, the Plunket Society, La Leche League and by the Surgery, (encounter groups). Mothers were not encouraged to attend both the Plunket and Hospital classes, but the League and Surgery classes were more specialised and complementary to the Plunket or Hospital classes.

The results are shown in Table IV. The non-specified methods of preparation reported were "talking to mother-in-law", "past experience" and "set of records in psychoprophylaxis". All the women reported using at least one method of preparation.

TABLE IV

Methods of antenatal preparation

Method	No. of women	No. who found this method particularly useful.
Hospital antenatal classes	14	7
Plunket antenatal classes	1	1
Encounter groups	18	13
La Leche League	1	1
Talking to friends	15	6
Talking to mother	9	5
Reading books	13	3
Other	3	3
(Total no. women = 27)		

TABLE V

Number of methods of antenatal preparation used by each woman

Number of methods:	0	1	2	3	4	5	6	7+
Number of women:	0	2	12	6	5	2	0	0

Discussion of Results.

The results of the Second Questionnaire, while being limited by the numbers of replies once again, are of interest because they give some indication of the psychological state of women at the end of their pregnancy as they approach the experience of childbirth, and the reality of caring for the baby they have been carrying for almost nine months.

Less than a quarter of the women responding to the questionnaire were still completely enjoying their pregnancy, and feeling the excitement of their imminent experiences, a second quarter were looking on the bright side of things but were impatient for their pregnancy to be over and for the new role to start. The remaining half of the sample gave responses indicative of a negative psychological state, the physical discomfort, tiredness and anxiety for the future assuming the dimensions of a severe burden. It must be remembered that some of these women would have up to a month still to wait before the birth of their baby.

Nearly all the women were "fairly confident" about both the

prospective birth and about their capability as a mother. That both multigravidae and primigravidae gave the same responses would suggest that this was a realistic as well as reasonably positive attitude. Since all but four of the respondents were group attenders comparison regarding the effects of attending the encounter groups cannot be made.

There is a rather large discrepancy between the number of women known to have attended the encounter groups at least twice and the number who reported using this method of preparation. This could be due to careless completion of the questionnaire in which case responses to other sections may be similarly inaccurate, however the terminology used may be at fault. In conversation at the surgery the encounter groups were referred to merely as "groups" and some patients may not have equated them with "encounter groups" in this context.

Attendance at either the hospital antenatal classes or the Plunket antenatal classes would have provided an adequate preparation for delivery, including discussion of the development of the foetus, the process of childbirth, discussion of feeding, infant management and hospital routine, in addition to training in relaxation exercises by a physiotherapist. Just over 50% of the sample had attended one or other of these classes, and this included (73%) of those expecting their first baby, however the remainder of the women form a disturbing proportion of the sample who approached childbirth without adequate preparation despite this being available. The fault may not lay entirely with the patients however in that from time to time the demand for places in the hospital antenatal classes exceeds the facilities available and some patients are not able to start the six weeks course of classes until almost their expected date of delivery. This is even more disturbing when we consider the fact that those women who replied to this Second Questionnaire are the more "cooperative" of the initial sample of fifty-one patients, since they promptly completed and returned the questionnaire and also formed the majority of the women who attended encounter groups at the surgery. It would seem probable that the proportion of women not taking advantage of opportunities to prepare for childbirth would be even greater in the

remainder of the population.

One might have expected several of the more enthusiastic patients to report using all seven of the methods of preparation outlined in the questionnaire since these were freely available, but few women reported using more than four, and none more than five especially the less formal methods of talking to friends and mother. However only about fifty per cent of the sample reported using each of these methods, which reflects the social pressure against discussing the details of childbirth at an intimate level even between female friends and between mother and daughter.

Reading books would also seem to be a poorly used method of preparation, again about fifty per cent reported using this method of preparation but it was important for only three women, one of whom was a trained teacher and two were university graduates. In general women are not used to absorbing written information of a technical nature and seem not to be capable either of availing themselves of the written material available or of understanding or becoming interested in what they do happen to read.

Most of the twenty-seven women who replied to this questionnaire had attended the surgery encounter groups, and as can be seen in Table IV, this was the method of preparation most frequently described as important. There is a possibility of some bias in this however out of loyalty to the surgery staff involved.

An important point is that the surgery encounter groups are intended to be complementary to the hospital antenatal classes, patients being encouraged to attend both, yet only eleven of the encounter group patients had attended hospital classes.

It is also possible that attendance at the encounter groups would make women more inclined to discuss their pregnancy with their mothers and friends, it was frequently mentioned by group patients that discussions at the group meeting provided the stimulus for a discussion with their husband. It is also possible that those women who attended groups were characteristically those who were able to talk more freely about personal experiences, therefore the low number of reports of talking with mother and friends may in fact be considerably higher than in the general population.

C. Group Questionnaire.

The Group Questionnaire consisted of five completely open-ended questions relating to the encounter groups. (See Appendix E). The questionnaire was intended to reveal what aspects of the groups patients perceived as helpful and which aspects were unhelpful, as a basis for further improvements of the encounter groups.

The Group Questionnaire was administered separately from the other questionnaires. Group attenders were given a questionnaire to complete sometime after the 38th week of pregnancy. In some cases the questionnaire was not completed until several weeks after delivery.

Responses were mostly very enthusiastic and frequently no criticisms at all were given. Suggestions for improvements to the group indicated some unhappiness with the "encounter group" technique e.g. more structure in the form of brief lectures, and definite topics for discussion each week. Many women obviously felt uncomfortable with silences that developed and requests were made that "everybody be made to join in discussions" and that the thereapists keep a few "topics" to throw in for discussion when the group fell silent.

It is not surprising that the women were still uncomfortable with the encounter group techniques since none had had previous experience with these methods and were often embarrassed by the responsibility placed on the individual in the group, to speak or not to speak in discussion. Few would have attended more than half a dozen group sessions when they completed the Group Questionnaire.

It was also suggested that the women who had had their babies formed a separate group since their problems were felt to be different and "not of interest" to those still pregnant. The confined sphere of interest of the pregnant woman is remarkable and few seem able to think past the birth of the baby, which may partially account for the emotional disturbance characteristic of the early postnatal days when the mother adapts to her new role.

A typical selection of responses to this questionnaire were: "The encounter group is something that I look forward to each

week, although I'm not really sure why".

"It has helped me to think of things in many different ways, rather than go along with my own thoughts".

"Helped me over problems which were worrying me; helped me to relax and enjoy pregnancy knowing others had the same problems; gave me more confidence during my stay in hospital".

"Enjoying it very much. Since I've been going I've learnt a lot and seen others emotions revealed, than they wouldn't have revealed them unless they were going to a group like this. I have learnt not to worry so much about my pregnancy".

Among the group attenders, who answered the Group Questionnaire, there was no suggestion that the encounter groups had increased anxiety among attenders, although this has often been a comment of those who attend only once and do not return.

The social aspects of the encounter group, making friends, and a chance for an outing without the children were mentioned by many women in association with the benefits as far as the pregnancy was concerned.

There was no indication of negative feeling from the husbands towards the encounter groups in the responses to the Group Questionnaire, although the therapists were aware of this in some cases. Many women reported that group discussions were continued at home, however just as many women reported that their husbands were not interested.

D. Neuroticism Scale Questionnaire.

The N.S.Q. is a standard, self-administered inventory of forty items which measures "neurotic trend". There are four components associated with neurosis, tendermindedness (I), depressiveness (F), submissiveness (E) and anxiety (An.) The summation of these indicates the "total" neuroticism level.

Sten scores range from 0 to 10 with a mean of 5.5, a sten score between 4.5 and 6.5 being within the normal range.

Norm tables for women are provided for the conversion from raw to sten scores.

Results.

Fifty-one women completed the N.S.Q. early in the third trimester of pregnancy, and twenty-six repeated this questionnaire about ten weeks later. The test-retest correlation for these women was 0.74 for the total neuroticism scores. Of these only four had not attended the encounter groups at least twice in the interval, too few to enable a comparison of change in scores between attenders and non-attenders.

The profiles of mean sten scores on each component of the N.S.Q. are shown in Table VIII (Appendix G). Profiles are shown for the total sample of pregnant women, primigravidae and multigravidae, attenders and non-attenders, multigravidae alone according to whether they were attenders or not, and the initial and repeat profiles for those women who repeated the N.S.Q. prior to delivery.

Multigravidae had a higher total neuroticism score than primigravidae, mostly due to a higher mean score on the F (depression) component.

Group attenders were characterised by higher scores on the I (tenderminded) component than non-attenders.

The profile for the total sample at the beginning of the third trimester of pregnancy showed a high E (submissive) score, slightly raised F (depression) and An (anxiety) scores, and a slightly lower than normal I (tenderminded) score. In those women who repeated the N.S.Q. prior to delivery the E score increased and the I score decreased.

The total neuroticism sten score for the whole sample was more than one standard deviation higher than the mean score for women in the normal population. Twenty-eight women in the sample (54%) had a total sten score of 7.0 or above indicating the presence of a neurotic disposition. This is more than double the number expected in the normal population. (Scheier and Cattell, 1961, p.28).

Fifty per cent of the group attenders had a total sten score of 7.0 or above compared with 60 per cent of non-attenders. Thirty per cent of primigravidae scored 7.0 or above, compared with 66 per cent of multigravidae.

Discussion.

The N.S.Q. indicated a marked tendency towards neurosis in the pregnant woman, more than half of whom in this sample were possibly in real need of treatment. The incidence of neurosis was highest in multigravidae and may have been in part a result of previous pregnancies.

The interesting profile of the personality of the pregnant woman is objective evidence that pregnancy results in the psyche becoming destabilised, in order that the woman can prepare herself for childbirth and for caring for and nurturing her baby. The profile indicates a slight tendency towards anxiety. Multigravidae show a marked tendency towards depression, primigravidae being quite normal on the depressiveness vs cheerfulness component. The tendermindedness component which is related to the sensitive aspect of feminity, tends to be lower than normal in the pregnant woman and to decrease as delivery approaches. A person with a low score on this component is practical, tough, rugged, and responsible, and a movement towards this type of personality would seem to be the ideal natural preparation for childbirth, especially in the absence of modern hospital care. The submissiveness component, which involves dependence and differences in the expression of hostility, is higher than normal in the pregnant woman who must of necessity depend on others for care and protection. The person with a high sten score on this component is submissive, obedient and complaisant, avoiding conflict and social disapproval. A very high score on this component could indicate an unwillingness to face the pregnancy, possibly denial, and a wish to hand over all responsibility to others, however if the pregnant woman seems at times to be too complaisant, it may be concluded that one who needs to be dependent on others can not afford to be a trouble maker. Both these changes during pregnancy can be interpreted as having value for the health of the woman concerned, and so for the whole population.

It should be noted that although the anxiety component is only slightly raised, the true level of anxiety in the pregnant woman could be higher than indicated. The N.S.Q. is designed to measure neurotic trend, without giving undue weight to anxiety level at the time.

E. Semantic Differential Measurement of Meaning Form.

The Questionnaire.

The Measurement of Meaning Form, which utilises a semantic differential technique as described by Osgood et al, 1957

was intended as a means of revealing the attitude patterns of the subjects.

Seven concepts were rated by each mother, these were as follows:-

My father	(F)
My mother	(M)
My pregnancy	(P)
My labour	(L)
My baby	(B)
Myself	(S)
My husband	(H)

Each concept was rated on ten bi-polar, seven point scales. These were in each case:

Good	_: _: _: _: _: _: _	Bad
Passive	_: _: _: _: _: _: _	Active
Small	_: _: _: _: _: _: _	Large
Positive	_: _: _: _: _: _: _	Negative
Strong	_: _: _: _: _: _: _	Weak
Slow	_: _: _: _: _: _: _	Fast
Deep	_: _: _: _: _: _: _	Shallow
Unpleasant	_: _: _: _: _: _: _	Pleasant
Cold	_: _: _: _: _: _: _	Hot
Tense	_: _: _: _: _: _: _	Relaxed

Osgood et al (1957) found that the meaning of any concept seems to be dependent on three prime factors, labelled, Evaluative, Activity and Potency.

Each is measured by three of the scales. The ratings are scored from seven down to one, giving a possible score of twenty-one on each factor. The Evaluative factor (E) is measured by the three scales Good/Bad, Positive/Negative, and Pleasant/Unpleasant. The Activity factor (A) is measured by the three scales Active/Passive, Fast/Slow and Hot/Cold. The Potency factor (P) is measured by the three scales Large/Small, Strong/Weak and Deep/Shallow.

The tenth scale measured a fourth factor, Tension (T), giving a possible total score of seven on this factor.

The subject's attitude towards a particular concept is thus measured by four scores, the E, A, P and T scores.

Where the same concept has been rated on two occasions a D score may be calculated, indicating any change in the perception of that concept. Where $D = \frac{\sqrt{\Sigma (\text{difference on each scale})^2}}{\text{No. of scales.}}$

Statistical Procedure.

A principal components factor analysis was computed on the E, A, P and T scores on each of the seven concepts rated early in the third trimester of pregnancy. The four component scores for the N.S.Q. for each woman were also included in the analysis. This was done at the Massey University Computer Unit, using the Burroughs B6700 Statistical Package for the Social Sciences subprogram FACTOR. The factor analysis program prepared the Pearson product-moment correlation matrix between variables, extracted the initial factors using principal factoring with iterations, terminated at iteration number six; and then rotated the initial factor matrix using a varimax rotation to find the end solution.

Factor analysis is a means of examining a matrix of correlation coefficients for a set of variables, and detecting any underlying pattern of relationships. A factor is therefore a source variable. The factor loading of a variable is a measure of the extent to which a given factor is present in a given variable, the maximum value being 1.00. The communality of a variable also has a possible maximum of 1.00. This is the amount of variance that is shared by at least one other variable in the set and is therefore accounted for by the factors extracted.

Rotation of factors is explained by Hardyck and Petrinovich (1975, p183) as a mathematical technique for reducing the ambiguity often present in the preliminary analysis and deciding with which factor a given variable is primarily associated.

Results.

Fifty-two women completed the initial measurement of meaning form.

The mean Evaluative, Activity, Potency and Tension scores for each concept are given in Table VI.

As only twenty-seven women completed the second administration of the semantic differential Measurement of Meaning Form, D scores were calculated but the repeat scores were not subjected to factor analysis.

Results.

TABLE VI

Semantic differential early in third trimester of pregnancy

Concept	Mean Scores E	A	P	T
My Father	16.64	14.39	15.09	4.23
My Mother	16.97	14.92	13.82	4.20
My Pregnancy	17.84	14.88	15.22	4.29
My Labour	15.40	15.26	14.94	4.22
My Baby	18.54	15.40	14.73	4.21
My Self	16.49	15.34	13.98	4.44
My Husband	17.86	15.33	16.41	3.96

The mean D scores for the twenty-three mothers who attended groups and who repeated this questionnaire, ranged from 2.0 to 6.3, with a mean of 4.1. The mean D scores were similar for each of the seven concepts ranging from 3.1 for "My Husband" to 4.5 for both "My Pregnancy" and "My Labour".

As a result of the initial factor analysis eleven factors with eigenvalues greater than 1.00 were identified and subjected to varimax rotation. Following rotation seven factors remained with eigenvalues greater than 1.00. These are shown in Table VIII.

TABLE VII

Factors extracted after varimax rotation

Factor	% Var.
1	31.6
2	15.5
3	10.5
4	9.5
5	8.1
6	6.1
7	5.0

The communalities of the thirty-two variables are given in Appendix H. The most important factor accounted for 31.6 per cent of the total variance, and together these seven factors accounted for 86 per cent of the variance. They were defined as follows:

Factor 1.

Defining Variables:	Factor loading:
Husband - potency	0.83
Husband - evaluative	0.74
Husband - activity	0.59
Self - evaluative	0.53
Pregnancy - evaluative	0.52
Associated Variables:	
Pregnancy - potency	0.28
Baby - evaluative	0.27
Labour - activity	0.26
Mother - activity	0.26
Mother - evaluative	0.26
Labour - evaluative	0.25

Factor 2.

Defining Variables:	Factor loading:
Pregnancy - potency	0.81
Baby - potency	0.78
Self - potency	0.72
Baby - activity	0.70
Baby - evaluative	0.63
Associated Variables:	**Factor loading:**
Mother - potency	0.40
Pregnancy - activity	0.34
Labour - potency	0.34
Pregnancy - evaluative	0.28
Self - evaluative	0.26
Husband - activity	0.23
Husband - evaluative	0.22
Husband - potency	0.21

Factor 3.

Defining Variables:	Factor loading:
Pregnancy - tension	0.92
Self - tension	0.84

Associated Variables:	Factor loading:
Baby - tension	0.45
Self - activity	0.43
NSQ - F (Depression)	-0.29
Mother - tension	0.28
Labour - tension	0.27
Husband - activity	0.25

Factor 4.

Defining Variables:	Factor loadings:
Baby - tension	0.70
Husband - tension	0.61
N.S.Q. - An. (anxiety)	-0.60

Associated Variables:	Factor loading:
Self - activity	0.41
Pregnancy - evaluative	0.35
Labour - evaluative	0.28
N.S.Q. - F (depression)	-0.28
Baby - evaluative	0.26
Self - potency	-0.26

Factor 5.

Defining Variables:	Factor loading:
Father - potency	0.82

Associated Variables:	Factor loading:
Father - activity	0.45
Labour - activity	0.44
N.S.Q. - E (submissiveness)	0.42
Mother - evaluative	0.27
Baby - evaluative	0.25
Husband - potency	0.24
Self - activity	0.22

Factor 6.

Defining Variables:	Factor loading:
Mother - tension	0.69
Father - evaluative	0.61

Associated Variables:	Factor loading:
Mother - potency	0.47
Father - activity	0.36
Labour - activity	0.30
Husband - tension	0.29
Self - evaluative	0.23
Mother - activity	0.23

Factor 7.

Defining Variables:	Factor loading:
Labour - evaluative	0.75
Pregnancy - activity	0.69
Self - activity	0.59
Labour - activity	0.57

Associated Variables:	Factor loading:
Mother - evaluative	0.39
Self - evaluative	0.36
Husband - activity	0.23
Father - evaluative	0.21

Discussion of Results.

The mean evaluative, activity, potency and tension scores for the whole group tended to be positive, especially the evaluative scores for all the concepts rated.

Pregnancy, labour and the baby are not especially potent concepts. The husband is clearly the most potent figure in the mind of the pregnant woman, her father is more potent than her mother, and her concept of herself is almost as weak as that of her mother.

The four concepts labour, baby, self and husband tended to form a group slightly more active than the three father, mother and pregnancy.

The husband is seen as the least tense figure, while the self is the most tense. Tension scores for all concepts were, however,

bimodally distributed.

Labour is the concept which has the lowest evaluative scores, and the self is the second lowest. The baby is rated most highly followed by the husband and the pregnancy. Although the father is a more potent figure than the mother he is not rated quite so highly evaluatively.

There was almost no change in the attitude measurements following attendance at the encounter group. This would seem to be the wrong type of instrument to measure the effects of participation in such a program.

The factor analysis revealed seven factors or source variables, the first and most important of these being related to the husband.

The woman who values herself and her pregnancy highly sees her husband as the most important figure in her life. He is rated highly on potency and activity as well as the evaluative score. This does emphasise the point that the importance of the husband cannot be ignored in planning antenatal care. The husband is the most effective means of improving the psychological health and contentment of the pregnant woman.

Other variables associated with this factor are a tendency to positively evaluate the baby, labour and the mother. The mother is seen as an active personality, the pregnancy is seen as powerful, and labour perceived as an active experience.

The second factor would seem to be primarily a potency factor associating the self, the pregnancy and the baby. The baby becomes an important concept rated positively on activity and evaluation. This factor which could aptly be labelled the "motherhood factor" also involves feelings of an active, positively evaluated pregnancy; a tendency to evaluate the self highly; the positively evaluated concept of an active and potent husband. Labour and the mother are seen as potent concepts without being necessarily either active or positively evaluated.

The third and fourth factors may both be interpreted as tension factors but they are distinct. The third factor has very

high loadings on the tension scores of pregnancy and self, and smaller loadings appear for the baby, labour and mother. Both self and husband are seen as active, but neither husband nor father necessarily as tense. Somewhat surprisingly this tension seen in the self is associated with happy-go-lucky, cheerfulness on the N.S.Q.

It is extremely interesting that the "tense" subjects as indicated by the attitude-measurements are indicated only by a happy-go-lucky cheerfulness on the N.S.Q. There is some suggestion in the N.S.Q. manual that the low-scorer on this component is somewhat superficial. He (or she) is described as "cheerful to the point of 'manic' elation ... talkative (perhaps too much so)... and... too impulsive". (p.22) These results suggest a deeper tense personality below the superficial level.

The fourth factor is not related to tension or evaluation of the self but the self-concept is still active but is weak rather than strong. This factor has high loadings on tension in the baby and the husband. Pregnancy, labour and the baby tend to be positively evaluated, not necessarily the self or the husband though. This factor is associated with a low N.S.Q. (An) score which may be interpreted as an absence of anxiety, in an emotionally mature, psychologically healthy person.

The fifth factor is defined solely by the potency of the father, while the sixth factor is related to the evaluation of the father which is associated with tenseness in the mother. These two factors may be considered as artifacts since they are related little to the other 'pregnancy' variables. It would seem that the potent father figure is associated with a particularly submissive woman, who also tends to have a potent husband. Apart from the fact that she sees labour as an active experience presumably to which she must submit this factor is not generally related to pregnancy. Secondly it would appear that the woman who has a close relationship with her father tends to see tension in her mother and to a lesser extent in her husband.

The seventh factor which accounts for only 5 per cent of the total variance is related to the activity of the concepts of pregnancy, labour or self, and when these are most active the

experience of labour is most highly evaluated. This minor factor is the one with which antenatal classes are most associated. It may be interpreted to mean that the woman who thinks and talks about pregnancy and labour, is most likely to value the experience, but also that the woman who wants to "experience childbirth" more for the experience than for the child is the one who will enthusiastically attend classes to discuss all aspects of the ensuing experience. It is interesting that this factor is associated with the positive evaluation of the self, the mother and the father, but in no way with the husband or the baby.

General Discussion of Results.

To what extent the sample of maternity patients on whom the present research was conducted represent the average pregnant woman in New Zealand is not known. Generalisations from the results cannot therefore be made too freely.

Only half of the women in the sample had intended to become pregnant in spite of contraceptive advice being readily available. This appallingly high figure warrants further investigation to determine whether young married women such as these who report unplanned pregnancies truly did not wish to conceive, and if this be the case why sufficient care was not taken with contraception.

Almost all the women had positive attitudes towards their coming baby, however, and even as they approached their delivery date and negative feelings towards the discomforts of pregnancy became more typical, the women remained positive towards childbirth and motherhood.

The most important underlying factor in the attitudes of the women when seven months pregnant showed the importance of the attitude towards the husband. When the husband was seen as an active and powerful figure and also thought highly of, the woman was more likely to value herself and her pregnancy. It is imperative that the husband be fully involved in antenatal preparations for parenthood and in the birth process since he is the person most able to ensure that his wife gains fulfillment from the experience of motherhood. Typically the husband tends to feel unnecessary to the process once the child has been conceived and many would be surprised and delighted to know the importance of their role to the well-being of their wife.

A very high proportion of mothers in this sample expressed a desire to breastfeed their infants, 80 per cent. This would probably represent the proportion of mothers who would start breast feeding while in hospital but far exceeds the number of successful breast feeders. In a recent New Zealand survey Ritchie and Ritchie (1970) reported 15 per cent of mothers successfully feeding for longer than one month and the percentage of successful nursing mothers in our sample would have been no higher. The difference represents many disappointed mothers and indicates the need for support, and education

in the management and maintenance of a breast milk supply.

None of the women in the sample had taken advantage of all the possible methods of antenatal preparation open to them, and many had not even talked about motherhood with their friends and mothers. The mere provision of antenatal care services does not help the women who will not take advantage of them and public discussion in the media could promote awareness in men and women educating them for parenthood.

One of the principal aims of the present research was to investigate the differences between the women who attended the encounter groups and those who did not. The N.S.Q. suggested that encounter groups appeal to the more cultured, sensitive woman, possibly from an indulgent background rather than to the tough, practical, woman. Primigravidae were more likely to attend than multigravidae possibly because of fewer practical difficulties. The surgery has recently instituted the provision of creche facilities in order to assist multigravidae. The N.S.Q. neuroticism scores did not suggest that the attenders were "not in need of assistance", although multigravidae in general did have higher scores than primigravidae.

There were significant differences in the previous deliveries of the multiparae who attended the groups and those who did not, the group attenders had shorter labours and produced larger babies; they showed a slight but non-significant tendency to describe their labours as easier, but also to report more complications. It should be noted that precipitate labours and large babies may both be considered complications of labour, although both tend to be valued by mothers. These differences in previous deliveries are extremely important because they reach significance in spite of the low numbers involved, and further research specifically concentrating on this aspect is required. Winget and Kapp (1972) reported that women who subsequently had short labours (less than ten hours) had reported dreams with a higher than usual content of threat and anxiety and this may be a related effect.

From the point of view of assessing the results of participation in an antenatal program such as the encounter group, it will be necessary to see whether this difference relates only to multiparae, or if there are the same differences in the subsequent labours of primiparae. Such differences if they do exist would of course be associated with the women themselves not the results of group participation.

The final aim of the present investigation was to assess the responses of these women who did attend the encounter groups. The N.S.Q. and the semantic differential attitude measurement test were administered to the women prior to their being invited to join the encounter groups and again ten weeks later, shortly before the baby was due. Too few women who didn't attend the groups completed the re-tests for any comparison to be made.

Questioned shortly before delivery and following participation in the encounter groups a large proportion of the women indicated negative feelings towards their pregnancy, however too few non-group participants replied to this questionnaire, so the place of group-attendance in the arousal and degree of these feelings remains unknown. It is possible that group attendance would facilitate the expression of negative feelings, but it would seem more likely that it is normal as the physical discomforts of pregnancy become more marked and as the expected date of delivery comes very close for women to become impatient for the period of pregnancy to finish. Almost all the women questioned remained confident about delivery and about caring for their infants, again no conclusions may be made about the effect of group participation.

The pattern of responding over the weeks of attending groups was very marked. The primigravidae tended to be very quiet over the weeks she was pregnant, rarely speaking and if spoken to would reply briefly and non-committally with embarrassment. She would however attend regularly and appear to be absorbed in listening to the discussion each week without any sign of boredom. Following delivery time and time again these previously quiet, stolid girls would return

to the groups showing a completely different personality. They would join all discussions, talking rapidly and animatedly, having opinions on all topics discussed and in fact often needed to be reminded to have consideration for the other members of the group. There were of course individual differences, some women initially being more vocal than others particularly if they had some experience of speaking to a group of people such as those who had been teachers, but the overall pattern was consistent and unmistakeable. We initially assumed this to be a hormonal effect, but the same pattern was also observed among the fathers.

The multigravidae were in a minority in the groups and tended to be more vocal initially, often keen to talk about aspects of their previous deliveries. There was however a noticeable antagonism towards the pregnant multigravidae from the women in the groups who were expecting or had recently had their first babies, who showed little interest in hearing about these past experiences, but avidly questionned women from the group who had just been delivered whether it was a first child or not. The therapeutic team concluded that pregnant women tended to gain maximum reassurance from seeing other women before and after delivery, safe and well.

One of the principal functions of the group emerged as helping the mothers to cope with feelings of failure following delivery - one mother who had been delivered would bring her problems to the group thus helping perhaps six mothers to become aware of the problem prior to delivery and perhaps one or two others who had had their baby but not been able to broach the subject themselves. These feelings of failure were in two areas, natural childbirth and breast feeding, both of which warrant discussion.

Historically suffering and childbirth were known to be unavoidably associated. With the improvements in anaesthesia, analgesia and general medicine, as well as the improved nutrition of mothers in the Western world today and corresponding decrease in the incidence of rickets, childbirth is no longer the dangerous and painful experience it was once. A myth has arisen however amongst some groups that childbirth can be a painless and enjoyable experience for all women who are prepared to learn a number of psychoprophylactic

techniques. If the mother is adequately prepared, knowing what to expect and able to practice relaxation and recommended breathing exercises her discomfort is likely to be reduced to a minimum and to be overshadowed by the exhilaration of the occasion. This minimum level will however vary from woman to woman and particularly if she wishes to be as aware as possible and accept as little sedation as possible, the level of discomfort may be only just within her capacity to bear. When a mother experiences a difficult birth and requires more than usual sedation or assistance it is in no way her own fault and it is not necessary that she feel a failure.

If this is discussed and explained in the supportive atmosphere of the group mothers readily accept that the experience of childbirth should not be a competition between mothers where fitness for motherhood is equated with endurance. It is important that a woman is ready to accept whatever medical help is necessary, not denying that if all is going well the least interference with Mother Nature the better. However, few women are aware of the likelihood of a ceasarean, forceps delivery or episiotomy, let alone the reasons for such interventions. The following figures were quoted by Kendall (1966) and relate to one hundred consecutive primigravidae who attended the Physiotherapy Clinic at the Royal Hospital for Women, Paddington, New South Wales.

Normal Delivery	43%
Forceps Delivery	52%
(Mid forceps 37%, Outlet forceps 15%)	
Ceasarean Section	5%

There was no foetal mortality and no maternal mortality. Episiotomies were carried out on about 80 per cent of patients.

These percentages will vary from place to place, but all doctors would be able to give a rough estimate of the chance of one of their patients undergoing each, and the reasons and advantages could be discussed beforehand. If not discussed beforehand, it is the patient's right to be told why the procedure was used after delivery, or at her post-natal check-up.

Secondly, breast feeding attempts were also associated with feelings of failure. Once again supportive group discussions were

able to promote the point of view that competition between mothers has no place in infant feeding, the health of the baby being of prime importance. Where a mother decides she does not wish to breast feed she is in no way inferior to any other mother, love and cuddling, the important ingredients besides milk, being provided in either case.

Finally, it must be emphasised that the encounter groups were intended to promote self-confidence and positive attitudes towards motherhood, based on honest rather than misleading accounts of what to expect. Although group members were encouraged to express negative feelings toward pregnancy, delivery and towards their infants this was found to lead to a very positive overall attitude to the experience of childbirth, mothers feeling that they were important members of the team delivering their baby in health and safety rather than passive, unimportant and almost unwanted intruders in the delivery theatre of the hospital. It is a fallacy that because pain and fear are so closely associated women should be prepared for delivery without mention of likely pain or any possible complications to themselves or their infants. If a woman goes into labour not expecting to feel pain she will rapidly become very afraid that her labour is abnormal and even that she or the baby are at risk of death. If an honest account of the sensations and experiences associated with labour are provided, in addition to an understanding of the physical explanations of what is happening the woman in labour should not experience fear, and should experience a minimum degree of pain. She should feel free to immediately communicate any anxiety regarding the progress of her labour to the midwife or doctor in attendance and should in turn receive a full and honest reply.

Encounter groups such as these present a valuable and unique training experience for workers in the maternal health care field to learn to understand the joys and fears of their patients.

III. SUMMARY AND CONCLUSIONS.

Fifty-two women attending a suburban General Practice at which an encounter group programme was offered as part of routine antenatal care, were studied during the last trimester of pregnancy.

The over-all purpose of the research was to provide information necessary for the improvement of antenatal health care services. The specific aims of the research were:

i) To investigate the attitudes of a sample of New Zealand women in the third trimester of pregnancy.

ii) To investigate the differences between women who attended the encounter groups and those who did not.

iii) To assess the responses of the women who did attend the encounter groups.

A set of questionnaires, including the I.P.A.T. Neuroticism Scale Questionnaire, were completed by the women early in the third trimester of pregnancy. Twenty-six women completed a second set of questionnaires in the two weeks prior to their expected date of delivery. The responses were compared to primigravidae and multigravidae, and for attenders and non-attenders. (Attenders being defined as women who attended on more than one occasions).

The following conclusions were reached:

1) The personality of a woman does undergo change when she becomes pregnant as indicated by the typical N.S.Q. profile of the pregnant woman which is characterised by a high E (submissive) score, a slightly raised (F) depression) score and An (anxiety) score, and a rather lower than normal I (tenderminded) score. The E score tends to increase, and the I score to decrease over the last trimester.

2) In the sample studied the total neuroticism mean sten score was more than one standard deviation above that for women in the normal population, and 54 per cent of the women in this sample scored as definitely neurotic, (sten 7.0 or above).

3) Multigravidae showed a greater tendency toward depression than primigravidae, and were twice as likely to have a total sten score of 7.0 or above. In addition they were less likely to attend the encounter groups. Those who did attend differed from those who did not, in having a high neuroticism level, and on the basis of previous

obstetric history, having had shorter labours and having produced larger babies previously.

4) Encounter group attenders were characterised by higher I (tendermindedness) scores than non-attenders, whether primiparous or multiparous.

5) There was little evidence to support the view that the type of women who attend groups such as these encounter groups are the women who do not require such care. Fifty per cent of the group attenders had an N.S.Q. total sten score of 7.0 or above. (This was slightly less than the percentage for non-attenders due to the preponderence of primigravidae in the groups, however those multigravidae who did attend had a higher score than those who did not.)

6) Only half the women in the sample had planned their pregnancy despite contraceptive advice being freely available.

7) Almost all the women had a positive attitude toward their coming baby and even as they approached their delivery date and negative feelings towards the pregnancy were common, the women remained positive towards childbirth and motherhood.

8) The most important underlying factor in the attitudes of the women was related to the attitude towards the husband. When the husband was seen as an active and powerful figure and also thought highly of, the woman was more likely to value herself and her pregnancy. The husband should be fully involved in antenatal preparations for parenthood.

9) A very high proportion of mothers indicated a desire to breastfeed their infants, far in excess of the number who would succeed. The difference represents a cause for concern.

10) None of the women had taken full advantage of the methods of antenatal preparation available.

11) There would seem to be quite strong social pressure inhibiting the discussion of childbirth, even between female friends and between mother and adult daughter.

12) Those women who attended the encounter groups were generally

very enthusiastic about participation in the groups while remaining somewhat suspicious of the techniques used.

13) Primigravidae who attended the groups were frequently silent members until they returned to the group with their baby, following delivery. The husbands of primigravidae also responded in this pattern at the husbands' group.

14) Group attenders gained maximum reassurance from seeing members of the group return safely with their infants.

15) The main functions of the encounter group, were the dissemination of factual information, and the provision of a supportive situation where negative feelings could be expressed without guilt, and where each woman was encouraged to regard herself as a good mother, the competitive aspects of good mothering being actively discouraged.

16) The antenatal and post-natal encounter groups are an extremely valuable training experience for naternal health care workers.

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APPENDIX

LIST OF APPENDIX TABLES AND NOTES

APPENDIX A

Raw Data and Statistical Procedures

A. Neuroticism Scale Questionnaire. Sten Scores.

Subject		Initial					Repeat				
Primigravidae:		I	F	E	A	Tot.	I	F	E	A	Tot.
	1	4	6	5	7	5	4	9	6	7	8
	2	6	6	8	5	7	8	3	8	3	5
	5	5	5	5	7	5	6	6	5	8	7
	7	-	-	-	-	-	5	6	8	7	7
	8	4	6	8	9	8	2	6	9	9	7
	9	3	8	9	7	8	5	6	8	6	6
	10	1	3	5	7	4	5	4	6	7	6
	12	5	5	7	3	5	6	4	8	2	5
	13	5	3	5	6	5	4	4	7	5	5
	17	3	7	5	7	6	1	6	7	7	5
	18	7	1	8	3	4	5	1	7	4	3
	19	5	6	7	5	6	3	8	7	7	7
	21	7	6	5	6	7	7	8	9	7	8
	22	7	3	5	4	5	7	3	5	6	5
	24	5	5	7	6	6	-	-	-	-	-
	30	7	5	9	7	8	-	-	-	-	-
	39	5	3	8	6	6	-	-	-	-	-
Non.	40	4	7	5	7	6	-	-	-	-	-
att.	41	4	5	9	7	7	-	-	-	-	-
	46	1	6	10	8	7	-	-	-	-	-

APPENDIX A

Raw Data and Statistical Procedures

A. Neuroticism Scale Questionnaire. Sten Scores.

Subject		Initial					Repeat				
Multigravidae:		I	F	E	A	Tot.	I	F	E	A	Tot.
	3	6	7	4	8	7	5	8	7	7	7
	4	7	7	8	10	10	7	8	10	10	10
	6	6	6	7	3	6	3	6	7	3	4
	11	5	9	6	7	8	3	10	9	7	9
	14	5	6	8	7	7	1	5	6	7	5
	15	4	3	5	5	3	4	3	4	6	4
	16	5	6	10	9	9	5	8	10	8	9
	20	7	6	7	7	8	3	6	2	3	2
	23	5	3	6	3	3	4	2	9	4	4
	25	7	8	10	5	9	-	-	-	-	-
	26	7	8	8	2	7	-	-	-	-	-
	27	5	4	2	8	5	-	-	-	-	-
	28	10	10	10	8	10	-	-	-	-	-
	29	4	4	7	9	7	-	-	-	-	-
	31	5	10	9	7	10	-	-	-	-	-
	32	1	8	8	6	6	-	-	-	-	-
	33	5	7	9	4	7	4	7	9	4	6
	34	7	6	9	5	7	8	8	7	4	7
	35	6	7	7	5	7	7	8	5	6	7
	36	1	3	5	3	2	1	3	8	5	4
	37	5	6	8	9	8	-	-	-	-	-
	38	2	6	5	9	6	-	-	-	-	-
	42	3	8	9	7	8	-	-	-	-	-
Non.	43	3	6	10	6	7	-	-	-	-	-
att.	44	2	5	4	7	4	-	-	-	-	-
	45	4	8	7	3	6	-	-	-	-	-
	47	8	10	9	6	10	-	-	-	-	-
	48	5	8	8	7	8	-	-	-	-	-
	49	3	6	2	9	5	-	-	-	-	-
	50	3	9	6	6	7	-	-	-	-	-
	51	5	7	6	7	7	-	-	-	-	-
	52	2	1	5	8	4	-	-	-	-	-

APPENDIX A

Test - Retest Correlation (Total scores)

$$r = \frac{\Sigma x_1 x_2}{\sqrt{(\Sigma x_1^2)(\Sigma x_2^2)}} = 0.74$$

$$\Sigma x_1^2 = 94.65$$
$$\Sigma x_2^2 = 94.96$$
$$\Sigma x_1 x_2 = 79.74$$

Note: χ^2 has been used where the expected number of observations per cell is less than 5.0 but greater than 1.0.

Snedecor and Cochran (1967, p.235) state that the usual minimum figure is set too high and an expected frequency of 1.0 is acceptable.

B. Comparisons of primigravidae and multigravidae.

1. Age: Primi. - mean age = 21.4 yr

N = 20

Sum of squares = 216.80

Standard error of mean = 0.76

Mult. - mean = 25.17 yr

N = 24

Sum of squares = 323.33

Standard error of mean = 0.77

Standard error of difference between means = 1.08

$t = 3.77/1.08$

$= 3.49$

$n = 42$

The difference is significant beyond $p = .01$ level.

Raw Scores:

Primi:		Mult.:	
23	18	24	26
23	16	19	23
21	27	26	25
29	17	25	26
20	23	27	24
18	21	20	34
22	25	33	23
17	22	28	27
19		28	18
22		28	25
24		23	26
21		21	25

2. Husband at delivery.

Results:

	Yes	No	Undecided
Prim.	13	2	5
Mult.	12	11	3

The 'undecided' category replies were omitted.

	Observed			Expected		
	Yes	No	Tot.	Yes	No	Tot.
P.	13	2	15	9.87	5.13	15
M.	12	11	23	15.13	7.87	23
	25	13	38	25.00	13.00	38

$\chi^2 = (O-E)^2/E = 4.79$ df = 1

This is significant. ($\chi^2 = 3.84$, p =.05)

3. Familiarity with Infants.

Results:

How much have you had to do with babies and small children?

	Response:	No. of Replies	
a)	Practically nothing	2 P's	0 M's
b)	A little	8	5
c)	Quite a lot	8	7
d)	Very familiar	2	14

Responses (a) and (b) were combined as "not familiar"
" (c) and (d) " " " "familiar"

	Observed			Expected	
	NF	F	Tot.	NF	F
P.	10	10	20	6.52	13.48
M.	5	21	26	8.48	17.52
	15	31	46		

$\chi^2 = 4.88$, df = 1

The difference is significant beyond 5% level.

B. Comparison of Group Attenders and Non Attenders.

1. Husband at delivery.

Again those replies in the 'undecided' category were ignored.

	Obs.			Ex.	
	Yes	No	Tot.	Yes	No
G.A.	20	3	23	15.13	7.87
N.A.	5	10	15	9.87	5.13
	25	13	38		

$\chi^2 = 11.61$, df = 1. Highly significant

($\chi^2 = 6.63$, p = .01)

2. Length of labour. (Times increased to whole hours)

Raw Scores:

Group attenders	Non-attenders
2	4
9	22
5	2
6	24
15	12
4	8
1	48
3	7
10	48
14	6
12	8
	5
1	27
	7
1	38
	6
15	29
	6
7	6

$N_1 = 15$ $N_2 = 19$

$Tot_1 = 105$, $= 7.00$ $Tot_1 = 313$, $= 16.47$

$Em_1 = 1.34$ $Em_2 = 3.46$

$D = 9.47 \pm 3.71$

$t = 2.55$, $n = 32$

The difference is significant beyond the 5% level.

(n = 30, p = .05, t = 2.04)

3. Birth weights of previous children.

Results:

	Below 6 lb.	(6 - 8lb.)	Above 8lb.
G.A.	1	8	7
N.A.	7	14	1

Expected

	6 lb.	(6 - 8lb.)	>8lb.
G.A.	3.37	9.26	3.37
N.A.	4.63	12.74	4.63

χ^2 = 11.53, $p < .01$, df = 2.

C. Previous pregnancy wastage.

Known to be 4% in normal population

Sample: N = 47, expected 1.9
actual 6

$$\chi^2 = \frac{(6 - 1.9)^2}{1.9} = 9.39 \qquad df = 1, \quad p < .01$$

D. Birthweights of children born to vomiters and non-vomiters

Observed

	6lb.	6-8lb.	>8lb.	Tot.
V.	4	18	8	30
N.V.	4	4	0	13
				43

Expected

	6lb.	6-8lb.	>8lb.
V.	6.32	17.37	6.32
N.V.	1.68	4.63	1.68

$\chi^2 = 8.21$, df = 2, $p < .05$.

APPENDIX B

ATTITUDES DURING PREGNANCY.

We are assisting with some research about the attitudes of expectant mothers during their pregnancy, and we would like to thank you for your help.

There are three questionnaires we would like you to complete today. They are :

a) A "Measurement of Meaning" Questionnaire.

b) A Personal History.

c) The N.S.Q. Form.

Each one is fairly short and should only take about five minutes to complete.

Your name will remain entirely confidential.

.....

When you have completed all the forms, if there are any comments you wish to make, please use the space below .....

APPENDIX C

Name:.....

MEASUREMENT OF MEANING.

This questionnaire is being tried out as a method of measuring how you feel about certain things.

Each section is headed up with the name of something or someone, which you are asked to rate on several different scales. You may find some scales don't seem to fit, but try to fill in each one. Don't spend too long deciding, work fairly quickly and give your first impressions.

Here is an example to show you how to do the rating:

The colour blue.

Hot _ : _ : _ : _ : _ : _ : _ Cold

You would place a tick in whichever space you felt was the most appropriate. The categories would be :

Extremely hot
Very hot
Slightly hot
In between, or if you can't judge on this scale.
Slightly cold
Very cold
Extremely cold

Try to make definite judgements and only use the middle category as a last resort.

APPENDIX D

PERSONAL HISTORY.

If you find you are unable to choose one of the answers given, you can use the back of the page to explain more fully.

1. Name:..... Age:.....

2. If you are married, what is your husbands's age? .....
   What is his job?.....

3. Is this your first child? (Tick one answer).
   a) Yes ....
   b) No ....

4. Do you have a definite preference for a boy or a girl?
   a) Boy ....
   b) Girl ....
   c) Don't mind ....

5. How much have had had to do with babies and small children?
   a) Practically nothing .....
   b) A little .....
   c) Quite a lot .....
   d) Very familiar with handling infants .....

6. Would you describe yourself as a maternal type of person?
   a) Yes ....
   b) No ....
   c) Undecided ....

7. Have you been troubled by "morning sickness"?
   a) A great deal ....
   b) A little ....
   c) Not at all ....

8. Was your present pregnancy planned?
   a) Yes ....
   b) Not planned, but welcome ....
   c) Not planned, and may cause some difficulties for us ....

9. Are you planning to have your husband present at delivery?

a) Yes ....
b) No ....
c) Undecided ....

If you answered (b) or (c), is it you or your husband, or both of you not in favour or undecided? .....

10. Would you prefer to breastfeed or bottle feed?

a) Breast ....
b) Bottle ....
c) Undecided ....

11. Have you had any miscarriages? If so, please give date, and how long you carried the baby. For example: May, 1972 at about 8 weeks.

.....
.....

12. What things do you like most about being pregnant?

.....
.....

13. What do you think are the worst things about being pregnant?

.....
.....

14. For each previous pregnancy (if any) please answer the following set of questions on the next page. Start with your eldest child. In the case of twins or triplets just answer one set of questions. If there is anything you don't remember, write "D.R." in the space.

a) First name of child: .....

b) Date of birth: .....

c) Was he/she born early, overdue or on time? (How many days if early or late) .....

d) How many hours were you in labour? .....

e) From your own point of view would you describe the birth as:

a) very easy .....

b) fairly easy.....

c) rather difficult .....

d) very difficult .....

f) Was there anything unusual about the birth, for example, an induction, a ceasarean, a forceps delivery.

.....

g) What did the baby weigh? ....lb .... oz

h) Any other comments you think may be useful?

.....

a) First name of child: .....

b) Date of Birth: .....

c) Was he/she born early, overdue or on time? (How many days if early or late) .....

d) How many hours were you in labour? .....

e) From your own point of view would you describe the birth as:

a) very easy .....

b) fairly easy.....

c) rather difficult .....

d) very difficult .....

f) Was there anything unusual about the birth, for example, an induction, a ceasarean or a forceps delivery.

.....

g) What did the baby weigh? ....lb .... oz

h) Any other comments you think may be useful?

.....

APPENDIX F

Name:.....

GROUP QUESTIONNAIRE.

Answer the following questions as honestly and as fully as you can. If you are good at writing you may want to give very full answers, in which case use your own paper and write as much as you like.

1) How are you enjoying your experience in an Encounter Group?

2) In what ways do you think the encounter group is helpful to you during pregnancy?

3) In what ways is the encounter group not helpful to you during your pregnancy. What criticisms do you have?

4) How does your husband feel about the group?

5) Can you many any suggestions to improve the group?

APPENDIX G

TABLE VIII

Mean sten scores N.S.Q.

	N	Total	I	F	E	An
Total sample	51	6.7	4.7	6.0	6.9	6.2
Primigravidae	19	6.1	4.6	5.1	6.8	6.2
Multigravidae	32	6.8	4.8	6.5	7.0	6.4
Attenders	31	6.6	5.3	5.8	6.9	6.2
Non-attenders	20	6.5	3.9	6.2	7.1	6.5
Primigrav. att.	15	5.9	4.9	5.0	6.5	5.9
Primigrav. non.[1]	4	6.5	3.5	5.3	6.0	7.0
Multigrav. att.	16	7.2	5.6	6.6	7.2	6.5
Multigrav. non.	16	6.4	4.0	6.4	6.8	6.3
Initial N.S.Q.	26	6.2	5.1	5.4	6.5	6.1
Repeat N.S.Q.	26	6.3	4.5	5.6	7.1	6.1

1. Only four primigravidae did not attend group, therefore this profile is unreliable.

APPENDIX H

Factor Analysis of Semantic Differential Results

Variable		Communality
Father	- E	0.65
	- A	0.57
	- P	0.85
	- T	0.82
Mother	- E	0.69
	- A	0.69
	- P	0.67
	- T	0.63
Pregnancy	- E	0.73
	- A	0.77
	- P	0.76
	- T	0.99
Labour	- E	0.78
	- A	0.99
	- P	0.51
	- T	0.51
Baby	- E	0.73
	- A	0.83
	- P	0.74
	- T	0.83
Self	- E	0.64
	- A	0.93
	- P	0.71
	- T	0.80
Husband	- E	0.83
	- A	0.76
	- P	0.85
	- T	0.62
N.S.Q.	- I	0.54
	- F	0.49
	- E	0.48
	- An	0.58